

*Facta non solum verba*

ESTONIAN  
ACADEMY OF SCIENCES  
YEAR BOOK

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## FOREWORD

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The eleventh year of this century was very instructive and successful for the Academy in the true sense of the word. For the second consecutive year we used the possibility granted by the new law adopted in 2010 to update the Academy's competence and to reduce the average age of Members of Academy. We elected 7 new Members of Academy, among them also a Member of Academy in the domain of music (A.Pärt), the first in the history of the Estonian Academy of Sciences.

Estonia was replenished by five new Centres of Excellence in Research, with participation of Members of Academy. Funded by Ministry of Education and Research, the Academy composed a comprehensive and forward-looking collection of scientific articles "Research in Estonia". Besides that the Academy participated actively, both as an institution and through its members, in Estonian reservedly intensive research and social life.

As a result of support by Ministry of Education and Research, in 2011 we succeeded in starting renovation of the roof of the Academy house, the work is expected to be finalised in the first quarter of 2012. That will put an end to the leakage of the roof having for years damaged the structures of the house. It is possible, on principle to start eliminating the damage sustained – provided the funding necessary for renovation of the house, cut short three years back is restarted.

The year was illuminating for the Academy because we understood that at least some of the difficulties in the relations of the Academy with the State are conditioned by decisions taken by the State. For instance the Members of Academy seeking alternative sources of funding, being in the state of mind brightened during the crisis, noticed that a number of orders by ministries, regulations and other lower-level legal acts made it essentially impossible for the Academy to fulfil the tasks prescribed by law. In many cases the authorities have admitted their mistakes however until now recognition of the mistakes has not yet eased the situation of the Academy.

Hopefully the cooperation of the Academy, society and the State structures will improve in the future.

*Leo Mõtus*

## CHRONICLE

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January 10-13 – Vice-President Jüri Engelbrecht visited Brussels to participate in the assessment of project proposals submitted in the framework of the EU Future and Emerging Technologies (FET) Flagship Initiatives funding scheme.

January 11 – Assistant Secretary General for Foreign Relations Anne Pöitel and Foreign Relations Manager Piret Press visited Tartu and attended a meeting of the Estonian contact persons for the European Network of Service Centres EURAXESS. The main topic of discussion revolved around the options for introducing the network to enterprises and researchers.

January 25 – Board at its meeting discussed the Academy's calendar schedule of events for 2011 and issues related to the premises of the Under and Tuglas Literature Centre. Vice-President Jüri Engelbrecht presented an overview of the compilation progress of the publication "Research in Estonia" and Secretary General Leo Mõtus explained the situation regarding membership fees for international associations. The Board decided to withdraw the Academy's membership of the European Science Foundation (ESF). In view of the request expressed by Endel Lippmaa to terminate his services as Chairman of the Academy's Energy Council, Members of the Board deliberated further management of the council's activities. Arvi Hamburg and Enn Lust were nominated candidates for Chairman of the Council position. The Division of Informatics and Engineering was assigned to examine and formulate the operating principles and action plan of the council for the foreseeable future, and possibly ask both candidates to prepare their personal visions on the successive activities of the Energy Council. The Board also decided to put deliberations over appointing the Chairman of the Energy Council on the Board meeting agenda in March.

January 25 – Academy House was the venue for a joint discussion between Board Members of the Academy and representatives of political party factions in the Riigikogu, which was primarily aimed at preparing a comparative analysis of provisions dedicated to research, development and entrepreneurship policies in the 2011 election programmes of those political parties.

February 1 – Vice-President Jüri Engelbrecht participated in a work meeting of the European Federation of National Academies of Sciences and Humanities (ALLEA), the European Academies' Science Advisory Council (EASAC) and *Academia Europaea* in Brussels.

February 16 – Vice-President Jüri Engelbrecht attended a NETWATCH Advisory Board meeting in Seville. The EU 7th Framework Programme for

Research and Technological Development (in further text FP7) project NETWATCH ([netwatch.jrc.ec.europa.eu](http://netwatch.jrc.ec.europa.eu)) is an information platform, which for now is mainly focused on ERA-NETs. It was started as a three-year project, but on the basis of interim reports stakeholders suggested extending the project up to March 2013.

February 28 – Vice-President Jüri Engelbrecht participated in the 21st session of the Advisory Board for the FP7 specific programme “People” in Brussels.

March 2 – House of the Estonian Writers’ Union was the venue for a festive seminar “Dreams of Reality. Friedebert Tuglas 125, Karl Rumor-Ast 125” organised in the programme of events celebrating the 125th anniversary of the birth of F.Tuglas.

March 2 – Academy was visited by a Taiwan delegation, chiefly composed of researchers and political scientists who intended to get a closer look at the e-election system in Estonia. The delegation was received by President Richard Villems, Vice-President Jüri Engelbrecht and Secretary General Leo Mõtus.

March 8 – Board at its meeting announced a consecutive Student Research Paper Contest under the auspices of the Academy, approved the Academy’s Action Plan 2011, accepted the financial activity report 2010 and budget 2011, and decided to submit them for approval to the General Assembly. The Board also considered issues relating to advancement of the Academy’s publishing activities and electing members from among prominent figures in the creative community. Dr. Arvi Hamburg was appointed Chairman of the Energy Council and Member of the Academy Enn Lust member of the Council. The Board agreed to sign an association agreement with the Estonian Chemical Society and the Estonian Society of Human Genetics.

March 21-23 – Foreign Relations Manager Piret Press attended the Annual Conference of the European Network of Service Centres EURAXESS in Limassol (Cyprus), which was devoted to summing up the results of the project nearing its conclusion in the financial year. The project “Enhancing the Outreach and Effectiveness of the Partners in the EURAXESS Services Network” (EURAXESS TOP) is a project funded by the European Commission, which brings together partners from 11 states, including Estonia. An overview was provided of the network’s enlargement plans and activities in third countries (China, Singapore, Japan, USA and India).

March 25 – Vice-President Jüri Engelbrecht attended celebrations in Vilnius to mark the 70th anniversary of the Lithuanian Academy of Sciences.

March 29-30 – Raivo Uiibo represented the Academy at a meeting of the ALLEA Standing Committee on Science and Ethics in Brussels. The range of problems considered at the meeting focused around the impact of integrity issues in relation to scientific studies in separate fields of research. Among other things attention was given to planning of follow-up activities.

April 5 – Board at its meeting heard a survey on solving the problems with regard to the Estonian Academy Publishers, which had been raised at the previous meeting of the Board. Nomination of Professor Ülo Mander of the University of Tartu for the K. E. v. Baer Memorial Medal was approved. With a view to directing and co-ordinating purposeful developments in the sphere of medical science and health care, the Board decided to establish the Standing Committee on Medical Science and Health Strategy (ATSAK) and appointed Eero Vasar Chairman of the Committee. The following agenda items were heard: an overview presented by President Richard Villems on coordination of the National Health R&D programme TerVE aimed at enhancement of the capability level in the health sciences, an explanation given by Secretary General Leo Mõtus about alterations in the membership fee list of international science organisations to be covered by the Academy, and suggestions of the Divisions on specifying the successive vacancies of the Academy membership. The statute of the Energy Council was approved.

April 5 – Association Agreements with the Estonian Economic Association and the Estonian Society for the Study of Religions were signed in the Academy Hall.

April 6 – Academy Hall hosted a public academic lecture by Tarmo Uustalu “From certified software to certified science”.

April 7 – Jüri Engelbrecht participated in a strategy workshop “Innovation Union: Joint Programming and its Instruments” organised by the European Commission DG Research and Innovation in Brussels.

April 20 – activities of the Academy in 2010 were summed up at the annual meeting of the General Assembly. Reports on the activities of the Academy in 2010 were presented by Heads of Divisions Jaak Aaviksoo, Tarmo Soomere, Ilmar Koppel, Urmas Varblane and President Richard Villems. The General Assembly approved the 2010 Report of the Academy. Secretary General Leo Mõtus presented a report on the financial activities of the Academy in 2010 and an overview of the budget for 2011. New Members of the Academy elected in December 2010 were introduced to the General Assembly and a scientific paper was delivered by Vladimir Hižnjakov. The proposal of the Board concerning election of 7 new Members to the Academy in 2011 was presented by President Richard Villems.

April 28-29 – President Richard Villems and Vice-President Jüri Engelbrecht attended the 150th anniversary celebrations of the Croatian Academy of Sciences and Arts.

May 4 – Vice-President Jüri Engelbrecht participated in an extraordinary meeting of the European Science Foundation Member Organisations in Frankfurt, where issues regarding the establishment of a new organisation Science Europe were discussed.

May 8-10 – Member of the Board Peeter Tulviste attended as representative of the Academy the General Assembly of the *Union Académique Internationale* (UAI) in Brussels.

May 10-11 – Academy House was the venue for a regular session of the ESF Marine Board. Member of the Academy Tarmo Soomere was the principal local organiser. Tallinn was visited by around 50 leading marine scientists and science administrators of Europe, among others by Arnoldas Milukas, Head of Unit Management of Natural Resources, Environment Directorate, EC DG Research and Innovation. Welcome Speech to the session was given by Jüri Engelbrecht. The Plenary Meeting was preceded by a session of the Marine Board Executive Committee. A meeting of the Marine Board Communications Panel was likewise held in the schedule of the major event.

May 12 – Academy Science Day was held in Lääne County.

May 25 – Academy Hall hosted a public academic lecture by Enn Tõugu “Mutiny of computers – how smart a computer can we still keep in intellectual bondage?”

May 26-27 – Vice-President Jüri Engelbrecht attended a meeting of the International Advisory Board (IAB) in Bucharest, focusing on a range of topics with respect to restructuring of research and higher education systems.

May 30-31 – Assistant Secretary General for Foreign Relations Anne Põitel participated in a workshop for representatives of National Contact Point Organisations in Brussels, organised by the European Network of Service Centres EURAXESS. Key issues discussed at the workshop were related to the latest European wide initiatives (European Framework for Research Careers, establishing EU cross-border pension funds, open labour market) and results of the EURAXESS TOP project, where a considerable number of network members had been involved.

June 14 – meeting of the Board was followed by a presentation of the book “Eesti Vabariigi teaduspreemiad 2011” (National Science Prizes of the Republic of Estonia 2011). The Board decided to announce seven vacancies for the Academy membership and prepared a time schedule for the elections. Upgrading the work of the Estonian Academy Publishers was discussed in greater detail. After hearing an overview of the publishing problems presented by Chairman of the Academy’s Publishing Council Jaak Järv, the Board decided to acknowledge the achievements of the Publishers in keeping the scientific journals in accordance with high international standards. The Board resolved to form a panel for drawing up the Estonian Academy of Sciences Development Plan (2011-2015), approved the new composition of the Academic Council of the Under and Tuglas Literature Centre and nominated Professor Kari Olavi Raivio of the University of Helsinki as Member of the Council of the University of Tartu.



June 16 – presentation of the publication “Teadusmõte Eestis (VI). Elu- ja maateadused” (Scientific Thought in Estonia (VI). Life and Earth Sciences) was held in the UT Botanical Gardens. Association Agreements were signed with the Estonian Economic Society and the Estonian Society for the Study of Religions.

June 16-17 – Vice-President Jüri Engelbrecht and Secretary General Leo Mõtus attended a meeting of the EASAC Council in Copenhagen. The agenda of the meeting included an overview of the financial results for the fiscal year, introduction of the Danish EU Presidency programme and consultations over the prepared and upcoming EASAC reports on science related topics.

June 23 – Vice-President Jüri Engelbrecht participated in the Advisory Board meeting of the FP7 specific programme “People” in Brussels and gave a speech devoted to ethical issues.

June 24-July 2 – young scientists Tõnu Esko and Mart Kull (University of Tartu), nominated by the Academy, listened to the lectures of Nobel Laureates and interacted with the international Best Talents at the 2011 Lindau Meeting on medicine and physiology in Lindau (Germany).

August 18 – His Holiness the 14th Dalai Lama, Tenzin Gyatso gave a lecture at the Academy House on the subject of Buddhism and science.

August 19 – Azerbaijan’s Ambassador Tofig N.Zulfugarov visited President Richard Villems and delivered to the President an invitation to the International Humanitarian Forum in Baku. Options of collaboration between the Estonia and Azerbaijan researchers were considered.

September 7-11 – President Richard Villems visited the Georgian National Academy of Sciences in Tbilisi, delivered an academic lecture and had meetings with colleagues in his research area.

September 7 – Board at its meeting heard an overview of the compiling process with regard to the Estonian Academy of Sciences Development Plan for 2011-2015 presented by Vice-President Jüri Engelbrecht, a report about the tasks of the Standing Committee on Medical Science and Health Strategy (ATSAK) as well as the topics to be discussed at the Estonian Medical Science and Health Strategy Conference given by Chairman of ATSAK Eero Vasar, information concerning the earnings of the Estonian Academy of Sciences subsidiary foundation of the Estonian National Culture Foundation provided by Vice-President Mart Ustav, and a progress review regarding the roof renovation works of the Academy House presented by Secretary General Leo Mõtus. Enn Tõugu was nominated as representative of the Academy to the Appraisal Panel of the Estonian Science Communication Award upon withdrawal of Peeter Tulviste from membership in the panel.

September 21 – Academy Hall hosted a public academic lecture by Martin Zobel “The role of fungi in the formation of a *phytocoenosis*”.

September 23 – Academy as a project partner coordinated the Researchers' Night 2011 events in Tallinn, introducing researchers and science to the wider public.

September 27-30 – Vice-President Jüri Engelbrecht participated as a representative of the Academy in the work of the 30<sup>th</sup> General Assembly of the International Council for Science (ICSU) in Rome. Professor Gordon McBean, a Canadian meteorologist was elected next President of ICSU. Likewise, new members were elected to the Executive Board.

October 4 – Academy House was the venue for a Joint Information Day "Estonian Centres of Excellence in Research" organised by the Estonian Academy of Sciences, the Ministry of Education and Research and the Archimedes Foundation.

October 8-12 – President Richard Villems participated in the International Humanitarian Forum in Baku.

October 13-15 – Vice-President Jüri Engelbrecht attended a festive session celebrating the 40<sup>th</sup> anniversary of the Montenegrin Academy of Sciences and Arts in Podgorica.

October 14 – Secretary General Leo Mõtus had a meeting with a delegation of the National Science Council of Taiwan headed by Deputy Minister Cheng-Hong Chen at the Academy House. An Agreement on Scientific Cooperation was signed between the National Science Council of Taiwan and the Estonian Science Foundation.

October 14 – Academy House was the venue for a seminar titled "Organic-Bioorganic Synthesis", which was dedicated to the 120th anniversary of the birth of Paul Kogerman and the 80<sup>th</sup> birthday of Ülo Lille. The seminar was jointly organised by the Estonian Academy of Sciences and Tallinn University of Technology.

October 14 – Estonian Medical Science and Health Strategy Conference was held in the A.Linkberg Lecture Hall at the *Biomedicum* building in Tartu. The conference was organised by the Academy's Standing Committee on Medical Science and Health Strategy in the anniversary programme of the UT Faculty of Medicine.

October 18 – Board at its meeting decided to register 15 proposed candidates for seven announced vacancies for membership of the Academy and to submit their candidature for elections to the General Assembly of December 7, 2011. Research Professor Agreements with Research Professors of the Academy Tiina Nõges, Pärt Peterson and Martti Raidal were prolonged for an additional year.

October 21 – Vice-President Jüri Engelbrecht attended the opening event of a new science organisation Science Europe in Berlin. Estonian representative Toivo Maimets, Professor of the University of Tartu was elected Governing Board Member of the association.

October 27 – Members of the Academy visited Eesti Energia Oil Industry, where they examined new technological solutions for oil shale processing and refining.

November 8 – Board at its meeting decided to coordinate draft amendments to Government of the Republic of Estonia Regulation No. 51 of 9 February 1999 “Approval of the Statute on the National Science Prizes”. The Board further resolved to suspend discussion and coordination of draft regulations “Procedure for formation of the assessment panel to the Estonian Research Agency and its operating procedure” and “Conditions and procedure of application for institutional research support, its assignment and changing its volume” until the Board of the Academy would get an opportunity to examine the draft regulation with accompanying explanatory memorandum relating to personal grants and to determine its position on the issue. Considerations over the results of the Academy's Student Research Paper Contest 2011 given by Chair of the Appraisal Panel Georg Liidja were heard and appraised of.

November 8 – Academy House was the venue for the Conference of the Student Research Paper Contest Winners, which included conferral of the diplomas and delivery of papers by laureates.

November 9 – Academy Hall hosted a public academic lecture by Andres Metspalu “Genetics in relation to the Gene Bank project”.

November 9-10 – Vice-President Jüri Engelbrecht participated in the process of planning cross-border joint research under the FP7 Joint Programming Initiatives (JPI) project in Brussels. The NETWATCH Advisory Board session, which followed on November 11, was focused on finding instruments to integrate JPI activities into the NETWATCH project.

November 10 – Assistant Secretary General Galina Varlamova participated as representative of the Academy in the seminar “The Future of Social Sciences and Humanities in Horizon 2020” in London organised by the British Academy and ALLEA. The Keynote Address was given by Máire Geoghegan-Quinn, EU Commissioner for Research, Innovation and Science.

November 16-18 – Vice-President Jüri Engelbrecht and Secretary General Leo Mõtus attended the World Science Forum in Budapest.

November 16-21 – President Richard Villems visited the Academy of Sciences of the Republic of Tajikistan and attended the celebrations of its 60<sup>th</sup> anniversary in Dushanbe. R.Villems delivered a lecture about the genetic history of the Iranian-speaking peoples to members of the academy and university students. Based on mutual interest of both parties, an intention of

signing an agreement of scientific cooperation between the Tajik and Estonian academies of sciences was expressed.

November 18 – Academy House was the venue for the conference “Deliberations on archaeology and history” dedicated to the 100<sup>th</sup> anniversary of the birth of Artur Vassar (1911-1977).

November 22-23 – Foreign Relations Manager Piret Press participated as representative of the Academy in a workshop organised for National Point Contact Persons of the European Network of Service Centres EURAXESS in Brussels. Among the topics discussed were the new Framework Programme for Research and Innovation Horizon 2020 and a recent project TOP II integrating EURAXESS activities, also a decision was reached on altering the network structure.

November 23-24 – Vice-President Jüri Engelbrecht participated in the European Science Foundation Conference and Annual Meeting in Strasbourg.

December 7 – General Assembly elected at its plenary meeting seven new Members from among 15 candidates to the announced vacancies: Martti Raidal – in exact sciences, Jakob Kübarsepp – in materials engineering, Toomas Asser – in medical science, Urmas Kõljalg – in biosystematics and ecology, Margus Lopp – in chemistry, Karl Pajusalu – in linguistics and Arvo Pärt – in music.

December 13 – Board at its meeting heard and approved the 3<sup>rd</sup> year work reports of Research Professors Tiina Nõges, Pärt Peterson and Martti Raidal. Discussions also covered a proposal presented by the Division of Humanities and Social Sciences regarding a nomination for the Nobel Prize in Literature, and preparation of the Academy's Development Plan (2011-2015).

December 20 – collections of articles “Teadusmõte Eestis (VII). Meri. Järved. Rannik” (Scientific Thought in Estonia (VII). Sea. Lakes. Coast) and “Research in Estonia. Present and Future” were presented in the Academy Hall.

December 28 – seminar “International Year of Chemistry” was held in Tartu to mark the 150<sup>th</sup> anniversary of the birth of Gustav Tammann.

## MEMBERSHIP OF THE ACADEMY

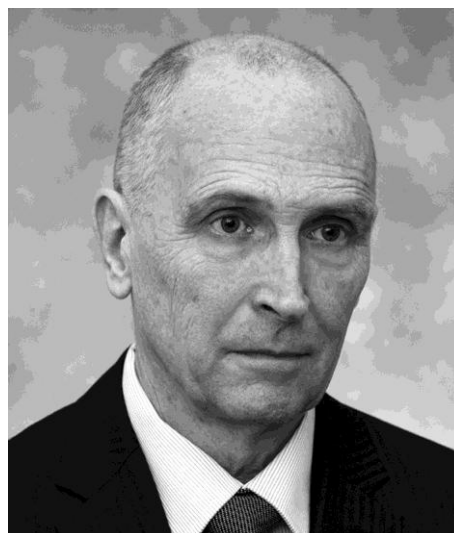
Seven new members were elected to previously announced vacancies of the Academy membership by the General Assembly on 7 December:



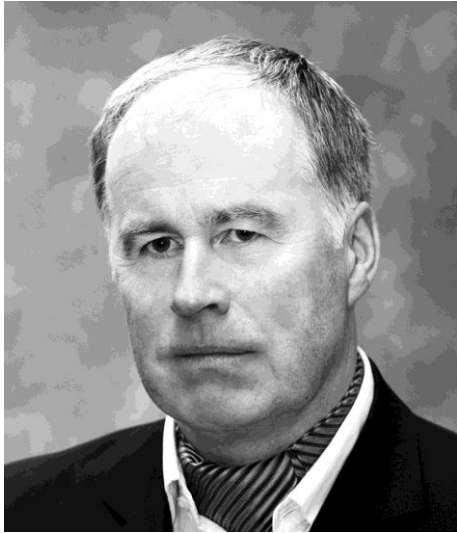
*Toomas Asser*  
in medical science



*Martti Raidal*  
in exact sciences



*Jakob Kübarsepp*  
in materials engineering



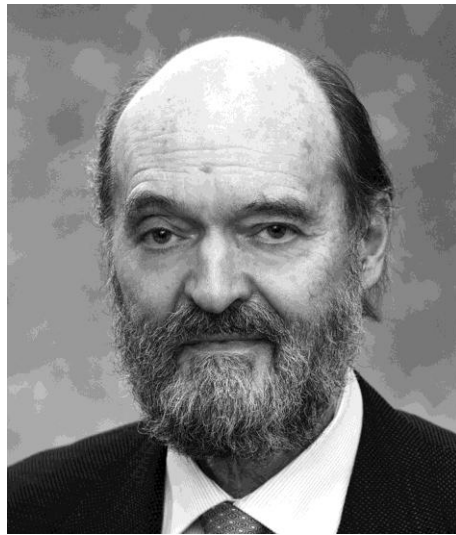
*Urmas Kõljalg*  
in biosystematics and ecology



*Margus Lopp*  
in chemistry



*Karl Pajusalu*  
in linguistics



*Arvo Pärt*  
in music

Foreign Member of Academy Johannes Piiper died at age 87 on January 2, 2012 (see p. 182-183).

As of February 2012 the Estonian Academy of Sciences numbered 73 full members and 16 foreign members, who distributed among four divisions as follows:

#### DIVISION OF ASTRONOMY AND PHYSICS

(17 members, 4 foreign members)

Members: Jaak Aaviksoo (Head of Division), Jaan Einasto, Ene Ergma, Vladimir Hižnjakov, Arvi Freiberg, Georg Liidja, Endel Lippmaa (up to December 14, 2010), Ülo Lumiste, Tšeslav Luštšik, Eve Oja, Martti Raidal, Enn Saar, Peeter Saari, Mart Saarma, Arved-Ervin Sapar, Gennadi Vainikko, Richard Villems.

Foreign Members: Richard R. Ernst, Charles Gabriel Kurland, Jaan Laane, Jaak Peetre.

#### DIVISION OF INFORMATICS AND ENGINEERING

(17 members, 4 foreign members)

Members: Olav Aarna, Hillar Aben, Jüri Engelbrecht, Ülo Jaaksoo, Lembit Krumm, Valdek Kulbach, Jakob Kübarsepp, Rein Küttner, Ülo Lepik, Enn Lust, Enn Mellikov, Leo Mõtus, Arvo Ots, Tarmo Soomere (Head of Division), Enn Tõugu, Raimund-Johannes Ubar, Tarmo Uustalu.

Foreign members: Antero Jahkola, Gérard A. Maugin, Michael Godfrey Rodd, Grigori Mints.

#### DIVISION OF BIOLOGY, GEOLOGY AND CHEMISTRY

(23 members, 4 foreign members)

Members: Toomas Asser, Jaak Järv, Ain-Elmar Kaasik, Dimitri Kaljo, Mati Karelson, Ilmar Koppel (Head of Division), Urmas Kõljalg, Hans Kuuets, Agu Laisk, Ülo Lille, Margus Lopp, Udo Margna, Jüri Martin, Andres Metspalu, Erast Parmasto, Anto Raukas, Valdur Saks, Martin Zobel, Hans-Voldemar Trass, Raivo Uibo, Mart Ustav, Eero Vasar, Mihkel Veiderma.

Foreign members: Carl-Olof Jacobson, Matti Saarnisto, Helmut Schwarz, Jānis Stradiņš.

#### DIVISION OF HUMANITIES AND SOCIAL SCIENCES

(16 members, 4 foreign members)

Members: Jüri Allik, Mihhail Bronštein, Raimund Hagelberg, Mart Kalm, Arvo Krikmann, Armo Kõörna, Valter Lang, Karl Pajusalu, Arvo Pärt, Jaan Ross, Huno Rätsep, Karl Siilivask, Peeter Tulviste, Jaan Undusk, Urmas Varblane (Head of Division), Haldur Õim.

Foreign members: Els Oksaar, Päiviö Tommila, Endel Tulving, Henn-Jüri Uibopuu.

During 2011 the majority of members of the Estonian Academy of Sciences carried on their research and academic activities as leading experts in their fields of study.

Ene Ergma continued as President of the Riigikogu and Jaak Aaviksoo as Minister of Defence (up to April 6, 2011), since April 6 as Minister of Education and Research.

Many members served as experts and advisers complementary to their principal occupation. The following members sit on expert panels and councils of national significance:

Riigikogu – Peeter Tulviste (up to March 26, 2011);

President's Academic Advisory Board – Jüri Allik, Jüri Engelbrecht, Mati Karelson, Martti Raidal, Jaan Ross, Mart Saarma, Richard Villems;

Board of the Cultural Foundation of the President of the Republic of Estonia – Jaan Undusk;

Research and Development Council – Jaak Aaviksoo, Mart Saarma, Richard Villems;

Estonian Research Council – Rein Küttner, Eero Vasar;

Council of the Estonian Science Foundation – Enn Mellikov, Leo Mõtus;

National Science Prize Committee – Richard Villems (Chairman), Jaak Järv, Martin Zobel, Enn Tõugu, Jaan Undusk, Urmas Varblane.

Richard Villems sits on the Committee for Sustainable Development reporting to the Government of the Republic of Estonia.

Olav Aarna, Mart Kalm (up to February 3, 2012) and Jakob Kübarsepp (since February 3, 2012) are members of the Quality Assessment Council of the Estonian Higher Education Quality Agency.

Jaak Aaviksoo (Chairman), Mati Karelson, Ilmar Koppel, Rein Küttner, Peeter Saari and Peeter Tulviste are members of the Research Policy Advisory Committee at the Ministry of Education and Research. Jüri Engelbrecht is a member of the Steering Council for the Internationalisation of Estonian Higher Education and Research. Several members of the Academy are involved in the Steering Committees of National R&D Programmes: Peeter Saari – “Supporting Terminology in Estonian (2008-2012)”, Jaan Undusk – “Estonian Language and Cultural Memory (2009-2013)” and Ain-Elmar Kaasik – “Compilation and Publishing of Textbooks in Estonian for Higher Education (2008-2012)”. Dimitri Kaljo was Chairman of the Expert Council on Science Collections (up to January 29, 2012). Ene Ergma (Chairman) and Ülo Jaaksoo are members of the Estonian Space Policy Working Group.

Ülo Jaaksoo, Mart Ustav and Richard Villems are members of the Innovation Policy Committee at the Ministry of Economic Affairs and Communications; Ülo Jaaksoo is also a member of the Informatics Council.



Raivo Uiho was a member of the Gene Technology Committee at the Ministry of the Environment (up to October 6, 2011), Eero Vasar is a member of the same committee since October 6. Leo Mõtus is Deputy Chairman of the Research Council for the Ministry of Defence and Karl Pajusalu is a member of the Estonian Language Council.

Estonian Centres of Excellence in Research are headed Raimund-Johannes Ubar – “Centre for Integrated Electronic Systems and Biomedical Engineering”, Martin Zobel – “Frontiers in Biodiversity Research”, Eero Vasar – “Centre of Excellence for Translational Medicine”, Tarmo Uustalu – “Estonian Excellence in Computer Science”, Valter Lang – “Centre of Excellence in Cultural Theory”, Vladimir Hižnjakov – “Mesosystems – Theory and Applications”, Enn Lust – “High-technology materials for Sustainable Development”, Martti Raidal – “Dark Matter in (Astro)particle Physics and Cosmology” and Jüri Engelbrecht – “Centre for Nonlinear Studies”.

Jaan Ross is Director and Chairman of the Council of the Graduate School of Culture Studies and Arts at the Estonian Academy of Music and Theatre; Karl Pajusalu is Chairman of the Council of the Doctoral School of Linguistics, Philosophy and Semiotics at the University of Tartu; Eve Oja is Chairman of the Council of the Estonian Doctoral School in Mathematics and Statistics.

Ain-Elmar Kaasik is Chairman of the Registration Committee of the State Agency of Medicines.

Quite a few members of the Academy are involved in the activities of international scientific organisations as well as on the editorial boards of scholarly journals.

Vladimir Hižnjakov and Ülo Lille were awarded the National Science Prize for long-standing achievements in research and development (see p. 61-62), the yearly prize in the category of exact sciences was bestowed on Gennadi Vainikko and in the category of the humanities on Valter Lang (see p. 63).

In 2011 many members of the Academy in the same way received honours and academic recognition from various associations and organisations in the form of awards and honorary titles as well as by being elected a fellow, a foreign or an honorary member:

Toomas Asser was granted a Commemorative Diploma by the World Cultural Council;

Ain-Elmar Kaasik received a Badge of Honour of the Estonian Medical Association;

Valdek Kulbach was elected Honorary Member of the Estonian Association of Engineers;

Jüri Martin was granted the Leibniz Medal and named Honorary Scientist of Europe by the European Academy of Natural Sciences;

Erast Parmasto was elected Honorary Member of the European Mycological Association;

Arvo Pärt was awarded an Honorary Doctorate by the Vatican Pontifical Institute for Sacred Music (*Pontificio Istituto di Musica Sacra*) and appointed member of the Pontifical Council for Culture by Pope Benedict XVI, named Composer of the Year at the Classic Brit Awards 2011 and received the award of the Knight of the National Order of the Legion of Honour, France;

Anto Raukas was granted a Letter of Gratitude by the TTK University of Applied Sciences;

Peeter Saari was awarded the Denisyuk Medal of the Rozhdenstvensky Optical Society of Russia;

Tarmo Soomere received an Estonian Science Communication Award, whereas the developments within the BalticWay project coordinated by T.Soomere reached a special mention in the BONUS+ Award 2011 competition by the BONUS network of funding agencies for the Baltic Sea science;

Tarmo Uustalu was elected Ambassador of the Year of Science 2011-2012 for information technology;

Urmas Varblane was granted a Commemorative Diploma by the World Cultural Council;

Mihkel Veiderma received recognition from the Council for Marquis Who's Who – "A subject of biographical record".

Foreign members continued participating in the activities of the Academy and research institutions of Estonia in compliance with time-honoured collegial relationships, scientific collaborations and research alliances.

# **GENERAL ASSEMBLY, BOARD, DIVISIONS, COUNCILS, COMMITTEES**

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## **GENERAL ASSEMBLY**

The General Assembly of the Academy convened twice in 2011:

April 20

Annual Meeting

- Scientific paper by Member of Academy Vladimir Hižnjakov “Drops of quantum liquids of helium: optical properties”
- Address by Minister of Education and Research Jaak Aaviksoo
- Reports by Heads of Divisions Jaak Aaviksoo, Tarmo Soomere, Ilmar Koppel and Urmas Varblane and President Richard Villems “Activity of the Academy in 2010”
- Report by Secretary General Leo Mõtus “Financial activities of the Academy in 2010 and budget for 2011”
- Announcing vacancies for the Academy membership
- Opening of vacancies for the Academy membership and assignment of fees to Members of Academy
- Assignment of fees to Members of Academy for the period 01.05.2011-30.04.2012

December 7 Election of Members of Academy

The first session of the General Assembly was held as an annual meeting of the Academy. The session customarily focused on summing up the activities of the Academy in the reporting year 2010. Detailed data on the activities of the Academy in 2010 were made available in the “Estonian Academy of Sciences Year Book” XVI (43), which had been previously mailed to Members of Academy.

At the beginning of the meeting President Richard Villems presented the new Members of the Academy elected in December 2010 – Jüri Allik, Valter Lang, Enn Saar, Martin Zobel, Tarmo Uustalu and Eero Vasar and handed over the Diploma of Member of Academy to Eve Oja and Andres Metspalu. President thereafter handed over the K.E.v.Baer Memorial Medal to Professor of the University of Tartu Ülo Mander.

The scientific paper on the topic “Drops of quantum liquids of helium: optical properties” was delivered by Vladimir Hižnjakov, laureate of the 2011 National Science Prize for long-standing achievements in research and development.

Jaak Aaviksoo took the floor as Minister of Education and Research, dwelling on five main topics: research in Estonia, Estonian economy, possibilities and challenges, Estonian Research Agency and Academy of Sciences.

Reports on the activities of the Academy in 2010 were given by Heads of Divisions Jaak Aaviksoo, Tarmo Soomere, Ilmar Koppel and Urmas Varblane through the activity of their respective Divisions. The summary was made by President Richard Villems. On the basis of the reports together with materials presented in the Year Book, the General Assembly upon proposal of Secretary General approved the report of the Academy for 2010.

Secretary General Leo Mõtus submitted an overview on execution of the Academy’s budget 2010 and presented the budget for 2011, which was approved by the General Assembly.

President Richard Villems presented to the General Assembly a proposal of the Board to elect additionally seven new Members of the Academy in 2011, of whom 6 under the schedule based on legislative amendment and one to the vacancy gone unfilled in 2010. The resolution to open vacancies for the Academy membership was decided by a show of hands.

Secretary General Leo Mõtus presented to the General Assembly the payment plan of fees to Members of Academy for the period 01.05.2011-30.04.2012. During the following discussion opinions were expressed by Dimitri Kaljo, Endel Lippmaa, Udo Margna, Arvo Ots, Enn Tõugu, Richard Villems, Jaak Järv, Tarmo Uustalu, Peeter Saari and Mihkel Veiderma. The General Assembly, reckoning with the considerations of Members of Academy, decided to distribute the amount allocated by the Government of the Republic Regulation on Fees to Members of Academy in the period from 01.05.2011 to 30.04.2012 equally between all Members of Academy.

In the process of discussion the floor was taken by Jüri Engelbrecht, Endel Lippmaa and Leo Mõtus.

The principal item on the agenda of the second session of the General Assembly, held on December 7, was election of new Members of Academy to the announced 7 vacancies of the Academy membership from among 15 candidates nominated by higher schools and research institutions. Voting by ballot gave the following results: elected in exact sciences – Martti Raidal, the sole candidate in that area; elected in materials engineering (candidates Jaan Aarik and Jakob Kübarsepp) – Jakob Kübarsepp; elected in medical science (candidates Toomas Asser, Jaan Eha, Heidi-Ingrid Maaros and Tõnis Timmusk) – Toomas Asser; elected in biosystematics and ecology (candidates

Urmas Kõljalg and Ülo Niinemets) – Urmas Kõljalg; elected in chemistry (candidates Ivo Leito and Margus Lopp) – Margus Lopp, elected in linguistics (candidates Karl Pajusalu and Urmas Sutrop) – Karl Pajusalu, elected in music (candidates Arvo Pärt and Erkki-Sven Tüür) – Arvo Pärt.

Endel Lippmaa and Richard Villems took the floor in the progress of discussions.

## BOARD

The Board of the Estonian Academy of Sciences worked in 2011 in the following composition:

President	<i>Richard Villems</i>
Vice-President	<i>Mart Ustav</i>
Vice-President	<i>Jüri Engelbrecht</i>
Secretary General	<i>Leo Mõtus</i>
Head, Division of Astronomy and Physics	<i>Jaak Aaviksoo</i>
Head, Division of Informatics and Engineering	<i>Tarmo Soomere</i>
Head, Division of Biology, Geology and Chemistry	<i>Ilmar Koppel</i>
Head, Division of Humanities and Social Sciences	<i>Urmas Varblane</i>
Non-Executive Members	<i>Ene Ergma</i>
	<i>Ain-Elmar Kaasik</i>
	<i>Mati Karelson</i>
	<i>Endel Lippmaa</i>
	<i>Enn Mellikov</i>
	<i>Peeter Saari</i>
	<i>Peeter Tulviste</i>
	<i>Enn Tõugu</i>

The Board held 8 working meetings in that year. Once, the decision was passed under the procedure of electronic poll.

The Academy's calendar schedule of events for 2011, which was discussed and approved at the beginning of the year, taking into account the suggestions of the Divisions, was essentially fulfilled by the end of year.

A panel was set up for preparing the Development Plan of the Academy (2011-2015), including President, Vice-Presidents, Secretary General and Heads of Divisions. At the session in September, the Board discussed essential issues and suggestions of members of the Board, to be kept in mind when drawing the new development plan.

Science policy issues were discussed on several occasions during the year. The Board decided to approve the ALLEA Strategic Plan 2010-2015 and Implementation Plan and the ALLEA Amended Statute. It was decided that the Estonian Academy of Sciences would withdraw from the European Science Foundation. The Board coordinated draft amendments to Government of the Republic of Estonia Regulation "Approval of the Statute on the National Science Prizes". The Board heard the explanation of President Richard Villems on reasons for declining to coordinate the regulation "Conditions of the programme "Study and work environment of higher educational establishments and R&D institutions"" issued by the Minister of Education and Research. The Board also discussed draft regulations issued by Minister of

Education and Research of “Procedure for formation of the assessment council to the Estonian Research Agency and its operating procedure” and “Conditions and procedure of application for institutional research support, its assignment and changing its volume”, but decided to suspend their discussion and coordination.

In view of amendment of the Academy Act on opening additional vacancies, it was decided to present to the General Assembly the proposal to open 6 vacancies in 2011 by reference to amendment of law and 1 vacancy on account of the place gone unfilled in 2010. On several occasions the Board discussed issues related to filling the vacancies. Because the law allows involvement in membership of the Academy also the creative persons, it was decided to open 2 vacancies in the area of fine arts. In June, the Board approved, according to proposals of the Divisions the titles of vacancies and in October it registered 15 candidates to 7 announced vacancies for election at session of the General Assembly to be held on 7 December.

In spring the Board decided to announce the Student Research Paper Contest and approved the composition of the Appraisal Panel (Chair Georg Liidja). On 8 November the Board heard information about the results of the contest, presented by Georg Liidja, Chair of the Panel. The session was followed by a conference with 4 papers presented by the winners and the granting of diplomas (see p. 52-53).

In December the Board heard and approved the third-year work reports of all three Research Professors – Tiina Nõges, Pärt Peterson and Martti Raidal. The Board decided to prolong the agreements of all three Research Professors upon their consent for one more year.

Discussions and decision-making in issues related to current commitments constituted a considerable part of the Board’s work. In April the Board considered and submitted for approval to the General Assembly the execution of the consolidated 2010 Budget of the Academy and the Budget for 2011. The Board discussed the new principles for calculation of fee to Members of Academy. It approved the composition of Academic Council of the Under and Tuglas Literature Centre (Chairman Jaan Undusk) and the size of remuneration of the director. The Board discussed the agreement between the Under and Tuglas Literature Centre and the Institute of the Estonian Language on use of their premises located at Roosikrantsi 6. It approved the nomination of Professor of the University of Tartu Ülo Mander for the K.E.v.Baer Memorial Medal. The Board heard information concerning the use of investment earnings of the Estonian Academy of Sciences subsidiary foundation of the Estonian National Culture Foundation provided by Vice-President Mart Ustav. For directing and coordinating the target-based developments in the area of medical science and health the Board decided to set up at the Academy the Standing Committee on Medical Science and Health

Strategy, approved the composition of the Committee (Chairman Eero Vasar) and heard a review on the objectives and tasks of the Committee. The Board approved the candidacy of Dr. Arvi Hamburg for the office of Chairman of the Energy Council and appointed Member of Academy Enn Lust to the Council. The Board discussed and approved the Statute of the Energy Council. It presented to the composition of State Commission of Popularising the Estonian Science as representative of the Academy Member of Academy Enn Tõugu. It nominated Member of Academy Valter Lang as representative of the Academy to the Steering Committee of the National R&D Programme "Supporting of terminology in Estonian (2008-2012)". By reference to the University of Tartu Act, it nominated as member of council of the University the Professor of Helsinki University Kari Olavi Raivio. The Board had on its agenda, several times the development and modernising of the activity of the Academy Publishers. The Board deemed it necessary to draw attention of the Minister of Education and Research to the fact that supply of the Estonian scientific public with an on-line access to international journals had not been realised to the full extent. It heard the information of Secretary General Leo Mõtus about renovation works on roof of the Academy House (Kohtu 6). It discussed carrying out voting by ballot at the Academy Divisions and considered it necessary to present that issue for deciding at General Assembly of the Academy. It approved agendas of sessions of the General Assembly.

In 2011 the Board considered four applications of association with the Academy and consented to make association agreements with the Estonian Society of Chemistry, the Estonian Human Genetics Union, and the Estonian Society for the Study of Religions and the Estonian Society of Economics.



## **DIVISIONS\***

### **DIVISION OF ASTRONOMY AND PHYSICS**

In 2011, two meetings were held by the Division – on May 15 and on December 2.

### **DIVISION OF INFORMATICS AND ENGINEERING**

In 2011, two meetings were held by the Division.

June 3 – issues concerning membership fees of international organisations payable through the Academy were discussed, as well as initiating an election of new foreign members, opportunities of cooperation with Tallinn University of Technology, and as the pivotal topic – opening of new vacancies. The meeting was preceded by an electronic discussion on the topic of new vacancies. Participation in IFAC, IUTAM and in the Marine Board of the European Science Foundation was found a matter of priority for ITTO. For the Academy as a whole, of essential priority are ALLEA, UAI, ICSU and EASAC. The assembly of the Division decided to refer to the Board with a proposal to initiate the election of foreign members, in view of availability of good candidates (Prof. E.Gdoutos, Prof. S.Bishop, Prof. J.Vilemas). It also considered necessary to enhance dialogue and cooperation with Tallinn University of Technology. The topic of announcing new vacancies brought about a lively exchange of opinions. An acknowledgement was reached that extra workforce was in the first place needed in engineering sciences and branches of science related to mechanics. The idea of electing outstanding engineers to the Academy, as prominent figures in the creative community, was deemed interesting, yet insufficiently prepared to be put in practice. The assembly emphasised the need for bolstering the potential of computer science (incl. bioinformatics), as well as environmental engineering and technology. By contrasting the potential of possible candidates with the needs of the Academy and Estonia, as well as referring to the specification of the area of responsibility of the Division ('inseneeria' – realm of engineering), a decision was reached to submit a proposal to the Board of the Academy for creating a vacancy in materials engineering.

December 2 – talks with candidates for the vacancies in materials engineering and chemistry. The meeting heard presentations by Jaan Aarik, Jakob Kübarsepp, Ivo Leito and Margus Lopp. The unanimous preference of those attending tended to support Jakob Kübarsepp vying for the materials engineering vacancy. The preference relied on a combination of competence

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\* Composed according to materials submitted by Heads of Divisions Tarmo Soomere, Ilmar Koppel and Urmas Varblane.

and experience he had shown in several areas, incl. his rare experience in preparation of the following generation of researchers in all stages. With regard to Margus Lopp, they unanimously resolved to take into account his activity in converting research achievements into technologies and industrial solutions, as well as his expertise in oil shale chemistry research and applications, which is of great importance to Estonia. Head of Division was authorised to present at the General Assembly the preference of the Division with regard to vacancies in materials engineering (J.Kübarsepp) and chemistry (M.Lopp).

Members of the Division delivered two academic papers in the Academy Hall: Tarmo Uustalu “From certified software to certified science” and Enn Tõugu “Mutiny of computers – how smart a computer was can we still keep in intellectual bondage?”

Two publications, a collection of foresights titled “Research in Estonia” (Editor-in-Chief J.Engelbrecht) and a collection of popular science articles “Scientific Thought in Estonia (VII). Sea. Lakes. Coast” (Editors-in-Chief T.Soomere and T.Nõges) were compiled mainly upon the initiative of ITTO. Presentation of the books took place in the Academy Hall on 20 December 2011.

Members of the Division organised several events of the Academy. A science-policy top event on marine science of the European region, Plenary Session of the Marine Board of the European Science Foundation, was held on the Academy premises on May 10-11 (chief local organiser T.Soomere). It was seconded by a session of the Marine Board Communication Panel. A visit to the Narva Power Plants, focusing on new solutions in the area of shale oil production and refining, was jointly organised with other Divisions. By advice and effort the Division participated in organising a number of major scientific events, e.g. 16th Winter School of Computer Science EWSCS 2011 (Palmse, February 27- March 4, head of the programme and organising panel T.Uustalu), 3rd International Conference on Cyber Conflicts (Tallinn, June 7-10, programme committee chairman E.Tõugu), Summer School “Contribution of G.Tammann to formation of modern technology“ by the joint Graduate School “Functional Materials and Technologies” (GSFMT) of the University of Tartu and Tallinn University of Technology (Pühajärve, June 20-22, organiser E.Lust), Summer School “Dependable Systems” of FP7 international project CREDES (Tallinn, June 2-3, organiser R.Ubar), seminar “Gustav Tammann 150“ (Tartu, December 28, organiser E.Lust). 11th Summer School on Stresses in Glass, the only one of its kind in the world, was held on the premises of the Institute of Cybernetics on June 9-10 (organisers Institute of Cybernetics at TUT and GlasStress Ltd., chief organiser H.Aben).

Members of the Division were also among organisers of several events held abroad: 8th Annual Security Summit (San Diego, March 22-24, member of

international panel E.Tõugu); IEEE Latin American Test Workshop (Porto de Galinhas, March 27-30, coordinator of Central and East European Region R.Ubar); International Workshop “The Smart Use of Marine Currents for Environmental Management” in the programme of BONUS BalticWay Annual Meeting (Palermo, April 11-12, chief organiser T.Soomere); IEEE Symposium on Design and Diagnostics of Electronic Circuits and Systems, (Cottbus, April 13-15, member of organising committee R.Ubar); International Scientific Conference on Fuel Mineral Matter, Fouling and Cleaning Boiler Heating Surfaces (Tšeljabinsk, June 7-9, member of organising committee A.Ots); Sheffield Glass Stress Summer School (Chapelton, Sheffield, Great Britain, June 28-29, organised by OÜ GlasStress and H.Aben); Baltic Marine Congress (St. Petersburg, August 22-26, member of organising committee T.Soomere); 6th Baltic Heat Transfer Conference (Tampere, August 24-26, member of organising committee A.Ots); 26th European Photovoltaic Solar Energy Conference (PVSEC) and Exhibition (Hamburg, September 7, member of scientific committee E.Mellikov); IEEE East West Design & Test Symposium (Sevastopol, September 9-12, member of organising committee R.Ubar); Summer School “Preventive Methods for Coastal Protection” (Klaipeda, September 19-21, chief organiser T.Soomere).

Members of the Division worked on the Editorial Board of several journals, e.g. Estonian Journal of Engineering (Editor-in-Chief J.Engelbrecht), Applied Mechanics Reviews, Oil Shale, Thermal Science, Power Engineering, Applied Mechanics, Journal of Marine Systems, Oceanologia, Boreal Environment Research, Journal on Integrated Computer Aided Engineering, Akadeemia, etc.

Members of the Division continued their activities in relation to organisation of science, incl. in various organisation and assemblies for administration and funding of R&D activities on Estonian as well as European level (see “Membership” and “International Scientific Relations”).

#### DIVISION OF BIOLOGY, GEOLOGY AND CHEMISTRY

In 2011, three extended meetings of the Board of the Division, three electronic meetings or votes of the Division and three meetings of the assembly of the Division were held.

January 10 – the activity and annual report of the Division for 2010, the working plan for 2011, preparations for the assembly meeting of the Division and other issues were discussed at the extended meeting of the Board.

January 11 – assembly of the Division approved the report for 2010 and the schedule of events for 2011 and gave a reference for association between the Estonian Society of Human Genetics and the Estonian Academy of Sciences (approved 8 March 2011).

During the interval of February 10-15 the assembly of the Division discussed in the form of two e-meetings the proposal of the Estonian Chemical Society for association with the Academy of Sciences and the proposal made by Member of Academy Eero Vasar for setting up the Standing Committee on Medical Science and Health Strategy (ATSAK) at the Academy. The assembly of the Division supported both proposals and they were successively approved by the Board of the Academy at its meeting on March 8. The Board of the Academy at its meeting of April 5 approved the composition of ATSAK (Chairman – E.Vasar; member institutions – University of Tartu, Tallinn University of Technology, UT *Clinicum*, representatives of North Estonian Regional Hospital). The Conference on Estonian Medical Science and Health Strategy was organised by ATSAK and held in the anniversary programme of the UT Faculty of Medicine on October 14.

March 23, April 1 and November 2 – extended meetings of the Board of the Division and the assembly of the Division held on June 3 discussed issues in relation to new vacancies of membership in the Academy. Discussions were attended, either directly or over e-mail, by all members of the Division. The assembly of the Division submitted a proposal to the Board of the Academy for creating three vacancies in the Division: in chemistry, biosystematics and ecology, and medicine.

November 21 – the assembly of the Division heard papers of candidates for vacancies of membership in the Division and presented its opinions and preferences regarding both candidates of the Division and those of other Divisions (optionally). The last issue excited a lively discussion, followed by voting on preference, which in addition to 14 Members who were actually present was attended by absent members of the Division via e-mail, envelope or phone. Preference of the Division at the voting on was given to M.Raidal in the Division of Astronomy and Physics, J.Aarik in the Division of Informatics and Engineering, T.Asser, U.Kõljalg and I.Leito in the Division of Biology, Geology and Chemistry, and K.Pajusalu and A.Pärt in the Division of Humanities and Social Sciences.

December 7 – new Members of the Academy affiliated with the Division were elected by the General Assembly: T.Asser in the area of medical science, U.Kõljalg in the area of biosystematics and ecology and M.Lopp in the area of chemistry.

Public academic papers were delivered by M.Zobel and A.Metspalu. The Conference on Estonian Centres of Excellence in Research was organised by M.Zobel, the conference dedicated to the anniversaries of P.Kogerman and Ü.Lille was organised by M.Lopp and M.Veiderma. Members of the Division participated in the events dedicated to the International Year of Chemistry: ESOR XIII European Symposium on Reaction Capacity of Organic

Substances, Tartu, 11-16 September 2011 (Professor P.Burk), “G.Tamman – 150”, Tartu, 28 December 2011 (E.Lust) and Conference on Materials and Technologies for Green Chemistry, Tallinn University of Technology, 5-9 September 2011.

A collection of popular science articles “Scientific Thought in Estonia (VI). Life sciences and Earth Sciences” appeared in the series of the Academy ‘Blue Books’, edited by E.Parmasto, A.Laisk and D.Kaljo. Members of the Division participated with their articles in the collection of foresights “Research in Estonia. Present and Future” (Editor-in-Chief J.Engelbrecht).

The K.E.v.Baer Memorial Medal in 2011 was on the basis of the Division’s proposal awarded to Professor Ülo Mander of the University of Tartu.

Members of the Division represented the Academy at several decision-making bodies for science administration (see “Membership”). The Committee on Nature Conservation and the Committee on Meteoritics proceeded with their activities under the auspices of the Division.

#### DIVISION OF HUMANITIES AND SOCIAL SCIENCES

Division held five meetings (incl. 1 electronic), discussing the topics in relation to directions of activity of the Division, e.g. matters pertaining to publication of the journal *Trames*, principles of electing into membership of the Academy prominent figures in the creative community, association of the Estonian Economic Association and the Estonian Society for the Study of Religions with the Academy of Sciences, as well as several other topics. With regard to the journal *Trames*, the Division discussed the need to renovate its editorial board, finalising it with recommendation to add to its membership the following Professors of the University of Tartu: Anti Selart in the area of history, Urmas Varblane in the area of economics and Renate Pajusalu in the area of linguistics. The assembly considered that the same line of activity should be continued in 2012 through locating the so-called assistant editors of the same specialties.

In the reporting year Members of the Division continued giving talks to students at schools and delivering lectures at teacher training events. In January-February Urmas Varblane delivered four lectures in the programme of international economy lecture series at Hugo Treffner Gymnasium, whereas in November he gave a lecture to Estonian geography teachers and a lecture to students of Tartu Commercial Gymnasium on the topic “Debt crisis and the future of the Eurozone”.

The Division had an opportunity to assign grants of the Estonian Academy of Sciences sub-foundation within the Estonian National Culture Foundation to young scientists. Due to a tied vote, the young scientist grant amounting to 3 200 euro was split between Jaan Masso, Senior Research Fellow, Institute

of National Economics, Faculty of Economics and Business Administration, UT and Liisi Laineste, Senior Researcher, Estonian Literary Museum.

March 2 – 125th anniversary of the birth of Fr.Tuglas was celebrated by visiting his grave at the Metsakalmistu Cemetery, followed by a seminar at the Under and Tuglas Literature Centre on Väikese Illimari Street and at the House of the Estonian Writers' Union.

May 12 – Science Day organised by the Division in Haapsalu, Lääne County with papers delivered by Urmas Varblane, Eero Vasar and Anto Raukas. Members of Division visited the Haapsalu Neurological Rehabilitation Centre, visited the Kirbla cemetery and placed a remembrance candle on the grave of Jüri Uluots, a former Member of the Academy born in Lääne County.

September 29 – the Language Forum was held at the Academy of Sciences, with a paper “Mother tongue and science” presented by Urmas Varblane.

November 10 – Ceremony of annual science and arts prize of World Cultural Council (WCC) held in the University of Tartu hall, where recognition was bestowed on Member of Academy Urmas Varblane.

November 18 – Conference “Deliberations on archaeology and history. Member of Academy Artur Vassar 100” at the Academy House organised by Valter Lang.

November 24 – Urmas Varblane delivered a paper at the international conference “The Baltic Ways – 20 years on” organised in Tallinn by the Estonian Cooperation Assembly.

December 7 – the Academy General Assembly elected Arvo Pärt Member of the Academy in the area of music and Karl Pajusalu in the area of linguistics.

Members of the Division represented the Academy at several decision-making bodies for science administration (see “Membership”).

## **COUNCILS, COMMITTEES**

### **ENERGY COUNCIL**

Chairman Professor Arvi Hamburg (until 8.03.2011 Member of Academy E.Lippmaa)

In 2011 six meetings were held by the Energy Council: 18 January, 13 April, 19 May, 6 June, 12 October and 15 November.

January 18 – minutes of the previous meeting with corrections were approved and in connection with the wish of E.Lippmaa to withdraw from office of chairman of Energy Council, Doctor Arvi Hamburg, Chairman of the Estonian Association of Engineers and an outstanding expert in energy technology was recommended as new Chairman by the unanimous decision of everybody present.

April 13 – Arvi Hamburg recalled the history of the Energy Council and presented statistics of meetings, topics discussed and decisions taken. Member of Academy Enn Lust was elected Deputy Chairman of the Council. Draft version of the statute and schedule of events for 2011 were discussed. The Council extended thanks to previous chairmen Mihkel Veiderma and Endel Lippmaa.

May 19 – Tõnu Karu (Tallinn City Office, representative of Tallinn in the European Union) and Kerttu Märtin (Tallinn City Planning Board, coordinator) attended the meeting as guests. T.Karu presented a project for testing the optimal energy supply of cities, K.Märtin spoke about the plan of the new City Hall of Tallinn being contemplated, its present state, and possible energy use options. The Council took cognizance of the information presented and recommended to consider the seaside area of North Tallinn for testing the optimal energy supply of cities. A review on energy as a complicated and extremely important branch of economy was delivered by Mati Valdma. He focused on the specificity of electricity production and consumption, the structure of electricity production and development of the energy economy in Estonia. The Council regarded that the specificities of Estonia, the structure of electricity production and the configuration of electricity system must be taken into account when designing the energy strategy.

June 6 – special meeting on the topic of shale oil production in Estonia, Jordan and the USA. Invitation to participate in the meeting had been extended to representatives of Eesti Energia Sandor Liive (Chairman of the Board), Indrek Aarna (Head of R&D Department) and Harri Mikk (Member of the Management Board). A topical report was delivered by I.Aarna – plans of Eesti Energia for shale oil production in Estonia, Jordan and the USA. He

expanded on developmental stages of the Enefit technological conception and presented in greater detail the new Enefit280 oil plant, which is built in Narva. The goal of Eesti Energia for 2016 is to produce at least 1 million ton of refinable shale oil and liquid fuel per year, and to build a shale oil post-processing plant in Estonia with the capacity 20,000 of barrels per day to achieve the purpose. The participants also spoke about the options of Eesti Energia in the international oil shale business. A review was provided on the Jordan oil project and the Utah project plan. The report was complemented with additional information by from S.Liive and H.Mikk. The Council expressed its principled support to the project of Eesti Energia in Estonia, however, it emphasised the need to proceed with research and development works within the framework of other projects, while reckoning with the specific qualities oil shale in different regions.

October 12 – the meeting was attended as guests by Priit Rohumaa (Viru Keemia Grupp (VKG), Chairman of the Board) and Jaanus Purga (VKG, R&D Manager), who presented a report “VKG in Estonian economy”. They gave a short survey of the historical development of VKG, its development directions and priorities. They further explicated the goals set for 2020. When analysing external impacts stalling the development of VKG, the Council considered it had not been provided by the State with access to oil shale resources on conditions equal to other oil shale users. The Energy Council resolved to acknowledge the activities of the VKG company concerning the development of oil industry and improvement of the environmental state, and deemed necessary to prepare a state strategy for excavation and use of oil shale resources and a consumption-based development plan. A respective proposal was forwarded to the Economic Affairs Committee at the Riigikogu (Parliament) and the Minister of the Environment. The Council also deliberated on measures to guarantee sustainable energy economy, focused on determining long-term strategic goals for the energy sector, their inclusion and validity in national development plans. The Council forecasted the impact of the EU energy and climate policy on Estonia. It analysed the execution of the National Development Plan of the Energy Sector until 2020 and the Development Plan of the Estonian Electricity Sector until 2018. As a result of the discussion the Energy Council deemed necessary to draw a long-term energy strategy. The proposal of the Council and confirmation of cooperation-readiness on part of the Council was addressed to the Minister of Economic Affairs and Communications.

November 15 – the meeting was attended by guests Märt Ots (Director General of the Competition Authority), Ando Leppiman (Director of Energy Division at the Ministry of Economic Affairs and Communications) and E.Lippmaa. In his report “Electricity market” M.Ots focused on the following issues: methods of formation of energy price, electricity market in Europe, state regulation (production and sale of electricity), stock market price of



electricity, network service, distribution network, impact of policy on electricity price, extent of competence of the Competition Authority, subsidies, etc. The Council pointed out that the consumer price of electricity in the Estonian regulated market had steadily grown, mainly on account of the network services price and renewable energy subsidising. By transfer to the completely free market on 1 January 2013 the electricity price would rise to the level of Nord Pool prices. The state regulates the fee for monopolistic network services, assigns subsidies and charges. The Council decided to make a proposal to the Ministry of Economic Affairs and Communications to launch an informative campaign for helping electricity customers to manage in the conditions of the open electricity market. In his report “Developments of renewable energy in Estonia” A.Leppiman spoke about the goals of using renewable energy sources in the European Union and in Estonia, the development plan of electricity sector, goals in the renewable energy sector, renewable energy policies, etc. The Council decided to make a proposal to the Minister of Economic Affairs and Communications to restrain the growth of subsidies to renewable energy in the end-consumer price formation and to reconsider the subsidy schemes.

#### COMMITTEE ON MARINE SCIENCES

Chairman Member of Academy Tarmo Soomere

April 29 – Committee on Marine Sciences held a regular meeting. The following items were on the agenda: review of curricula of geosciences and physical oceanography in Tallinn University of Technology (U.Lips), perspectives of inter-university joint curriculum in the area of limnology and oceanography (K.Olli), training in integrated administration and/or management of sea and nautical matters and the plan of the Ministry of the Environment to organise a seminar on eco-system approach in use of sea (S.Vahtra), diploma and master study at the Estonian Maritime Academy (H.Lindpere) and topics of the European Science Foundation plenary sessions (T.Soomere). The discussion produced no particular recommendations or proposals to be addressed to the ESF Marine Board.

Three seminars-conferences, organised by Deputy Chairman of the Committee K.Oll and financially supported by the project PRIMUS, discussed consolidation of the existing competence towards creating a single inter-university marine biology related Master’s curriculum by cooperation between four universities. An agreement was reached to create a new specialisation in marine biology into the MSc geosciences curriculum at Tallinn University of Technology (TUT). Discussions were held on November 22 at the TUT Institute of Marine Systems, on December 6 at the Estonian Marine Institute, University of Tartu (UT), and on December 28 at the Võrtsjärve Limnology Station, Estonian University of Life Sciences, and resulted in preparing a draft specialised curriculum module.

Chairman of the Committee T.Soomere participated in two plenary sessions of the ESF Marine Board in Tallinn on May 10-11, in Madrid on October 13-14 and in a joint session of the Environment Panel and Energy Panel of the European Academies' Science Advisory Council (EASAC) in Brussels on November 11. Of note in the Estonian marine science policy was the regular Marine Board Plenary Session in Tallinn. The chief local organiser of the event was T.Soomere. Tallinn was visited by around 50 European leading marine scientists and administrators of science.

T.Soomere presented as an invited guest a paper containing materials based on the work of the Committee "The Nord Stream as a challenge and mirror for the Baltic Sea marine science" at a conference organised by the European Conservatives and Reformists' Group "Building of the Nord Stream Pipeline – Consequences and Potential Hazards of the Project" (Szczecin, Poland 22 February 2011). At the conference on renewable energy "Climate, Renewable Energy and Sustainable Development" (Brussels, European Parliament, 21 June 2011) organised by the same group T.Soomere presented, on the basis of materials of the ESF Marine Board a paper titled "Marine science in research for alternative energy sources". T.Soomere presented a shortened version of the same paper as a so-called walk-in paper at the 8th Baltic Marine Science Congress (22-26 August 2011) in St. Petersburg 24 August 2011.

In the reporting year the Committee completed compilation of the collection "Scientific Thought in Estonia (VII). Sea. Lakes. Coast". Editor-in-Chief T.Soomere and Editor T.Nõges selected 15 contributions for publication. Seven of them discuss marine sciences, seven consider the issues of limnology and one article is dedicated to various aspects of coastal science. The collection was presented on December 20, whereas T.Soomere and T.Nõges presented it in the programme "Falling Apple" of Radio Kuku on December 18.

Presenting to the wider public, responsible authorities and high-level decision making bodies the results of the scientific analysis conducted during the appraisal process of the environmental impact of Nord Stream and thereby demonstrating the possibilities of modern marine sciences were recognised with a special prize by the BONUS consortium of organisations funding the Baltic marine science. The work performed by T.Soomere under the research project Baltic Way, largely accomplished within the activities of the Committee on Marine Sciences was thus formally recognised.

Since the summer of 2008 T.Soomere has belonged as an observer to a marine committee formed at the Ministry of the Environment (under the formal name: Inter Ministerial Committee for Coordinating the Issues of Maritime Activity, Marine Protection and Pollution Control, established by Government of the Republic of Estonia Order No. 784 of 12 December 2005). All members of the Committee are invited by the Marine Environment Division at the Ministry of the Environment to participate in consulting preparation of the concept for the Marine Environment Use and Protection Act.

## COMMITTEE ON NATURE CONSERVATION

Chairman of the Board Professor Urmas Tartes

April 19 – joint meeting of the Committee with the Naturalists' Society was held to hand over to Members of the Academy Hans-Voldemar Trass and Erast Parmasto the Gold Badge for nature conservation which is granted in combination with the Eerik Kumari Award. On that occasion, a review exposition introducing the nature conservation activities of H.-V.Trass and E. Parmasto was on display at the Naturalists' Society.

May 25 – 49th seminar of the Committee dedicated to the topic “Beautiful nature of Estonia” was held at the visiting centre of the UT Botanical Gardens. Eight papers were delivered and a short discussion followed. An exposition of printed matter released in the initial years of the Committee was on display at the same place.

In September-October a hugely popular handwriting exhibition was conducted at the Baer House. Visitors were given an opportunity to look at and read scores of handwriting samples of naturalists, who had worked as faculty members, personnel of the institutes, Rectors, journalists, writers and many others over a period of several centuries. Handwritten letters (messages) were exhibited in combination with photos of the authors.

In December, the Baer House hosted a Christmas exposition of wonderful Christmas, New Year and other Red Letter Day and anniversary cards executed in monotype by Guara Muuga. G.Muuga (born in 1925) is the most adept and sought after botanical illustrator in Estonia (Estonian flora, plant identifiers, etc.) and a creator of ex-libris. Part of the exhibition hall space was allocated to paintings by a renowned entomologist, traveller, nature conservation activist, writer and artist Vambola Maavara (1928-1999).

Laureate of the Eerik Kumari Award 2011 is Jaan Riis, a geographer and organiser of the extremely popular Nature Omnibus tours. The award was handed over at the Open Air Museum on May 9. The Committee on Nature Conservation presented to the laureate the traditional bibliography and photo portrait of Kumari. An exposition dedicated to J.Riis was at the same time arranged in the building of the Estonian University of Life Sciences in Riia Street, Tartu.

## COMMITTEE ON METEORITICS

Chairman Jüri Plado, PhD

The main objects explored in 2011 included:

- Osmussaar's sediment-vein (incl. chromite grains with shock properties of veins and the enclosing rock) analysis – Kalle Kirsimäe and team; detailed micro-paleontological and shock trace (PDF) analyses – Leho Ainsaar with team;

- Neugrund shock crater – naval geo-physical (seismic) surveys – Kalle Suuroja with team;
- Ries (Germany) crater rock – mineralogical-geochemical research – Kalle Kirsimäe with team.

In 2011, a doctoral thesis on meteoritics was defended at the University of Tartu (UT) under supervision of Kalle Kirsimäe and a bachelor work was defended under supervision of Juho Kirs. Tiiu Elbra defended her doctoral thesis “Physical properties of deep drill cores – implications for meteorite impact effects and crustal structures” at the University of Helsinki.

January 27 – Riho Mõtlep, researcher of the UT Department of Geology delivered a paper “Meteorite craters here and elsewhere” at the Night for Nature held at the Otepää Nature Park Information Centre.

May 14 – in the programme of the European Night of Museums Jüri Plado delivered a paper titled “Meteorites and meteorite craters” at the UT Natural History Museum, while Tõnu Pani presented meteorites deposited in the collections of the museum. Evelin Verš gave an overview of meteorites at the Särghaua field-station of the TUT Institute of Geology. The film “Meteorite craters in Estonia” and a short film about field work activities of students on the Ilumetsa meteorite craters were presented.

May 15 – Reet Tiirmaa delivered a paper in the programme of a bicycle trip of the Greens in Kaali titled “How many craters will you find in Kaali?”

August 31-September 1 – study excursion of UT Master’s Students in geology under supervision of Kalle Kirsimäe and Juho Kirs to the Ries and Steinheim impact craters in Germany, with a visit to the Rieskrater Museum in Nördlingen.

The Committee continued active participation in the research training courses under the Network on Impact Research (NIR) project funded by NordForsk. On September 18-24 a seminar was organised in the framework of the Nördlingen Ries Crater programme, with Estonia represented by Jüri Plado and UT PhD Students Nele Muttik, Ulla Preeden, Kairi-Linda Põldsaar, Sirle Liivamägi and Mikk Gaškov.

December 8 – Professor Henning Dypvik, University of Oslo delivered a lecture titled “Impact craters in Norway: Gardnos (mid-Norway), Ritland (SW Norway), Mjølnir (Barents Sea)” at the UT Department of Geology.

In summer R.Tiirmaa offered guided tours to visitors of the Kaali Meteorite Crater Field, presenting the local craters and providing information about the fall of meteorites in general. Citizens and officials were advised in various issues related to meteoritics all through the year.

STANDING COMMITTEE  
ON MEDICAL SCIENCE AND HEALTH STRATEGY  
Chairman Member of Academy Eero Vasar

The Standing Committee on Medical Science and Health Strategy (ATSAK) was set up by the Estonian Academy of Sciences in 2011 in the following composition: Eero Vasar (Chairman), Priit Kaasik, Margus Lember, Andres Metspalu, Sergei Nazarenko, Urmas Siigur, Joel Starkopf, Erkki Truve, Raivo Uibo, Mart Ustav, Toomas Veidebaum, Andres Võrk.

The highlight event of ATSAK was the Estonian Medical Science and Health Strategy Conference held on October 14 in the programme of the UT Faculty of Medicine Days. The main goal of that meeting with papers organised by the Committee was providing a more accurate review of current research and development activities conducted by important Estonian institutions operating in the area of medicine, as well as about possible plans of those institutions spearheaded to the future.

The following papers were delivered at the meeting:

- Richard Villems (Estonian Academy of Sciences), Opening Address
- Erkki Truve (TUT), Development of health sciences at Tallinn University of Technology
- Toomas Veidebaum (National Institute for Health Development), Place, opportunities and perspectives of the National Institute for Health Development in the context of Estonian health sciences
- Ralf Allikvee (East Tallinn Central Hospital), East Tallinn Central Hospital – its place in Estonian health sciences and health development for the foreseeable future
- Urmas Siigur (UT *Clinicum*), University Hospital: possibility of compromise between medical treatment and research
- Joel Starkopf (UT Faculty of Medicine), Academic and clinical basis of surgical education – Tartu University Hospital and partner hospitals
- Erkki Leego (Estonian Genome Project), Information technology and the future of medicine

Several important questions were raised during the meeting, which could be central points of activity for the Committee in 2012:

- More efficient cooperation between medical centres in Tartu and Tallinn with a view to enhancing the quality of health care provided, facilitating the training of future physicians, dentists and pharmacists and enhancing the international competitiveness of medicine-related research conducted in Estonia
- Estonia's cooperation with steering structures of the European Union until 2020 – proposals for increasing its efficiency

- Biomedicine-related cooperation with leading research centres in Finland
- Men's health related problems in Estonia
- Rehabilitation treatment and physiotherapy-related issues in Estonia

A resolution has been taken to increase the competence of ATSAK by including two more members into the composition of the Committee, namely, the newly elected Member of the Academy Toomas Asser and Head of the East Tallinn Central Hospital Ralf Allikvee.

## ACADEMY EVENTS

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### CONFERENCES

March 2 – festive seminar DREAMS OF REALITY. FRIEDEBERT TUGLAS 125, KARL RUMOR-AST 125 was held in the House of the Estonian Writers' Union as part of the programme of events celebrating the 125th anniversary of the birth of Friedebert Tuglas in 2011. Papers were presented by Toomas Haug, Janika Kronberg, Peeter Olesk, Tiit Pruuli and Jaan Undusk. On the same day, Members of Academy had an opportunity to look at the exhibits in the Museum Department of the Under and Tuglas Literature Centre and listen to the paper presented by Eha Rand, Head of Department.

October 4 – Academy House was the venue for a joint information day of the Estonian Academy of Sciences, the Ministry of Education and Research and the Archimedes Foundation ESTONIAN CENTRES OF EXCELLENCE IN SCIENCE, dedicated to Estonian Centres of Excellence in Science and for the first time providing an integral overview of their currently reached objectives and attainments. Papers were delivered by Mariann Saaliste, Head of Bureau of R&D Economic Environment Development (Archimedes Foundation) and representatives of the Estonian Centres of Excellence: Martin Zobel, Mairo Remm, Allen Kaasik, Tarmo Uustalu, Tanel Tenson, Valter Lang, Mart Min, Martti Raidal, Ülo Niinemets, Jüri Engelbrecht, Vladimir Hižnjakov and Enn Lust. The Conference was concluded by a discussion, where participants reached a decision to issue a brochure introducing the Centres of Excellence.

October 14 – A.Linkberg Lecture Hall at the *Biomedicum* building in Tartu hosted the ESTONIAN MEDICAL SCIENCE AND HEALTH STRATEGY CONFERENCE organised by the Standing Committee on Medical Science and Health Strategy at the Estonian Academy of Sciences in the anniversary programme of the Faculty of Medicine at the University of Tartu (UT). The opening address was given by President of the Academy Richard Villems. The following papers were delivered: “Development of health sciences at Tallinn University of Technology” by Erkki Truve, Vice-Rector for Research, Tallinn University of Technology; “Place, opportunities and perspectives of the National Institute for Health Development in the context of Estonian health science” by Toomas Veidebaum, Research Director, National Institute for Health Development; “The role of East Tallinn Central Hospital in Estonian health sciences and in health development for the foreseeable future” by Ralf Allikvee, Chairman of the Board, East Tallinn Central Hospital; “University hospital: possibility of compromise between medical treatment and research” by Urmas Siigur, Chairman of the Board, Clinicum, UT; “Academic and

clinical basis of surgical education – Tartu University Hospital and partner hospitals” by Joel Starkopf, Dean, Faculty of Medicine, UT; “Information technology and the future of medicine” by Erkki Leego, IT Consultant, Estonian Genome Project.

November 8 – Academy House was the venue for the ACADEMIC CONFERENCE OF THE STUDENT RESEARCH PAPER CONTEST WINNERS and subsequent award ceremony. The Academy has established monetary awards to acknowledge outstanding research results of talented students and in the same way to stimulate their independent research work in the future. The Conference was traditionally opened by President of the Academy Richard Villems and moderated by Member of Academy Georg Liidja.

The following prize winning papers were delivered:

*R.Nurk*, Tallinn University. Earthen Fortifications on the southern side of Toompea in Tallinn within the context of European military architecture

*V.Alari*, Tallinn University of Technology. Depth induced breaking of wind generated surface gravity waves in Estonian coastal waters

*M.Vainu*, Tallinn University. The effects of disturbances on water-balance of a lake – based on three closed-basin lakes in the Kurtna Lake system

*O.Nahkur*, University of Tartu. Provisional conflict index for interpersonal relationships

November 18 – Academy House was the venue of a conference dedicated to the 100th anniversary of Member of Academy Artur Vassar DELIBERATIONS ON ARCHAEOLOGY AND HISTORY. Papers were delivered by: Valter Lang “Artur Vassar and directions of Estonian archaeology in mid-20th century”, Enn Tarvel “Artur Vassar, Estonian scholar in humanities of the 20th century.”, Tiit Rosenberg “Artur Vassar as researcher of history of the 19th century”, Tõnu-Andrus Tannberg “Labour pains of the Soviet historical literature: Artur Vassar, “Concise Estonian History” and failure to publish the book”, Anti Selart “Estonian history and suppression of Normannism in the 1940-1950ies” and Priit Raudkivi “Manifested and latent factors in the history of Old Livonia”.



## SEMINARS

October 14 – Academy House was the venue for a seminar ORGANIC-BIOORGANIC SYNTHESIS dedicated to the 120<sup>th</sup> anniversary of Member of Academy Paul Kogerman and the 80<sup>th</sup> birthday of Member of Academy Ülo Lille, jointly organised by the Estonian Academy of Sciences and Tallinn University of Technology. Papers were delivered by Member of Academy Mihkel Veiderma “Paul Kogerman’s mission”, Professors of Tallinn University of Technology Margus Lopp “Paul Kogerman and Ülo Lille: organic coupling reactions”, Tõnis Kanger “From bicycloheptan to asabicycloheptan” and Nigulas Samel “Fatty acid dioxygenases from lower organisms” and Member of Academy Ülo Lille “Things done and those underway”.

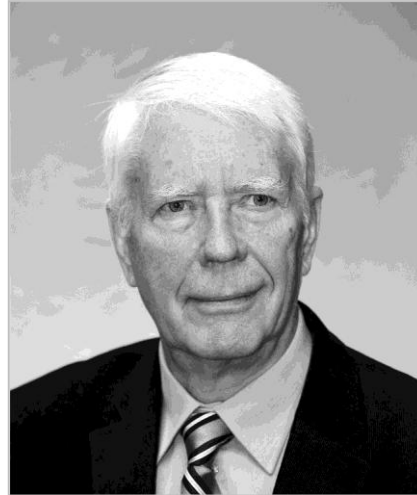
December 28 – *Chemicum* building in Tartu was the venue for a seminar GUSTAV TAMMANN 150 dedicated to the International Year of Chemistry organised by the Institute of Chemistry at UT and the Estonian Academy of Sciences. The following papers were delivered: “Rise of the physical chemistry research direction at the University of Tartu in the 1890s” by Vello Past, Professor Emeritus, UT; “Gustav Tammann – pioneer of high pressure physic in Estonia” by Arlentin Laisaar, Senior Researcher; “Research of intra-protein hydrogen bonds with the help of high pressure spectroscopy” by Arvi Freiberg, Member of Academy; “Tammann and present day physical chemistry and technology” by Enn Lust, Member of Academy.

## PUBLIC ACADEMIC LECTURES

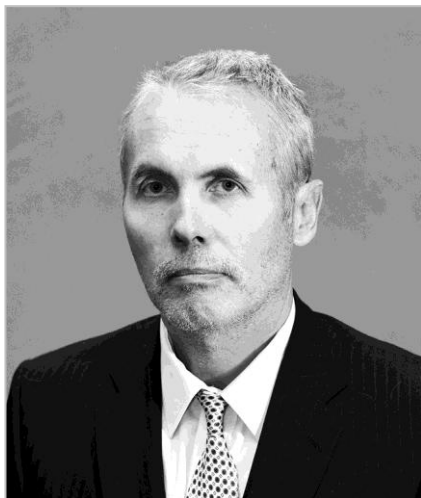
In 2011, the following public academic lectures were delivered:



April 6  
*Tarmo Uustalu*  
“From certified software  
to certified science”



May 25  
*Enn Tõugu*  
“Mutiny of computers – how smart a  
computer can we still keep in intellec-  
tual bondage?”



September 21  
*Martin Zobel*  
“The role of fungi in the  
formation of a *phytocoenosis*”



November 9  
*Andres Metspalu*  
“Genetics in relation to  
the Gene Bank project”

## MEETINGS, DISCUSSIONS

January 25 – House of the Estonian Academy of Sciences was the venue for a joint discussion between Board Members of the Academy and representatives of political party factions in the Riigikogu, aimed at comparative analysis of research, development and entrepreneurship policy of election programmes of parties in 2011. The discussion was attended by Board Members of the Academy Jüri Engelbrecht, Ene Ergma, Ain-Elmar Kaasik, Mati Karelson, Ilmar Koppel, Endel Lippmaa, Enn Mellikov, Leo Mõtus, Peeter Saari, Tarmo Soomere, Peeter Tulviste, Enn Tõugu, Urmas Varblane, Richard Villems and representatives of factions of parties represented in the Riigikogu Mart Jüssi (Estonian Greens), Kalev Kukk (Estonian Reform Party), Mart Laar (Union of *Pro Patria* and *Res Publica*), Mart Meri (Social Democratic Party), Jüri Ratas (Estonian Centre Party) and Taavi Rõivas (Estonian Reform Party).

Speeches by representatives of political party factions covered the provisions dedicated to research, development and innovation issues in the election programmes focused on:

- Necessity of dialogue between politicians and scientists
- Development of Estonian research-consuming industry, promoting local undertakings
- Raising the quality of higher education and regulation of proportions of orientation
- Creation of tax policy regulating symbiosis of research and business
- Large opportunities of structural funds of science on the one hand and deficiency of financing human resources on the other hand
- Securing scientific thinking in everyday life, in view of the needs of different groups of population
- Popularising science

The following items were highlighted while discussing the topics relating to science policy and politicians:

- National policy must attribute value to knowledge, and promote the rise of science-consuming production in Estonia
- State must highlight abroad the accomplishments of Estonian scientists, emphasising their high quality and the possibility for creating a science-consuming industry
- Financing of higher education must be in dependence on quality enhancement;
- Change of tax policy is necessary
- Migration legislation does not meet the actual needs
- The use of Structural Funds does not enable to support human resources in research, a disproportion is arising between the existing expensive up-to-date machinery and the scarce number of researchers

At the end of discussion President Richard Villems addressed the representatives of political party factions with an argumentative proposal to set up a committee under the auspices of the new composition of the Riigikogu to handle the problems of research, development, innovation and higher education, and serve as a forum of common discussion for researchers and politicians.

May 12 – traditional (the twelfth) Academy Science Day was held in the Lääne County. The Science Day started at Haapsalu College of Tallinn University. Short speeches were given by Merle Mäesalu, acting Lääne County Governor and Eve Eisenschmidt, Director of the College. President of the Academy Richard Villems spoke about the historical development and tasks of the Estonian Academy of Sciences. He pointed out that visiting the counties of Estonia is a thought-provoking opportunity to Members of the Academy.

The enthused audience was composed of school headmasters, parish governors, teachers and students. Member of Academy Urmas Varblane spoke about the development of global economy and its impact on Estonian entrepreneurship. An intriguing paper on climate change was delivered by Member of Academy Anto Raukas, soliciting the audience to regard the information on climate warming with clear head and scepticism. The paper delivered by Member of Academy Eero Vasar, rich in detail, on neurobiology of anguish and anxiety disorder, although at times outside the grasp of listeners, contained interesting facts to keep in mind.

Members of the Academy also visited the Haapsalu Neurological Rehabilitation Centre, where they were hosted by Priit Eelmäe, Chairman of the Board, Ülle Kruus, acting Treatment Manager, and Kadri Englas, Development and Quality Manager. Members of Academy were keenly interested in the clinical Motion and Gait Analysis Laboratory, which enable to perform anthropological measurements of patients and their clinical appraisal. The results obtained by evaluation of recorded data on 3D walking analysis are of great help when making clinical decisions.

Towards the end of the Science Day programme, Members of the Academy made a short visit to Kirbla and lighted a memorial candle on the grave of Jüri Uluots, Member of the first composition of the Academy, who was born in the Lääne County. The Science Day was attended by Members of Academy Jüri Engelbrecht, Anto Raukas, Enn Saar, Peeter Saari, Arved-Ervin Sapar, Peeter Tulviste, Enn Tõugu, Urmas Varblane, Eero Vasar, Mihkel Veiderma, Richard Villems and Haldur Õim.

October 27 – Members of Academy visited the Oil Industry of Eesti Energia LTD. They examined the new technological solutions in the domain of shale

oil production and refining. A general outline of the Oil Industry was offered by Enefit Head of R&D Department Indrek Aarna, and Director and Chairman of the Management Board of Oil Industry Igor Kond. Information in greater detail was given on the topic of bio-fuels by Tõnu Aas, Chairman of the Management Board of Narva Power Plants. Members of the Academy made an introductory tour of the premises and observed the operating oil factory and the construction of the new generation Enefit-280 shale oil plant. A number of questions posed by the visitors ignited a lively discussion.

The event was attended by Members of Academy Richard Villems, Leo Mõtus, Ain-Elmar Kaasik, Arvi Freiberg, Dimitri Kaljo, Enn Mellikov, Ilmar Koppel, Mihkel Veiderma and members of the Energy Council of the Academy, Professors Leevi Mölder and Andres Siirde.

# **POPULARISATION OF SCIENCE**

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## **SCIENCE PROGRAMME “THE FALLING APPLE”**

“The Falling Apple” (first transmitted in 2008 upon initiative of the radio KUKU and the Estonian Academy of Sciences) has been broadcast as a weekly science programme by radio KUKU, from 2010 onward in close collaboration with the Estonian Academy of Sciences, the University of Tartu and Tallinn University of Technology, presenting and popularizing science and scientists. During the time it has been on the air, the programme has won renown and acknowledgment among the regular audience and scientific community alike. The editor and promoter of the programme is Margus Maidla.

The subject fields of the programme can be divided into the following larger thematic blocks:

- Science policy and organisation of science;
- Presentations of Estonian research institutions and scientists;
- Laureates of National Science Prizes;
- Participation in the EU Framework Programmes and other international programmes – projects, people, and outcome;
- Centres of excellence in research;
- Development centres of technology and other researches of applied orientation;
- Successful Estonian researchers active at foreign scientific institutions;

### SCIENCE POLICY AND ORGANISATION OF SCIENCE

Interviews were held with Minister of Education and Research Jaak Aaviksoo, President of the Estonian Academy of Sciences Richard Villems, Member of Academy Tarmo Soomere, Research Professor Tiina Nõges; Rector of the University of Tartu Alar Karis, Vice-Rector for Research Kristjan Haller, Director of Institute of Technology, Head of Entrepreneurial Relations and Innovation Division Erik Puura; Rector of Tallinn University of Technology Andres Keevallik, Vice-Rector for Research Erkki Truve; Chairman of Development Fund Ott Pärna and Head of Company Banking of Swedbank Robert Kitt;

### PRESENTATIONS OF ESTONIAN RESEARCH INSTITUTIONS AND SCIENTISTS

The Estonian Academy of Sciences was represented on the programme by Members of Academy Andres Metspalu, Enn Saar, Margus Lopp, Enn Lust, Rein Küttner, Eve Oja, Tarmo Uustalu, Enn Tõugu, Ülo Lepik, Mart Kalm, Martin Zobel, Jüri Allik, Valter Lang, Eero Vasar, Leo Mõtus, and Raimund-Johannes Ubar.

The University of Tartu: Professor of Surgery Department Andres Salumets, Professor of Bioorganic Chemistry Ago Rinke; Director for Research of Estonian Biocentre Mait Metspalu and researcher Riin Tamm; Director for Research of Museum of the University of Tartu Lea Lepik; senior researchers, spirit philosopher Bruno Mölder; Professor of Department of Philosophy of Science Rein Vihalemm and Docent of the same Department Endla Lõhkivi; Head of Ethics Centre Margit Sutrop and Chairman of Council of the Ethics Centre Toivo Maimets.

Tallinn University of Technology: Director of Institute of Chemistry Mihkel Kaljurand; Head of Department of Biology of Integrated Systems Madis Metsis; Director of Machine Building Institute Lembit Roosimölder; senior researcher of the Institute Jüri Riives and Head of Programmes Jaak Lavin; Head of Department of Building Economy and Management Roode Liias and Head of Department of Building Physics and Architecture Targo Kalamees; leading researcher of Institute of Chemistry Mihkel Koel; Professor of Bioinformatics Jaak Vilo; leading researcher of Institute of Electronics Mart Min and Head of Institute Oliver Väärtnõu.

Estonian University of Life Sciences: Professor of Institute of Veterinary Medicine and Cattle Breeding Ülle Jaakma; historian of science Ken Kalling.

Tartu Observatory: senior researcher Tõnu Viik.

#### PRESENTATION OF LAUREATES OF NATIONAL SCIENCE PRIZES

Attending the studio were Member of Academy Vladimir Hižnjakov; leading researcher of Institute of Electronics of Tallinn University of Technology Mart Min; Professor of Department of Geography of the University of Tartu Tiit Tammaru.

#### PARTICIPATION IN INTERNATIONAL PROGRAMMES

Speaking were: Head of Department of Materials Science of Institute of Physics of the University of Tartu, Professor of Institute of Chemistry Väino Sammelselg; national coordinator of EU FP7 Ülle Must and coordinator of one area Madis Saluveer.

#### RESEARCHES OF APPLIED ORIENTATION

Speaking was the leading researcher of Institute of Electronics of Tallinn University of Technology Mart Min.

#### SUCCESSFUL ESTONIAN SCIENTISTS IN FOREIGN RESEARCH INSTITUTIONS

Speaking on programmes presenting the topic were: Members of Academy Valdur Saks and Mart Saarma.

The total number of broadcasts in 2011 amounted to 52. Broadcast times: originally on the air on Sundays at 15.00-16.00; repetition on Sundays at 21.00-22.00.

The weekly listening ratings of the programme gained an average of 14 000 listeners, Podcast downloading – ca. 2400 downloads per broadcast.

## RESEARCHERS' NIGHT 2011

Estonia participated for the sixth year in the series of the European Researchers' Night activities, aimed at presenting researchers and science related issues to the wider public. In all that time the national events have been coordinated by Science Centre Foundation AHHAA, the Academy has participated as project partner. It is a project-based undertaking co-financed by European Commission, with the objective to arrange fascinating and attractive events in one Friday (day-and-night) of September designed for broad-based attendance: study visits to science centres and museums, performances of science theatre, science cafes, workshops, game activities for younger children, concerts with scientists acting the roles etc.

In that year the events of Researchers' Night were held on September 23. The Academy organised the traditional musical science cafe in its House, moderated by Member of Academy Enn Tõugu. The influence of music and its use in commercial environment was the topic of the talk given by Hendrik Saare, basing on his MA thesis completed in the Academy of Theatre and Music (co-supervisor of the work Member of Academy Jaan Ross). During the tea break, the audience had an opportunity to test the brain patterns with the help of special software. The samples of live music for brain activation were presented by the professional bell and chime player Inna Lai, who was quick to involve the listeners in her activities.

Like in earlier years, the Academy helped compose the plan of activities of Tallinn and it coordinated the events also outside its premises. In that year, the aim was to open to the young and older knowledge-seeking people as many as possible laboratories, where a man in the street has no access at other time. A special bus shuttled people between the Liberty Square and science campus of Mustamäe.

- Laboratory of Ecotoxicology of National Institute of Chemical Physics and Biophysics posed the question whether the nanoparticles are poisonous to laboratory animals. The audience was presented cute tiny guinea pigs; they learned what nanoparticles are and why ever more attention is paid to them.
- Researchers working at physics laboratories of the same Institute (incl. Director of Institute Raivo Stern and leading researcher Tõnis Pehk) presented the high power magnetic fields as a magnifying glass, helping to peek and peer into a substance, and demonstrated how high power magnetic fields are created and used in research.
- Institute of Electronics of Tallinn University of Technology named after T.J. Seebeck tickled the minds of audience with the topics like money, heart and semiconductors. Director of Institute Toomas Rang delivered the introductory paper and presented, together with his colleagues (Professor Mart Min, senior researchers Natalja Sleptsuk and



Raul Land and others) interesting results obtained when designing the semiconductor devices and at development of specific methods of signal processing and implementation of the outcome of research in the area of medical electronics (incl. heart pace makers), and at analysing the quality of eurocoins. Those interested had a chance to measure their individual body impedance and observe the result on the monitor of oscilloscope.

- The visitors were shown in the laboratories of Institute of Gene Technology of Tallinn University of Technology how the gene scientists create nerve cells and plants glowing in darkness and explained why they were needed.
- In Laboratory of Phonetics and Speech Technology of Institute of Cybernetics of Tallinn University of Technology, Head of the Laboratory Einar Meister presented the directions of his work and those of his colleagues and demonstrated how the computers learn to connect in Estonian.
- The team of researchers of Institute of Geology of Tallinn University of Technology presented to the audience a wide topic range from nucleus to stars. Where should the Estonian nuclear power station be positioned? How does the polar research cast light on climate of the past eras and forecast the rise in ocean level? What does the supernova explosion look like? What are the most significant Estonian fossils, rock types and natural resources? Those questions were given an answer, the respondents being Member of Academy Anto Raukas, polar researchers Enn Kaup and Tõnu Martma etc.
- Museum of Tallinn University of Technology kept open for the whole long day, specially for Researchers' Night, the exposition "Metamorphoses – insectsinsectsinsectsinsects!" and invited the entomologist Allan Selin to deliver explanations to visitors and the known researcher of insects Urmas Tartes to present a lecture.

A host of events were held as organised by Tallinn Centre of AHHA in Liberty Square. Besides Tallinn, the events of Researchers' Night were held in Tartu, Valga, Viljandi, Pärnu, Rakvere, Paide, Kohtla-Järve, Saaremaa, Kihnu and Kukruse. A live telecast from AHHA Centre in Tartu was put on air by Estonian TV.

## **ACADEMY MEDALS, AWARDS**

### **MEMORIAL MEDALS OF THE ACADEMY**

The Board of the Estonian Academy of Sciences in 2011 decided to confer the KARL ERNST VON BAER MEMORIAL MEDAL on

Professor *Ülo Mander*, University of Tartu.

The medal was handed over during the annual meeting of the General Assembly.

### **STUDENT RESEARCH PAPER PRIZES**

In 2011 the Estonian Academy of Sciences received 63 research papers for the contest of Student Research Paper Prizes. The papers were examined by the Appraisal Panel of the Academy including Georg Liidja (Chair), Udo Margna, Enn Tõugu, Jaan Undusk and Urmas Varblane as experts.

The Panel decided to grant 12 prizes of 400 euro each to the following papers:

*Jaanika Aavik* (Tallinn University of Technology) Master's Thesis "Determining the properties of ash aqueous suspension for optimisation of conditions for calcium carbonate precipitation";

*Victor Alari* (Tallinn University of Technology) research article "Depth induced breaking of wind generated surface gravity waves in Estonian coastal waters";

*Jürgen Jänes* (University of Amsterdam) Master's Thesis "Efficient integration of multiscale  $N$ -body systems";

*Oliver Nahkur* (University of Tartu) Bachelor's Thesis "Provisional conflict index for interpersonal relationships";

*Ragnar Nurk* (Tallinn University) Master's Thesis "Earthen fortifications on the southern side of Toompea in Tallinn within the context of European military architecture";

*Mare Oja* (University of Tartu) Bachelor's Thesis "Use of molecular descriptors for characterising the structural space of medicines and non-medicinal products, and for specifying disease-based categories of medications";

*Kärt Pormeister* (University of Tartu) research paper "Constraining religious freedom: Switzerland's ban on building minarets";

*Riivo Talviste* (University of Tartu) Master's Thesis "Deploying secure multi-party computation for joint data analysis – a case study";

- Kadriann Tamm* (Tallinn University of Technology) Master's Thesis "Transformations of sulphur compounds during carbonation of oil shale ash aqueous suspension and leaching water";
- Olga Tribštok* (Tallinn University of Technology) Master's Thesis "Comparison of wave conditions in Estonian and Lithuanian coastal waters";
- Marko Vainu* (Tallinn University) Master's Thesis "The effects of disturbances on water-balance of a lake – based on three closed-basin lakes in the Kurtna Lake system";
- Evelin Viilmann* (Tallinn University of Technology) Bachelor's Thesis "Wage dynamics and premiums in the Estonian public sector of the period 2000-2010".

## **ESTONIAN SCIENCE COMMUNICATION AWARD**

The Estonian Science Communication Award is an annual state award that has been granted for science communication activities aimed at Estonian audience since 2006. The competition was held in 2011 for the sixth year in row. Funded by the Ministry of Education and Research, prizes are jointly awarded by the Ministry, Estonian Academy of Sciences and Archimedes Foundation.

The purpose of this award is to highlight popularisation of science, promote activities towards communicating research to the public and give recognition to individual as well as groups of researchers, who have succeeded in rendering research understandable to a wider public along with presenting research, scientific achievements and research efforts of scientists in a generally fascinating form or who have achieved to attract young people to the research realm and researcher's profession.

Candidates were nominated in six categories. The Appraisal Panel of the competition headed by Georg Liidja resolved to confer the awards as follows:

The Lifetime Achievement Award for long-standing conscientious commitment to public communication of science and technology was awarded to

**Tiiu Sild**

Popularising science and technology through audiovisual and electronic media

- Grand Prize: Audiovisual material: 100+ experiments in chemistry, project manager Jaak Arold.

Popularising science and technology through the written word

- Grand Prize: Arko Olesk, Editor-in-Chief of the journal *Tarkade Klubi* (Club of the Wise),
- Motivation Prize: Publication "Tartu Tähetorn. Tartu Old Observatory", compiled by Lea Leppik (University of Tartu History Museum).

Actions/series of actions for communication of science and technology

- Grand Prize: The students' historical research paper competition for the President of the Republic awards organised by the History and Social Studies Teachers Association of Estonia, coordinated by teachers Tiiu Ojala (Võru Kesklinna Gymnasium) and Viivi Rohtla (Lähte Gymnasium),
- Motivation Prize: Formula Student Team Tallinn. NGO *Tudengi Vormel*, project manager Kristjan Maruste,
- Motivation Prize: Activities conducted by the *Teadusmaa* (land of science) project group at Kuressaare Gymnasium, project manager Sirje Kereme.

Best scientist, journalist, teacher popularising science and technology

- Grand Prize: Tarmo Soomere for explaining current issues in marine physics through popular science articles and public speeches,
- Motivation Prize: Andres Juur for his work in popularising physics,
- Motivation Prize: Liina Tamm for organising the annual circle of junior scientists at Konguta.

Best innovative action popularising science and technology

- Grand Prize: Initiative "Elus teadus" (living science) taken by PhD students at the Estonian University of Life Sciences, project manager Kristi Teppo.

The competition's award fund in 2011 amounted to 21,500 euro in total: Lifetime Achievement Award – 6500 euro, Grand Prize – 2500 euro and Motivation Prize – 500 euro.

Results of the competition were announced and prizes were handed over during the 4<sup>th</sup> Science Media Conference, which was held at Tallinn Salme Culture Centre on 11 November, this time under the title "Mida?!" (What?!)

## **PUBLICATIONS OF THE ACADEMY**

Books published by the Academy in 2011:

- “Estonian Academy of Sciences Yearbook XVI (43)” in Estonian and in English
- The fifteenth book in the series “National Science Prizes” (in Estonian), providing an overview of the award-winning researchers in 2011 and their studies
- “Scientific Thought in Estonia (VI). Life and Earth Sciences”  
The collection of articles is intended for readers drawn to a more sophisticated reading matter in the Estonian language, who are seeking information on current trends in life and earth sciences developed in Estonia. The book comprises three sections, the first of which is dealing with phenomena of life, starting at the organismic level and rising to the level of populations, species and communities. Articles in the second section are involved with processes of life at the molecular and higher levels. The third section is dedicated to earth sciences and provides a good representation of geology, with a particular focus on palaeontology and stratigraphy, including isotope geology as well as sedimentology, quaternary and marine geology. Geography and soil science are both represented by one article. Editors-in-chief of the publication are Erast Parmasto, Agu Laisk and Dimitri Kaljo.
- “Scientific Thought in Estonia (VII). Sea. Lakes. Coast”.  
The compilers have set themselves the task to present a series of breakthrough studies conducted by Estonian scientists in the sphere of ‘watery’ and coastal research. Special attention is dedicated to cases where Estonian science is playing the leading role in the world of research. The publication contains 15 articles, which offer a truly expressive cross-sectional view of the range and topical coverage of the research activities carried out by Estonian scientists working in the area of marine, lake and coastal studies, as well as their accomplishments and ambitions. Editors-in-chief of the publication are Tarmo Soomere, and Tiina Nõges, Research Professor of the Academy.
- “Research in Estonia. Present and Future”.  
The compendium introduces the reader to the Estonian research landscape by providing a perceptive survey of a wide range of research topics. A couple of dozen articles enfolded in the publication are focused on cutting edge research in Estonia and its future perspectives. The articles are authored by eminent scientists and scholars of Estonia representing natural, technological and social sciences as well as the huma-

nities. The book is meant for everyone seeking information on science and scholarship in Estonia, let them be researchers or people dealing with science policy and forward looks, irrespective of their country of residence. The publication was supported by funding from the Ministry of Education and Research and its editor-in-chief is Jüri Engelbrecht.

All the above listed publications are additionally available in electronic format ([www.akadeemia.ee](http://www.akadeemia.ee)).

For information about scientific and scholarly journals published by the Estonian Academy Publishers, see pp. 97-100.

## **INTERNATIONAL SCIENTIFIC RELATIONS**

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The Estonian Academy of Sciences represents Estonia in several INTERNATIONAL SCIENTIFIC ORGANISATIONS bringing together science community on issues that cross specialities at the level of high-grade researchers and science policy makers.

The European Federation of National Academies of Sciences and Humanities “ALL European Academies” ([www.allea.org](http://www.allea.org)) was headed in 2006-2011 as President by Vice-President of the Estonian Academy of Sciences Jüri Engelbrecht, likewise representing ALLEA in the governing bodies of the European Academies’ Science Advisory Council (EASAC) and the European Science Foundation (ESF). Member of Academy Raivo Uibo sits on the ALLEA Standing Committee on Science and Ethics.

EASAC ([www.easac.eu](http://www.easac.eu)) is comprised of individual members authorised by the academies, Estonia being represented by Secretary General Leo Mõtus. Chairman of the Committee on Marine Sciences at the Estonian Academy of Sciences Tarmo Soomere is a member of the EASAC Environmental Steering Panel and also facilitates exchange of information and harmonisation of activities between the Environmental Steering Panel and the ESF Marine Board. In 2011, Member of Academy Enn Lust joined the EASAC Energy Steering Panel.

The Academy participated in the European Science Foundation (ESF; [www.esf.org](http://www.esf.org)) together with the Estonian Science Foundation (ETF). The membership fee has been paid through the Academy, while funding of participation in programmes is effectuated through ETF. Representatives of the Academy and ETF, commonly appointed, act both in the Governing Council and Standing Scientific Committees. For instance, Member of Academy Raivo Uibo represents Estonia on the ESF-European Medical Research Councils (EMRC). Member of Academy Enn Mellikov was until autumn 2011 engaged in the Standing Committee for Physical and Engineering Sciences (PESC).

The reorganisation of ESF is presently underway and its activities would presumably be wound up by 2015, the pending developments, however, are clouded with obscurity. Given the situation on hand, the Academy decided to terminate its membership in ESF as of 2011. Further activities of the Marine Board and the European Polar Board, for the time being operating under the umbrella of ESF, have been contemplated independently of the development scenarios to be implemented. The Estonian Academy of Sciences continues as member of the Marine Board where it is represented by Tarmo Soomere.

Thanks to T.Soomere's initiative and organising efforts, the regular plenary session of the ESF Marine Board was held on the premises of the Academy on May 10-11. Tallinn was visited by around 50 European leading marine scientists and science administrators.

*Union Académique Internationale* (UAI; [www.uai-iaa.org](http://www.uai-iaa.org)) unites academies involved in the so-called 'soft' sciences and focuses its activity mainly on the humanities. The Academy is represented by Member of the Board Peeter Tulviste, in whom UAI has vested two regular powers: to act as member of the UAI International Committee and to maintain contacts between UAI and the International Social Science Council (ISSC), incl. attendance at ISSC sessions.

The Academy also takes part in the work of several other world science organisations, e.g. International Council for Science (ICSU; [www.icsu.org](http://www.icsu.org)), InterAcademy Panel on International Issues (IAP; [www.interacademies.net](http://www.interacademies.net)), etc. Vigorous activity of representatives of Estonia in European and global science organisations is necessary for enhancing visibility, creating image and enabling Estonia to have a say on international level in issues pending decision. Furthermore, at respective discussion forums the scientific aspects of problems vital for Estonia can be raised.

The Academy continued supporting contacts of the Estonian scientific community with international scientific unions, giving preference to ICSU member organisations. By means of a targeted allocation from the Ministry of Education and Research, the Academy organised payment of membership fees and supplied the Ministry with review on the activities of respective national committees (see the list in Appendix 1 pp. 184-185). For the second year running, the targeted allocation of the Ministry did not cover the needs for membership fees. Taking to use the balance from previous periods did not suffice, and the Board of the Academy had to make a painful decision on whose membership fees should go unpaid. In 2012 the regular activity can be restored.

Like a number of European Academies, the Estonian Academy of Sciences supports and finances international mobility of researchers through a SCIENTIFIC EXCHANGE PROGRAMME. Bilateral cooperation agreements are formally underlying the exchange of scientists (full list of partners is presented in Appendix 2 p. 186). For the purpose of renewing the cooperation programme, the Academies of Sciences of Estonia and Bulgaria announced a call for joint projects in 2011. Four applications were selected out of those submitted, in the framework of which reciprocal trips would be funded in 2012-2014. A new cooperation agreement was concluded with the British Academy, whereas the cooperation agreement with the Norwegian Academy of Sciences and Letters was terminated upon mutual understanding.



The activity of the scientific exchange programme is supervised by the Council for International Exchanges, comprising representatives of the Divisions of the Academy and four larger public universities – the University of Tartu, Tallinn University of Technology, the Estonian University of Life Sciences and Tallinn University. The Academy acts upon the traditional cost-sharing principle (living expenses in the host country are covered by the receiving party) and gives preference over individual research to reciprocal visits within bilaterally accepted joint projects. As a rule, scientists to be nominated for funding to the receiving Academy are selected by the sending Academy. The Estonian-Finnish exchange of scientists is an exception to the rule with a Finnish scientist having to apply to ‘his/her’ Academy to cover the reception costs of an Estonian colleague (and vice versa).

For the second year running, the exchange of scientists was affected by economic depression and hence the budget of the Academy again earmarked significantly less money for reception of visiting scientists than in 2009. For that reason the Academy could not duly honour its contractual commitments and was compelled to interfere with the selection of visiting scientists to Estonia, making proposals to partner academies to cut the number and duration of visits. With the partners understanding our predicament and meeting us halfway, the Academy in its turn was to keep nomination of Estonian scientists on the level acceptable to partners, ignoring the volumes specified in agreements. Consequently, it is senseless to compare the numerical data of 2011 with those of the earlier years, in order to analyse the trends of development.

General data are as follows. In 2011 Estonian scientists made 77 study and conference visits, using the total of 634 days. 21 976 euro was used to cover the living expenses of visiting scientists. The Academy received 80 visiting scientists to work at Estonian universities and research institutions for the total of 551 days (expense on average 39.88 euro per day). The opportunities of scientists to apply for travelling grants have widely enlarged by now (incl. 7FP, programmes co-financed from structural funds, national mobility subsidies). The Academy is confronted by the crucial issue of what the *raison d'être* of bilateral cooperation agreements on exchange of scientists will be in the future.

Traditionally, representatives of the Academy visited other academies, participated in scientific events, delivered papers as invited speakers at international scientific forums and they likewise met with delegations visiting the Academy, etc. In more detail see Chronicle (pp. 7-14).

The Academy traditionally supports direct contacts of Estonian young scientists with ‘top makers’ in the world of science. The Academy dispatched Researcher of the UT Faculty of Medicine Mart Kull, PhD Student in Genetic Engineering Tõnu Esko and Senior Researcher of the Estonian Biocentre

Gyaneshwer Chaubey to attend the interdisciplinary Lindau Meeting of Nobel Laureates (Germany). The topical areas covered were surgery and physiology. The young talents numbering 560 from 78 countries were delivered lectures by 23 Nobel Laureates. In autumn 2011 the Academy held a contest for participation in the Lindau physics forum in 2012 and selected three best candidates to be presented to the evaluation panel. Previously a trilateral cooperation agreement was signed for detailing the further activities and funding between the Academy and the bodies organising Lindau forums (Council for the Lindau Nobel Laureate Meetings; Foundation Lindau Nobelprizewinners Meeting).

An inherent part of the European Research Area, Estonia quite understandably lays emphasis on COOPERATION WITH THE EUROPEAN UNION RESEARCH INSTITUTIONS and on active participation in EU structures, programmes, and projects. Namely, Vice-President Jüri Engelbrecht belongs to the 7FP project NETWATCH Advisory Board. NETWATCH is a platform providing an overview of the ERA-NET cooperation schemes and other national programmes aimed to develop and fund cross-border joint research. J.Engelbrecht also belongs to the Advisory Group of the 7FP specific programme "People". As a partner in the FP7 project "Researchers' Night" the Estonian Academy of Sciences participated, for the sixth year in succession, in the project series aimed at enhancing public recognition of researchers and scientific careers. In greater detail see pp. 50-51.

The European Union regards as a matter of high importance providing to scientists favourable conditions to move from country to country for the purpose of research and for study. Together with the Archimedes Foundation (coordinator in Estonia), the University of Tartu, Tallinn University of Technology, the University of Life Sciences and Tallinn University, the Academy belongs to the European Services Network EURAXESS. The Network was initiated by the European Commission with a view to advising mobile researchers and doctoral students as well as their family members on administrative and practical issues. The service centres provide information on topics like visas, residence and work permits, vacant jobs in the research sphere, taxation, social security, availability of medical aid, daily life, etc. The European Commission organises to members of the Network trainings and conferences on the European level as well as working group activities, attended among others by officers of the Foreign Relations Unit of the Academy. For greater detail see <http://euraxess.ee>.

## NATIONAL AWARDS TO MEMBERS OF THE ACADEMY

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### NATIONAL SCIENCE PRIZE

Based on nominations from the National Science Prize Committee, the Government of the Republic of Estonia by Ordinance of 17 February 2011 No. 68 awarded

THE SCIENCE PRIZE FOR LONG-STANDING ACHIEVEMENTS IN RESEARCH AND  
DEVELOPMENT



*Vladimir Hižnjakov*

“... My research career is tightly intertwined with the Solid Matter laboratory and for the most part my studies have been performed on the spot. The prevailing collegial atmosphere of the lab has acted a decisive role in my life and, last but not least, my work has been invigorated through several decades long close relationship with experimental scientists at the Institute of Physics. The total amount of joint publications has reached over 40, whereas virtually every lab has rendered a co-author. I would like to extend my gratitude to you all!”

*National Science Prizes, 2011*

and



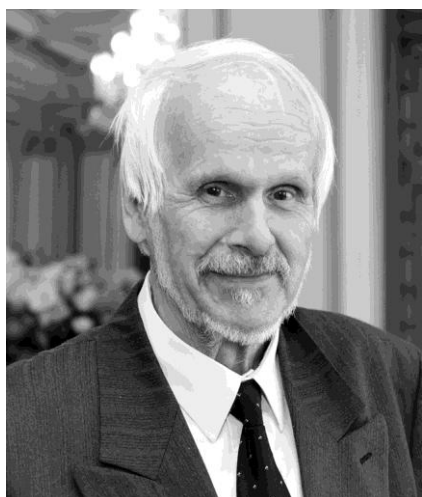
*Ülo Lille*

“... I wish to express my greatest gratitude to my colleagues for their unfaltering support during the more than half-century long uphill climb. In the same way, I would like to convey my sincere thanks in advance to all my future colleagues as yet another steep slope of a mountain is towering ahead of us, with the peak shrouded in clouds.”

*National Science Prizes, 2011*

ANNUAL SCIENCE PRIZES

IN EXACT SCIENCES



*Gennadi Vainikko*

For series of studies “Cordial  
Volterra integral equations”

IN THE HUMANITIES



*Valter Lang*

For series of studies “Bronze and  
Iron Ages in Estonia and other  
Baltic countries”

## ANNIVERSARIES

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Member of Academy *Ülo Lepik*

Ülo Lepik was born on 11 July 1921 in Tartu. He acquired the school education at H.Treffner Gymnasium, which he graduated from in 1940. In the same autumn Ülo Lepik enrolled at University of Tartu, Department of Mathematics, Faculty of Mathematics and Natural Sciences. Because of the warfare raging in Europe, his studies were interrupted twice and he succeeded in graduating from the University only as late as in 1948 majoring in physics.

Since 1947 Ülo Lepik has been on faculty of University of Tartu, having held a series of jobs on the career ladder ranging from Assistant to Professor. He defended his Candidate's thesis in 1952, in 1956-1958 he was a doctoral student at Moscow University, where he defended his doctoral thesis in 1959.

He was awarded Professorship in 1960. In 1959-1990 Ülo Lepik was Head of Theoretical Mechanics Department of University of Tartu and starting from 1996 he has been Professor-Emeritus of the University. Ülo Lepik was elected Member of the Estonian Academy of Sciences in 1993 in the area of mechanics.

Ülo Lepik has world-wide renown as scientist in the area of mechanics and optimization. The main directions of his research work are calculation of elastic-plastic rods, plates and crusts, application of linics for solving integral equations and evolution equations. He has elaborated new calculation methods for statistic and dynamic loads. A large part of his work has been related to optimum design of structures.

Under Ülo Lepik's supervision, 13 doctoral theses and candidate's theses have been defended. He has published nearly 100 scientific articles, two monographs and he is author and co-author of many higher school textbooks. Ülo Lepik is member of several international science organisations in his profile and member of editorial board of the Vilnius based journal Mathematical Modelling and Analysis. In 1998 Ülo Lepik was awarded the Order of the National Coat of Arms, 4<sup>th</sup> Class and in 2001 the Medal of the Estonian Academy of Sciences.

Besides job-related activities, Member of Academy Lepik has always appreciated sports like canoe paddling and mountain hiking, swimming, skiing and gymnastics. Nor does he decline an offer to play bridge in a good company.



Member of Academy *Arno Kõörna*

Arno Kõörna was born on 2 February 1926 in Tartumaa, the Nõo borough, wherefrom the family moved to Tartu in 1936. In 1947 he graduated from the Tartu 1<sup>st</sup> Secondary School and in 1955 he graduated from Faculty of History and Linguistics of University of Tartu. He dedicated his further path of research scientist to the study of problems of economics, staying to work in the University as lecturer at Department of Political Economy.

In 1961 Arno Kõörna defended at the Estonian Academy of Sciences his thesis of Candidate in Economics on economy of Estonia in end 19<sup>th</sup> C. – beginning 20<sup>th</sup> C. and in 1970 at the same place the doctoral thesis on the topic “Industrial production quality management methods in economy”. In 1972 he was awarded Professorship. Arno Kõörna was elected member of the Academy of Sciences in the area of economics in 1972.



In 1965 Arno Kõörna proceeded to work as Deputy Director of Institute of Economy of the Estonian Academy of Sciences. In 1966-1973 he was Director of the Institute, in 1973-1982 Scientific Secretary General of the Estonian Academy of Sciences, in 1982-1990 Vice-President and in 1990-1994 President of the Academy. In 1996-1997 Arno Kõörna was Rector of International Applied Higher School for Social Sciences LEX and since 1998 he has been Professor of Eurouniversity (starting from 2005 Professor Emeritus).

Besides science organising work at Institute of Economy of the Estonian Academy of Sciences Arno Kõörna continued research in the area of comparative analysis of economical mechanisms. He laid the foundation to one branch of industrial economics in Estonia – the quality economics. In the eighties he initiated the research direction in the area of science economics, establishing the respective research unit also in the Institute of Economy. Lately his area of research has been innovation, on which he has published aids in teaching and delivered lectures at higher schools.

When the Estonian Academy of Sciences became independent Arno Kõörna was engaged in work as scientist in economics and expert and as President of the Academy in several national institutions, being member of Council to Chairman of the Presidium of the Supreme Council, Chairman of Commission of the Supreme Council, declaring incorporation of Estonia in the Soviet Union in 1940 to have been occupation, and later member of Council to the Prime Minister. In 1990-1992 he was Chairman of the Estonian Research Council and Chairman of Commission of national science prizes. Up to now he has been member of several international science organisations.

In 1970 Arno Kõörna was recognized with a science prize for research in history of economics. In 1986 he was awarded Medal of the Estonian Academy of Sciences and in 2006 the Order of the White Star, 3<sup>rd</sup> Class.

In his free time he takes part in the activities of various charity organisations. His regular hobby is swimming.



Foreign Member of Academy *Els Oksaar*

Els Oksaar was born on 1 October 1926 in Pärnu. In 1944 she graduated from Pärnu 2<sup>nd</sup> Girls Gymnasium. She majored as Germanist, Anglicist and Slavist at Stockholm University. She studied general linguistics, phonetics and communicational science at Bonn University. In 1950 she graduated from Stockholm University.

In 1953 Els Oksaar obtained the degree of Licentiate of Philosophy in Germanistics and she habilitated in 1958 in the area of semantics of German.

In 1958-1967 Els Oksaar held the positions of Assistant Professor and Professor Extraordinary of German and German literature, being at the same time Head of Department of Sociology and Political Linguistics.

In 1965-1966 she was also visiting professor of Hamburg University, as from 1967 Professor of General and Comparative Linguistics, a position newly es-

established with Hamburg University, and Head of Research Centre of Multilingualism and Language Contacts, for the first time in existence in Germany

Els Oksaar has worked as visiting professor in Canberra and Tromsø Universities, as visiting researcher in Berlin University and she has delivered many visiting lectures in many universities of USA, Canada, Australia, Japan, Korea, Singapore, Hong Kong, Mexico and majority of European states.

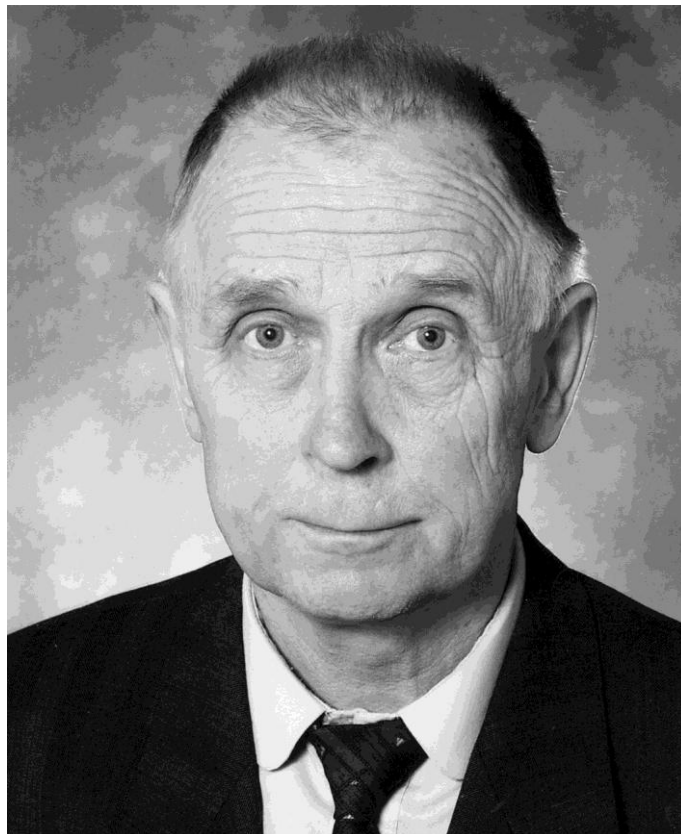
Scientific conclusions of this linguist of international renown base on long term and labour consuming projects, e.g. during the project of bilingualism carrying on 12 years and ending in 1980, the Estonians in Sweden, Australia, Canada and the USA, as well as Germans in Sweden and Australia were studied.

Spectrum of research topics of Els Oksaar embraces theoretical and practical aspects of linguistics, the Estonian language, grammar of German and Swedish. She has been pathfinder in several areas of linguistics: semantics, sociolinguistics, psycholinguistics, pedolinguistics, language contacts, multilingualism and intercultural communication.

She has authored over 350 publications, incl. 15 books and monographs and she is member of several editorial boards of German and international scientific journals.

In 1988-1994 Professor belonged to the composition of the highest council of science experts of Germany, being the Government's advisor in issues of science and higher education. She has been active in numerous professional associations and several boards of international science organisations like the International Association of Applied Linguistics (AILA, President 1975-1989), International Association for the Study of Child Language (IASCL, President 1975-1978), International Society of Applied Psycholinguistics (ISAPL, Vice-President 1982-1987), German Joachim Jungius Scientific Society (Vice-President 1994-1996) etc. Professor Oksaar developed a closer cooperation with Estonian researchers and members of faculty at the end 1980s, when she delivered lectures at University of Tartu. Upon her initiative, a cross-cultural communication centre was established at the University.

In 1998 Els Oksaar was elected Foreign Member of the Estonian Academy of Sciences. She is Doctor Honoris Causa of Helsinki University, Linköping University and University of Tartu, foreign member of Academies of Sciences of Finland and Norway and Swedish Royal Society for the Humanities (Lund). She is laureate of several Swedish and German science prizes and laureate of the largest international germanistics prize – Konrad-Duden-Preis. In 2001 Els Oksaar was awarded the Order of the White Star, 4<sup>th</sup> Class.



Member of Academy *Ülo Lille*

Ülo Lille was born on 16 September 1931 in Pärnumaa to a farmer's family. In 1950 he graduated from the Rapla Secondary School. That young man, originally entertaining an interest in the Humanities, still proceeded to study at Tallinn University of Technology, which he graduated from in 1955 majoring as engineer-chemist-technologist. Thereafter, in 1955-1957 he worked at Kiviõli Chemistry Combine as shift foreman and technologist, in 1957-1959 he took the post-graduate programme at University of Technology and in 1960 he proceeded to work at the newly established Oil Shale Institute in Kohtla-Järve, where he held the positions of senior researcher and head of sector. His main topics were research of composition and properties of kulkersite oil shale phenols.

In 1960 Ülo Lille defended at the Academy of Sciences the thesis of Candidate in Engineering on the topic "Obtaining unsaturated hydrocarbon gases

at pyrolysis of oil shale” and in 1973 at the same place the thesis of Doctor in Chemistry on the topic “Research in the area of alkylrecorcinols”.

In 1975 Ülo Lille proceeded to work at the Institute of Chemistry of the Estonian Academy of Sciences first as Head of Sector of Pure Substances, later as Head of Department and until now as senior researcher. His main areas of research were firstly the chemistry of prostaglandins and its applications in medicine. In this century the object of research of Member of Academy Lille has been polymers, incl. again the structure and development of kerogen of Estonian kukersite. In recent years he has been making his contribution also into the materials science, modelling electron-conducting polymers, which may have major importance in medicine of the future besides the so-called ‘organic electronics’.

In 1983 Ülo Lille was elected Member of the Estonian Academy of Sciences. For his works on chemistry, technology and applications of prostaglandins he was awarded the national science prize in 1987.

In 1992-1997 Ülo Lille was Head of Department of Organic Chemistry of Tallinn University of Technology and Head of Department of Institute of Chemistry. Starting from 1997 he has been Professor Emeritus of Tallinn University of Technology.

Under supervision of Ülo Lille there have been defended 3 theses of candidate of sciences and 8 PhD theses. He has published ca 200 scientific publications. In 1993-2007 he was chairman of editorial board of the journal “Proceedings of the Estonian Academy of Sciences. Chemistry”.

In 2001 Member of Academy Lille was awarded the Order of White Star, 5<sup>th</sup> Class. In this year he was awarded the science prize for long productive work in research and development.

Besides the research Ülo Lille takes an active interest in developments of Estonian politics. After the working day he likes listening to the classical music. In summers he relaxes doing rural work.



Member of Academy *Arvo Ots*

Arvo Ots was born on 26 June 1931 in Pärnu to a school teacher's family. In 1950 he graduated from Tallinn Gymnasium in Science and Humanities as an external student and in 1955 he graduated from Department of Mechanics of Tallinn University of Technology majoring in thermal engineering. Besides studies he worked at Tallinn University of Technology as senior laboratory assistant of Thermal Engineering Department and later (until 1960) as junior researcher of Institute of Energy of the Academy of Sciences. Arvo Ots defended the thesis of Candidate in Engineering on the topic "Burning of pulverised oil shale" in 1958 and he was awarded the Assistant Professorship in 1962. He defended the thesis of Doctor in Engineering on the topic "Thermal physical and chemical processes in pulverised oil shale heating chambers" at the Estonian Academy of Sciences in 1968, and was awarded Professorship in 1969.

In 1959-1960 Arvo Ots was the lecturer on hourly wages of Thermal Energy Department of Tallinn University of Technology, thereafter Assistant Professor in 1960-1966, senior researcher in 1966-1968, Head of Thermal Energy Department in 1969-1991, Director of Thermal Engineering Institute in 1991-2001, Professor Extraordinary in 2001-2003. Starting from 2003 he has been senior researcher extraordinary and Professor Emeritus of Tallinn University of Technology. In 1983 Arvo Ots was elected Member of the Estonian Academy of Sciences, in 1996 Member of Finnish Academy of Technology, starting from 2005 he has been member of the American Society of Mechanical Engineers (ASME). Under his supervision, there have been defended 3 doctoral, 18 candidate's and 2 PhD theses. Arvo Ots has released over 450 scientific works, incl. university textbooks, study materials and monographs, as well as numerous popular science pieces of writing and articles to reference books.

Arvo Ots has nearly fifty years taught the subjects belonging mainly to thermal power equipment area, he has supervised numerous course and diploma projects. He has participated at elaborating the Energy Act of the Republic of Estonia and has headed the collective bodies at drawing the Estonian energy development programmes. He is member of Energy Council of Ministry of Economic Affairs and Communications and the Estonian Academy of Sciences and member of editorial boards of journals "Oil Shale", "Thermal Science" and "Energetika".

Arvo Ots' scientific activity has been related to study of energy use and processes of burning solid fuels and oil shale in boilers. His research has laid the foundation to oil shale energy of large capacity equipment and introduction in power plants of up-to-date burning techniques.

Arvo Ots' works were recognized by science prizes of the Soviet Estonia in 1970 and 1980. He was awarded the honorary title of Merited Scientist in 1981. He was awarded the Order of the White Star, 4<sup>th</sup> Class of the Republic of Estonia in 2002. In 2006 he became the Year's Engineer. In 2010 Arvo Ots was awarded the science prize for life-long work in the area of oil shale energy.

The Member of Academy likes to while away his free time amid his musical recordings collection. He prefers the symphonic music and classical jazz.



Foreign Member of Academy *Antero Jahkola*

Antero Jahkola was born on 5 February 1931 in Korpilahti, Finland. In 1956 he graduated from Helsinki University of Technology with a degree in power energetics. After that he worked until 1974 in the largest Finnish energy enterprise Imatran Voima OY as engineer and as deputy head of planning department. At the same time, his path of a scientist continued at Helsinki University of Technology, where he was researcher of power equipment laboratory in 1957-1963, Alternate Professor of energy economy and power plants in 1971-1974 and since 1974 Professor and Head of Laboratory. Antero Jahkola became emeritus in 1994, but he has continued scientific activities at Laboratory of Energy Economy and Power Plants. His main areas of research are related to burning and gasification of solid fuels and economy of thermal schemes of power equipment. He has released more than 150 scientific publications and is owner of 2 patents.



Since 1976 Professor Jahkola has had close contacts with Tallinn University of Technology and the Estonian Academy of Sciences. He has repeatedly delivered lectures in Estonia, he has taken part in joint researches, he has organised Finnish-Estonian energy-related joint seminars and scientific conferences, dedicated to the EU energy policy and its implementation in the Baltic States. He has participated at work of energy doctoral council of Tallinn University of Technology as member and opponent. To recognize his outstanding service in research of solid fuel and promoting the Finnish-Estonian scientific cooperation, Antero Jahkola was elected the Doctor Honoris Causa of Tallinn University of Technology in 1993. He has been member of Estonian-Finnish cooperation commission on energy since it was founded in 1991, being presently the co-chairman on the Finnish side.

In 1998 the Estonian Academy of Sciences elected Antero Jahkola its Foreign Member. He is member of Finnish Academy of Technology, New York Academy of Sciences, Finnish Union of University Professors, member of several Finnish and international professional unions. In 2004, he was awarded the Order of the Cross of Terra Mariana, 3<sup>rd</sup> Class.



Foreign Member of Academy *Päiviö Tommila*

Päiviö Tommila was born on 4 August 1931 in Jyväskylä, Finland. He majored in history at Helsinki University and in 1964 defended there his doctoral thesis. In 1965-1976 he worked as Professor in History and Head of Department of History, University of Turku, thereafter at Helsinki University, where he was Professor of History of Finland, Dean of Department of History and Philology and in 1988-1992 Rector. From 1994 he has been Professor Emeritus of Helsinki University

In his scientific activity Päiviö Tommila has considered several aspects of history of Finland, while his scientific work is mainly related to history of culture and science. He is author or editor-in-chief of over fifty works. Under his supervision, several major projects of research in history of Finland were carried out, as a result of which there appeared in print impressive serial issues considering the history of Finnish culture (3 volumes: 1979-1982), urban

institutions (3 volumes: 1981-1984), press (10 volumes: 1985-1992), rulers (2000) and science (4 volumes: 2000-2003).

Starting from the beginning of 1970s Päiviö Tommila has co-operated with Estonian historians, mainly with those from Institute of History of the Academy and University of Tartu. Upon solicitation of Päiviö Tommila the Estonian historians attended the symposiums on history covering the history of the Baltic Sea area, held in Turku in 1971-1988. Close co-operation between researchers of history of Finnish and Estonian press ranged from personal contacts to organisation of joint seminars. Päiviö Tommila has long been member of Finnish Academy of Science and Letters and Finnish Scientific Society, he has promoted the establishment in Finland of Estonian Foundation and he is one of the founders of Tallinn Training Centre ESKO of that Foundation.

In 1991 Päiviö Tommila was elected Foreign Member of the Estonian Academy of Sciences. In 2001 he was awarded the Order of the Cross of Terra Mariana, 3<sup>rd</sup> Class. In 2004 Professor Tommila merited the highest recognition of Finnish scientists – honorary title of Member of Academy.

Päiviö Tommila's hobbies – photography, philately and collection of medals help keep sprightly the spirit of the scientist providing meaning to the past.



Foreign Member of Academy *Charles Gabriel Kurland*

Charles Gabriel Kurland was born on 14 January 1936 in New York.

He graduated from Cornell University majoring in biochemistry, obtained the doctor's degree in 1961 in Harvard and passed a post-doctorate programme with Copenhagen and Stanford Universities. His first Professorship passed in 1968-1971 in Wisconsin. Thereafter he was elected the first Professor in Molecular Biology of Sweden (and Scandinavia). He worked long as Head of Institute of Molecular Biology of Uppsala University and Head of Genome Centre of Lund University. Starting from 2001, Charles G. Kurland has been Professor Emeritus at Uppsala University. His research activity is going on at Division of Microbiological Ecology of Natural Sciences Department of Lund University.

Charles G. Kurland's scientific works belong to the domain of molecular biology, where research of accuracy of translation of ribosome structure and

genetic code hold an important place. Parallel to Hopefield, he developed the current conception of molecular mechanisms providing accuracy of translation of the genetic code and gave a qualitative and quantitative explanation to the biological implications of the said process. In recent decade, enthused by new trends of molecular biology of bacteria, he has started research of development of endoparasitic bacteria and cell organelles. One of the authors of appeal of the European Society of Molecular Biology on genetically transformed organisms and public, Professor Kurland is also concerned with presentation and elucidation of goals, achievements and hazards of scientific research. He has authored over 170 scientific publications and he is one of the most frequently cited natural scientists in the world.

Probation with Professor Kurland enabled Estonian scientists in 1970s to create co-operation contacts worldwide. Several Estonian molecular biologists were provided, upon his recommendation, the opportunity of self-education in renowned research laboratories of the USA, England, Germany and Sweden.

In 1991 Charles G. Kurland was elected Foreign Member of the Estonian Academy of Sciences.

Charles G. Kurland is Foreign Member of Danish Academy of Sciences and Swedish Academy of Sciences, member of European Society of Molecular Biology and chairman of several commissions, member of Uppsala Science Society and of Lund Society of Geomorphology. He has been recognized with numerous academic awards and prizes



Member of Academy *Leo Mõtus*

Leo Mõtus was born on 15 December 1941 in Järvamaa to a farmer's family. Up to the fifth form he studied at Kuigatsi school in Valgamaa, thereafter moving to Tallinn. In 1960 he graduated from Gustav Adolf Gymnasium and proceeded to study the newly created specialty of automatics at Tallinn University of Technology, which he graduated from in 1965. He defended the thesis of Candidate in Engineering "Stochastic control of systems with incomplete information" in 1973 at Estonian Academy of Sciences and the thesis of Doctor of Sciences "Software engineering for distributed embedded systems" in 1990 at Moscow Control Science Institute.

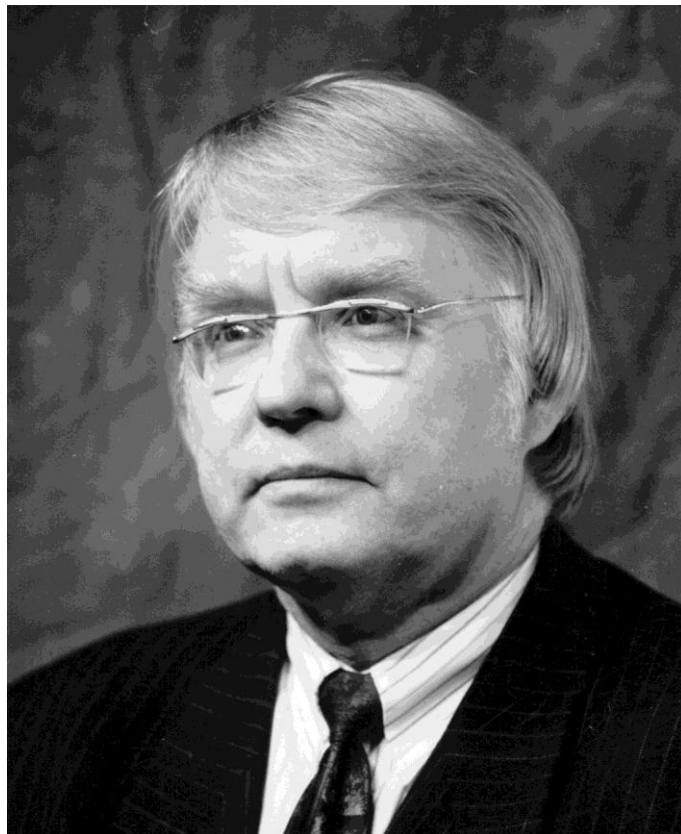
Yet a student, in 1964 he proceeded to work at Institute of Cybernetics at the Group of Processes Control in the position of engineer, where he worked until 1979 (later as senior engineer, post-graduate student, researcher and senior researcher). In 1979-1992 he was chief designer of project of Special Design Office of Computer Engineering EKTA, in 1975-1988 he was also on faculty

of Department of Computer Control of Tallinn University of Technology, in 1990-1992 Head of Cybernetics Base Department. Starting from 1992 Leo Mõtus has been Professor of real time systems of Institute of Computer Control of University of Technology, in the time interval 1994-2001 also Dean of Systems Engineering Faculty.

In 1993 Leo Mõtus was elected Member of Estonian Academy of Sciences in the area of informatics and since 2004 he has been Secretary General of the Academy of Sciences. He is actively involved in many professional organisations and editing various international journals.

Main avenues of Leo Mõtus' research effort are situation-aware interactive computations, multi-agent systems and real time pervasive computing systems. Twice his work was recognized with a national science prize (1980, 1996). In 1999 he was awarded the Order of the White Star, 4<sup>th</sup> Class of the Republic of Estonia.

Although work tends to occupy all the free time the Member of Academy Mõtus has, he still admits indulging in some hobbies, namely meditating, swimming, dancing, and reading fiction.



Member of Academy *Raimund-Johannes Ubar*

Raimund-Johannes Ubar was born on 16 December 1941 in Tallinn. In 1960 he graduated from Westholm Gymnasium, where he was keen on guitar playing in the school orchestra and in 1959-1967 he belonged to the Estonian gymnastic team. After leaving gymnasium he enrolled at Tallinn University of Technology majoring in automatics, graduating from it in 1966.

Even before graduating from the University (1965) Raimund-Johannes Ubar proceeded to work at the plant Punane RET. In 1968 he enrolled in post-graduate programme at University of Technology in Moscow named after Baumann, where he was assigned, as the topic of research, the diagnostics of complicated systems. The work was related to aircraft industry and he had to test the electrical systems of spacecraft Venera and the Lunar rover (moon buggy). Three years later (1971) he defended the thesis of Candidate in Engineering and returned to Estonia, proceeding to work at Tallinn University of Technology. In 1986 he defended the thesis of Doctor of Sciences at Riga Institute



of Computer Engineering on research and elaboration of methods of diagnostics of digital systems. In 1987 Raimund-Johannes Ubar was awarded Professorship and in 1993 he was elected Member of Estonian Academy of Sciences in the area of computer engineering.

Raimund-Johannes Ubar has worked at Tallinn University of Technology as assistant, senior lecturer and Assistant Professor of Department of Computer Engineering, he has been Head of Department and Professor, Head of Laboratory of Designing and Diagnostics of Digital Systems and founder and Head of Electronics Competence Centre of Tallinn University of Technology (1993-1997). In 2002-2004 he was Research Professor of the Estonian Academy of Sciences. Starting from 2005 Raimund-Johannes Ubar has been Professor of computer engineering and diagnostic and Head of Institute of Computer Engineering of Tallinn University of Technology. He also heads the Centre for Integrated Electronic Systems and Biomedical Engineering CEBE.

Raimund-Johannes Ubar has displayed great vigour in science organisation and administration activities both in Estonia and elsewhere in the world. In 1999 he was awarded the national science prize in the area of engineering and in 2002 he was awarded the Order of the White Star, 3<sup>rd</sup> Class of the Republic of Estonia.

After end of his youth top gymnast's career Member of Academy Ubar indulges in occasions of travelling, provided by conferences and work abroad. He loves music, literature, photography, he collects stamps and coins.

Other anniversaries in 2011:

65<sup>th</sup> birthday

Foreign Member of Academy *Michael Godfrey Rodd*

60<sup>th</sup> birthday

Member of Academy *Andres Metspalu*

55<sup>th</sup> birthday

Member of Academy *Enn Lust*

50<sup>th</sup> birthday

Member of Academy *Mart Kalm*

Member of Academy *Urmas Varblane*

## MEMBERS OF THE ACADEMY

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As of February 2012\*

**Olav AARNA**, born 4.11.1942, elected 1990, informatics. Tallinn University of Technology 1965. Member of the Board, Estonian Qualification Authority (2008); Mustamäe tee 16, 10617 Tallinn ESTONIA, Tel: +372 679 1750, olav.aarna@kutsekoda.ee. HOME ADDRESS Nooruse 1-45, 76901 Tabasalu, Harku vald, Harju maakond ESTONIA, Tel: +372 603 2060. Cohabitant, three sons and daughter.

**Jaak AAVIKSOO**, born 11.01.1954, elected 1994, exact sciences. University of Tartu 1976. Minister, Ministry of Education and Research (2011); Munga 18, 50088 Tartu ESTONIA, Tel: +372 735 0120, Fax: +372 730 1080, jaak.aaviksoo@hm.ee. HOME ADDRESS Tähe 91a-7, 50107 Tartu ESTONIA, Tel: +372 734 9000. Widower, two sons and daughter.

**Hillar ABEN**, born 3.12.1929, elected 1977, mechanics. Tallinn University of Technology 1953. Head of the Laboratory of Photoelasticity, Institute of Cybernetics at Tallinn University of Technology (1987); Akadeemia tee 21, 12618 Tallinn ESTONIA, Tel: +372 620 4180, Fax: +372 620 4151, aben@cs.ioc.ee. HOME ADDRESS Hiiu-Maleva 30-2, 11619 Tallinn ESTONIA, Tel: +372 657 2407. Married, two sons.

**Jüri ALLIK**, born 3.03.1949, elected 2010, psychology. University of Tartu 1973. Professor of experimental Psychology, Head of the Institute of Psychology, University of Tartu (2002); Tiigi 78, 50410 Tartu ESTONIA, Tel: +372 737 5905, Fax: +372 737 6152, juri.allik@ut.ee. HOME ADDRESS Palu tee 20A, 61505 Tartu ESTONIA, Tel: +372 744 2119. Married, three children.

**Toomas ASSER**, born 14.07.1954, elected 2011, medical science. University of Tartu 1979. Professor of neurosurgery, University of Tartu, (1995); L.Puusepa 8, 51014 Tartu ESTONIA, Tel: +372 731 8500, Fax +372 731 8106, toomas.asser@kliinikum.ee. HOME ADDRESS Kastani 30a, 50409 Tartu ESTONIA, Tel: +372 742 0215. Married, two sons and daughter.

**Mihhail BRONŠTEIN**, born 23.01.1923, elected 1975, agricultural economics. St. Petersburg State University 1949. Professor emeritus, University of Tartu (1993). HOME ADDRESS Kolde pst 104-44, 10316 Tallinn ESTONIA, Tel: +372 5662 9275. Widower, son and daughter.

**Jaan EINASTO**, born 23.02.1929, elected 1981, astrophysics. University of Tartu 1952. Senior Researcher, Department of Cosmology, Tartu Observatory (2004); 61602 Tõravere, Tartu maakond ESTONIA, Tel: +372 741 0110, Fax: +372 741 0205, einasto@aai.ee. HOME ADDRESS Observatooriumi 6-3, 61602 Tõravere, Tartu maakond ESTONIA, Tel: +372 741 0151. Widower, son and two daughters.

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\* Research institutions and universities are presented according to their current names.

**Jüri ENGELBRECHT**, born 1.08.1939, elected 1990, mechanics. Tallinn University of Technology 1962. Vice-President, Estonian Academy of Sciences (2004); Kohtu 6, 10130 Tallinn ESTONIA, Tel: +372 644 2013, Fax: +372 645 1805, j.engelbrecht@akadeemia.ee. HOME ADDRESS Trummi 34J, 12617 Tallinn ESTONIA, Tel: +372 672 6045. Married, son and daughter.

**Ene ERGMA**, born 29.02.1944, elected 1997, exact sciences. Moscow University 1969. President, Riigikogu (Parliament) (2003), Lossi plats 1a, 15165 Tallinn ESTONIA, Tel: +372 631 6301, Fax: +372 631 6304, ene.ergma@riigikogu.ee. HOME ADDRESS Aleksandri 35-14, 51004 Tartu ESTONIA, Tel: +372 738 1874. Single.

**Arvi FREIBERG**, born 28.06.1948, elected 2009, exact sciences. Tallinn University of Technology 1971. Professor of biophysics and plant physiology, University of Tartu (2003); Riia 142, 51014 Tartu ESTONIA, Tel: +372 737 4612, arvi.freiberg@ut.ee. HOME ADDRESS Aardla 154-5, 50415 Tartu ESTONIA, Tel: +372 5645 3175. Married, daughter and son.

**Raimund HAGELBERG**, born 7.02.1927, elected 1981, economics. Tallinn University of Technology 1950. Professor emeritus, University of Tartu (1995). HOME ADDRESS Ropkamõisa 12-7, 50113 Tartu ESTONIA. Widower, daughter

**Vladimir HIŽNJAKOV**, born 25.05.1938, elected 1977, physics. University of Tartu 1960. Senior Researcher, Institute of Physics at University of Tartu (2004); Riia 142, 51014 Tartu ESTONIA, Tel: +372 737 4759, Fax: +372 738 3033, hizh@fi.tartu.ee. HOME ADDRESS Aardla 154-6, 50415 Tartu ESTONIA, Tel: +372 747 5290. Married, son and two daughters.

**Ülo JAAKSOO**, born 16.04.1939, elected 1986, informatics. Tallinn University of Technology 1962. Chief Executive Officer, Cybernetica AS (1997); Akadeemia tee 21, 12618 Tallinn ESTONIA, Tel: +372 639 7991, Fax: +372 639 7992, ulo.jaaksoo@cyber.ee. HOME ADDRESS Mägra 6, 10917 Tallinn ESTONIA, Tel: +372 672 6009. Married

**Jaak JÄRV**, born 05.11.1948, elected 1997, natural sciences. University of Tartu 1972. Professor of organic chemistry, University of Tartu (1992); Ravila 14a, 50411 Tartu ESTONIA, Tel: +372 737 5246, Fax: +372 737 5247, jaak.jarv@ut.ee. HOME ADDRESS E. Wiiralti 1, 51011 Tartu ESTONIA. Married, son and two daughters.

**Ain-Elmar KAASIK**, born 2.08.1934, elected 1993, neurology. University of Tartu 1959. Professor emeritus, University of Tartu (1999); L.Puusepa 2, 51014 Tartu ESTONIA, Tel: +372 731 8538; ain-elmar.kaasik@kliinikum.ee. HOME ADDRESS Ülase 14, 50412 Tartu ESTONIA, Tel: +372 742 5426. Married, son.

**Dimitri KALJO**, born 12.10.1928, elected 1983, geology. University of Tartu 1953. Senior Researcher, Institute of Geology at Tallinn University of Technology (2008); Ehitajate tee 5, 19086 Tallinn ESTONIA, Tel: +372 620 3016, Fax: +372 620 3011, kaljo@gi.ee. HOME ADDRESS Raja 7A-6, 12616 Tallinn ESTONIA, Tel: +372 672 6551. Married, son and daughter.

**Mart KALM**, born 3.09.1961, elected 2010, art history. University of Tartu 1984. Professor (2000), Dean of the Faculty of Art and Culture (2007), Estonian Academy of Arts; Suur-Kloostri 11, 10133 Tallinn, ESTONIA, Tel: +372 611 7651, kalm@artun.ee. HOME ADDRESS Ravi 19-13, 10138 Tallinn, ESTONIA, Tel: +372 644 0846. Married, son and daughter.

**Mati KARELSON**, born 27.12.1948, elected 2007, natural sciences and medicine. University of Tartu 1972. Professor of molecular technology, University of Tartu, Tallinn University of Technology (2004); Ravila 14a, 50411 Tartu ESTONIA, Tel: +372 737 5255, Fax: +372 737 5264, mati.karelson@ut.ee, HOME ADDRESS Mõisatamme 27, Vahi, 60534 Tartumaa ESTONIA, Tel: +372 734 8399. Married, two sons.

**Ilmar KOPPEL**, born 16.01.1940, elected 1993, natural sciences (physical chemistry). University of Tartu 1963. Lead. Researcher, Ass. Director of Research, Institute of Chemistry at University of Tartu (2008); Ravila 14a, 50411, Tartu ESTONIA, Tel: +372 737 5263, Fax: +372 737 5264, ilmar@chem.ut.ee. HOME ADDRESS Kaunase pst 16-10, 50704 Tartu ESTONIA, Tel: +372 748 4351. Married, son.

**Arvo KRIKMANN**, born 21.07.1939, elected 1997, humanities. University of Tartu 1962. Senior Researcher, Estonian Literary Museum (2000); Vane-muise 42, 51003 Tartu ESTONIA, Tel: +372 742 0079, Fax: +372 742 0426, kriku@folklore.ee. HOME ADDRESS Kastani 59-2, 50410 Tartu ESTONIA, Tel: +372 742 0079. Married, three sons.

**Lembit KRUMM**, born 20.07.1928, elected 1987, power engineering. Tallinn University of Technology 1952. Senior Researcher, Institute of Electrical Power Development, Tallinn University of Technology (2004); Ehitajate tee 5, 19086 Tallinn ESTONIA, Tel: +372 620 3759, lembitkrumm@gmail.com. HOME ADDRESS Trummi 4-19, 12616 Tallinn ESTONIA, Tel: +372 672 6513, +372 564 4706. Married, two sons and two daughters.

**Valdek KULBACH**, born 6.04.1927, elected 1986, mechanics. Tallinn University of Technology 1951. Professor emeritus, Tallinn University of Technology (1998); Ehitajate tee 5, 19086 Tallinn ESTONIA, Tel: +372 620 2408, Fax: +372 620 2405, valdek.kulbach@gmail.com. HOME ADDRESS Rõõmu 14-9, 10921 Tallinn ESTONIA, Tel: +372 677 8207. Married, two daughters.

**Urmas KÕLJALG**, born 24.02.1961, elected 2011, biosystematics and ecology. University of Tartu 1988. Professor of mycology (2001), Director of Natural History Museum (2005), University of Tartu; Ravila 14a, 50411 Tartu ESTONIA, Tel: +372 737 6235, Fax: +372 737 6222, urmas.koljalg@ut.ee. HOME ADDRESS Elva 6, 50404 Tartu ESTONIA. Married, three daughters and son.

**Arno KÕÖRNA**, born 2.02.1926, elected 1972, economics. University of Tartu 1955. Professor emeritus, Euroacademy (2005); Mustamäe tee 4, 10621 Tallinn ESTONIA, Tel/Fax: +372 650 5120. HOME ADDRESS A.Kapi 9-22, 10136 Tallinn ESTONIA, Tel: +372 662 0628, arno.koorna@mail.ee. Widower, son and daughter.

**Jakob KÜBARSEPP**, born 9.02.1947, elected 2011, materials engineering. Tallinn University of Technology 1970. Professor of metals engineering, University of Technology (1997); Ehitajate tee 5, 19086 Tallinn ESTONIA, Tel: +372 620 3354, Fax: +372 620 3480, jakob.kubarsepp@ttu.ee. HOME ADDRESS Rännaku pst 56, 10921 Tallinn ESTONIA, Tel: +372 672 2281. Married, four daughters.

**Rein KÜTTNER**, born 25.11.1940, elected 1997, technical sciences. Tallinn University of Technology 1965. Professor emeritus, University of Tartu (2010). HOME ADDRESS Mooni 107-58, 13424 Tallinn ESTONIA, Tel: +372 652 5503. Married, son.

**Hans KÜÜTS**, born 20.12.1932, elected 1994, agricultural sciences. Estonian University of Life Sciences 1956. Senior Researcher, Jõgeva Plant Breeding Institute (1999); Aamisepa 1, 48309 Jõgeva alevik, Jõgeva maakond ESTONIA, Tel: +372 776 6914, Fax: +372 776 6902, ylle.tamm@jpbi.ee. HOME ADDRESS Tihase 11, 48309 Jõgeva alevik, Jõgeva maakond ESTONIA, Tel: +372 772 1375. Married, three daughters.

**Agu LAISK**, born 3.05.1938, elected 1994, natural sciences. University of Tartu 1961. Senior Researcher of plant physiology, University of Tartu (2005); Riia 23, 51010 Tartu ESTONIA, Tel: +372 736 6021, Fax: +372 742 0286, agu.laisk@ut.ee. HOME ADDRESS Haagejärve 2, 61401 Tähtvere vald, Tartu maakond ESTONIA, Tel: +372 749 3228. Married, three sons.

**Valter LANG**, born 26.01.1958, elected 2010, historical sciences. University of Tartu 1981. Professor of archaeology (1999), Dean of the Faculty of Philosophy (2006), University of Tartu; Ülikooli 18, 50090 Tartu ESTONIA, Tel: +372 737 5340, Fax: +372 737 5345, valter.lang@ut.ee. HOME ADDRESS Kuu 12A-2, 50114 Tartu ESTONIA, Tel: +372 5291 1843. Married, son and daughter.

**Ülo LEPIK**, born 11.07.1921, elected 1993, mechanics. University of Tartu 1948. Professor emeritus, University of Tartu (1996); J.Liivi 2-426, 50409 Tartu ESTONIA, Tel: +372 737 5443, ulo.lepik@ut.ee. HOME ADDRESS Lunini 3, 50406 Tartu ESTONIA, Tel: +372 738 0023. Married, two sons and daughter.

**Georg LIIDJA**, born 4.08.1933, elected 1987, physics. University of Tartu 1957. Senior Researcher, National Institute of Chemical Physics and Biophysics (1982); Akadeemia tee 23, 12618 Tallinn ESTONIA, Tel: +372 639 8328, Fax: +372 639 8393, gli@kbf.ee. HOME ADDRESS Kärberi 41-43, Tallinn, ESTONIA, Tel: +372 635 5878. MAIL ADDRESS Nimekast 3216, 10505 Tallinn ESTONIA. Married, son and daughter.

**Ülo LILLE**, born 16.09.1931, elected 1983, biotechnology. Tallinn University of Technology 1955. Senior Researcher, Institute of Chemistry at Tallinn University of Technology (1997); Akadeemia tee 15, 12618 Tallinn ESTONIA, Tel: +372 620 4383, Fax: +372 620 2828, lille@chemnet.ee. HOME ADDRESS Trummi 32P, 12617 Tallinn ESTONIA, Tel: +372 672 6032. Married, two daughters.

**Endel LIPPMAA**, born 15.09.1930, elected 1972, chemical physics. Tallinn University of Technology 1953. Laboratory of Chemical Physics, National Institute of Chemical Physics and Biophysics (1980); Kohtu 6, 10130 Tallinn ESTONIA, Tel: +372 644 1304, elippmaa@nicpb.ee. HOME ADDRESS Sõbra 14, 10920 Tallinn ESTONIA, Tel: +372 677 7975. Married, two sons.

**Margus LOPP**, born 11.09.1949, elected 2011, chemistry. University of Tartu 1973. Professor of organic chemistry, Tallinn University of Technology (1997); Akadeemia tee 15, 12618 Tallinn ESTONIA, Tel: +372 620 2808, margus.lopp@ttu.ee. HOME ADDRESS Trummi 32S, 12617 Tallinn ESTONIA, Tel: +372 672 6034. Married, son and two daughters.

**Ülo LUMISTE**, born 30.06.1929, elected 1993, mathematics. University of Tartu 1952. Professor emeritus, University of Tartu (1996); J.Liivi 2-427, 50090 Tartu, ESTONIA, Tel: + 372 737 6419, ulo.lumiste@ut.ee. HOME ADDRESS Turu 19-28, 51004 Tartu ESTONIA, Tel: +372 734 4280, +372 515 1664. Married, two sons.

**Enn LUST**, born 22.10.1956, elected 2010, energy technology. University of Tartu 1980. Professor of physical chemistry (1997), Director of the Institute of Chemistry (2008), University of Tartu; Ravila 14a, 50411 Tartu ESTONIA, Tel: +372 737 5165, Fax: +372 737 5264, enn.lust@ut.ee. HOME ADDRESS Leesika 8, 50304 Tartu ESTONIA. Married, two daughters and son.

**Tšeslav LUŠTŠIK**, born 15.02.1928, elected 1964, solid state physics. St. Petersburg State University 1951. Senior Researcher, Institute of Physics at University of Tartu (1994); Riia 142, 51014 Tartu ESTONIA, Tel: +372 737 4784, Fax: +372 738 3033, luch@fi.tartu.ee. HOME ADDRESS Aardla 130-7, 50415 Tartu ESTONIA, Tel: +372 747 6608. Married, son.

**Udo MARGNA**, born 18.11.1934, elected 1987, plant physiology. University of Tartu 1957. Lecturer of Pharmacy Department, Tallinn Health Care College (2008); Kännu 67, 13418 Tallinn ESTONIA, Tel: +372 671 1725, udo.margna@ttk.ee. HOME ADDRESS Instituudi tee 16-10, 76902 Harku alevik, Harju maakond ESTONIA, Tel: +372 656 0630. Married, two daughters.

**Jüri MARTIN**, born 29.09.1940, elected 1990, ecology. University of Tartu 1964. Rector, Euroacademy (1997); Mustamäe tee 4, 10621 Tallinn ESTONIA, Tel: +372 611 5804, jmartin@euroakadeemia.ee. HOME ADDRESS Liiva tee 2, Rohuneeme, Viimsi vald, 74012 Harju maakond, Tel: +372 503 1794. Married, three sons and daughter.

**Enn MELLIKOV**, born 1.04.1945, elected 2003, technology of materials. Tallinn University of Technology 1968. Director, Department of Material Science at Tallinn University of Technology (2002); Ehitajate tee 5, 19086 Tallinn ESTONIA, Tel: +372 620 2798, ennm@staff.ttu.ee. HOME ADDRESS Silla 2-5, Saku 75501 Harjumaa ESTONIA, Tel: +372 604 1076. Married, two sons.

**Andres METSPALU**, born 11.03.1951, elected 2010, biotechnology. University of Tartu 1976. Professor of biotechnology, University of Tartu (1992), Director of the Estonian Genome Center (2008); Tiigi 61B, 50410 Tartu ESTONIA, Tel: +372 737 5066, Fax: +372 744 0221, andres.metspalu@ut.ee. HOME ADDRESS Kalevi 65, 50103 Tartu ESTONIA, Tel: +372 734 3256. Married, four sons.

**Leo MÕTUS**, born 15.12.1941, elected 1993, informatics. Tallinn University of Technology 1965. Secretary General, Estonian Academy of Sciences (2004); Professor of Real-time Systems, Tallinn University of Technology (1992); Kohtu 6, 10130 Tallinn ESTONIA, Tel: +372 644 5810, Fax: +372 645 1805, leo.motus@akadeemia.ee. HOME ADDRESS Roosi 7, 10922 Tallinn ESTONIA, Tel: +372 672 4024. Married, two daughters.

**Eve OJA**, born 10.10.1948, elected 2010, mathematics. University of Tartu 1972. Professor of functional analysis, University of Tartu (1992); J.Liivi 2, 50409 Tartu ESTONIA, Tel: +372 737 6407, Fax: +372 737 5863, eve.oja@ut.ee. HOME ADDRESS Ropka 19-25, 50111 Tartu ESTONIA, Tel: +372 747 0795. Married, son.

**Arvo OTS**, born 26.06.1931, elected 1983, power engineering. Tallinn University of Technology 1955. Extraordinary Senior Researcher, Tallinn University of Technology (2003); Kopli 116, 11712 Tallinn ESTONIA, Tel: +372 620 3904, +372 620 3900, Fax: +372 620 3901, aots@sti.ttu.ee. HOME ADDRESS Metsa 62B, 11620 Tallinn ESTONIA, Tel: +372 657 6034, +372 501 2217. Married, son and daughter.



**Karl PAJUSALU**, born 20.06.1963, elected 2011, linguistics. University of Tartu 1986. Professor of Estonian Dialectology and History of the Estonian Language, University of Tartu (2000); Lossi 3-321, 50090 Tartu ESTONIA, Tel: +372 737 6124, karl.pajusalu@ut.ee. HOME ADDRESS Nooruse 54, 50411 Tartu ESTONIA, Tel: +372 526 7733. Married, two sons and daughter.

**Erast PARMASTO**, born 23.10.1928, elected 1972, botany. University of Tartu 1952. Extraordinary Senior Researcher, Institute of Agricultural and Environmental Science at Estonian University of Life Sciences (1991); Riia 181, 51014 Tartu ESTONIA, Tel: +372 731 1885, eparmasto@yahoo.com. HOME ADDRESS Uus 3-85, 50603 Tartu ESTONIA, Tel: +372 740 2772. Married, two sons and three daughters.

**Arvo PÄRT**, born 11.09.1935, elected 2011, music. Estonian Academy of Music and Theatre 1963. Freelance composer in Estonia (2005); International Arvo Pärt Centre, Aliina, Laulasmaa 76702 Keila vald, Harjumaa ESTONIA, Tel: +372 604 0470, info@arvopart.ee. Married.

**Martti RAIDAL**, born 26.02.1968, elected 2011, exact sciences. University of Helsinki 1995. Research Professor, Estonian Academy of Sciences (2009); Rävälä 10, 10143 Tallinn ESTONIA, Tel: +372 645 4711, Fax: +372 644 0640, martti.raidal@cern.ch. HOME ADDRESS Vene 10-3A, 10123 Tallinn ESTONIA. Married, two sons.

**Anto RAUKAS**, born 17.02.1935, elected 1977, geology. University of Tartu 1958. Senior Researcher, Institute of Ecology at Tallinn University (2010); Uus Sadama 5, 10120 Tallinn ESTONIA, Tel: +372 619 9833, Fax: +372 619 9801, anto.raukas@mail.ee. HOME ADDRESS Trummi 32N, 12617 Tallinn ESTONIA, Tel: +372 672 6031. Married, two daughters.

**Jaan ROSS**, born 5.04.1957, elected 2003, humanities. Estonian Academy of Music and Theatre 1980. Professor of Musicology Department, Estonian Academy of Music and Theatre (1995); Rävälä pst 16, 10143 Tallinn ESTONIA, Tel: +372 522 6886, jaan.ross@gmail.com. HOME ADDRESS Koidu 122-61, 10139 Tallinn ESTONIA, Tel: +372 648 1544. Married, daughter.

**Huno RÄTSEP**, born 28.12.1927, elected 1981, Estonian language. University of Tartu 1951. Professor emeritus, University of Tartu (1994). HOME ADDRESS Uus 36-74, 50603 Tartu ESTONIA, Tel: +372 742 3974, hunoratsep@gmail.com. Married, son and daughter.

**Enn SAAR**, born 04.03.1944, elected 2010, astronomy. University of Tartu 1967. Senior Researcher, Tartu Observatory (1995); Observatooriumi 1, Tõravere, 61602 Tartumaa ESTONIA, Tel: +372 5344 0899, saar@aai.ee. HOME ADDRESS Tiigi 2-2, Tõravere, 61602 Tartumaa ESTONIA, Tel: +372 741 0462. Widower, daughter.

**Peeter SAARI**, born 2.06.1945, elected 1986, physics. University of Tartu 1968. Professor of wave optics, University of Tartu (1997); Riia 142, 51014 Tartu ESTONIA, Tel: +372 737 5856, +372 737 4611, Fax: +372 738 3033, peeter.saari@ut.ee. HOME ADDRESS Fortuuna 1-45, 50603 Tartu ESTONIA, Tel: +372 510 9018. Married, two daughters.

**Mart SAARMA**, born 29.06.1949, elected 1990, molecular biology. University of Tartu 1972. Academy Professor (2009), Director of the Finnish Centre of Excellence in Molecular and Integrated Neuroscience Research, Institute of Biotechnology, University of Helsinki (2008); P.O. Box 56, Viikinkaari 9, FI-00014, Helsinki, FINLAND. Tel: +358 9 191 59378, Fax: +358 9 191 59366, mart.saarma@helsinki.fi. HOME ADDRESS Kulosaaren puistotie 38A4, FI-00570 Helsinki, FINLAND, Tel: +248 9 684 5721. Cohabitant, son and daughter.

**Valdur SAKS**, born 3.09.1943, elected 1993, biochemistry. Moscow State University 1967. Head of Laboratory of Bioenergetics, National Institute of Chemical Physics and Biophysics (1993); Akadeemia tee 23, 12618 Tallinn ESTONIA Tel: +372 639 8363, Fax: +372 639 8313, saks@kbfi.ee. HOME ADDRESS Rävåla pst 13-3, 10143 Tallinn ESTONIA, Tel: +372 644 8643. Married, daughter.

**Arved-Ervin SAPAR**, born 7.02.1933, elected 1990, astrophysics. University of Tartu 1957. Senior Researcher, Department of Astrophysics, Tartu Observatory (2004); 61602 Tõravere, Tartu maakond ESTONIA, Tel: +372 741 0465, Fax: +372 741 0205, sapar@aai.ee. HOME ADDRESS Tiigi 6-6, 61602 Tõravere, Tartu maakond ESTONIA, Tel: +372 741 0335. Married, son and daughter.

**Karl SIILIVASK**, born 20.01.1927, elected 1977, history. University of Tartu 1951. HOME ADDRESS Näituse 22-13, 50407 Tartu ESTONIA, Tel: +372 5802 7190. Married, son.

**Tarmo SOOMERE**, born 11.10.1957, elected 2007, engineering. Moscow State University 1980. Leading Research Scientist, Head of Wave Engineering Laboratory (2009), Institute of Cybernetics at TUT, Professor of coastal engineering (2005), Tallinn University of Technology; Akadeemia tee 21, 12618 Tallinn ESTONIA, Tel: +372 620 4176, Fax +372 620 4151, soomere@cs.ioc.ee. HOME ADDRESS Trummi 30g, 12617 Tallinn ESTONIA, Tel: +372 502 8921. Cohabiter, two sons.

**Martin ZOBEL**, born 25.02.1957, elected 2010, ecology. University of Tartu 1980. Professor of plant ecology, University of Tartu (1992); Lai 40, 51005 Tartu ESTONIA, Tel: +372 737 6223, Fax: +372 737 6222, martin.zobel@ut.ee. HOME ADDRESS Vikerkaare 36, 51006 Tartu ESTONIA. Cohabitant, son and three daughters.

**Hans-Voldemar TRASS**, born 2.05.1928, elected 1975, botany and ecology. University of Tartu 1952. Professor emeritus, University of Tartu (1994); Lai 38, 51005 Tartu ESTONIA, Tel/Fax: +372 737 6222. HOME ADDRESS Riia 13-39, 51010 Tartu ESTONIA, Tel: +372 742 0481, +372 529 6835, hans.trass@mail.ee. Married, son and daughter.

**Peeter TULVISTE**, born 28.10.1945, elected 1994, humanities and social sciences. Moscow State University 1969. Professor of cultural psychology, University of Tartu (1992); Tiigi 78, 50410 Tartu ESTONIA, Tel: +372 503 3659, peeter.tulviste@ut.ee. HOME ADDRESS Sihi 25, 50411 Tartu ESTONIA, Tel: +372 730 4706. Married, son and daughter.

**Enn TÕUGU**, born 20.05.1935, elected 1981, informatics. Tallinn University of Technology 1958. Leading Researcher, Institute of Cybernetics at Tallinn University of Technology (2005); Akadeemia tee 21, 12618 Tallinn ESTONIA, Tel: +372 620 4212, tyugu@cs.ioc.ee. HOME ADDRESS Lossi 18/Soone 3-18, 12616 Tallinn, ESTONIA, Tel: +372 672 6526. Married, son and two daughters.

**Raimund-Johannes UBAR**, born 16.12.1941, elected 1993, computer science. Tallinn University of Technology 1966. Professor of computer engineering and diagnostics, Tallinn University of Technology (2005), Raja 15, 12618 Tallinn ESTONIA, Tel: +372 620 2252, Fax: +372 620 2253, raiub@pld.ttu.ee. HOME ADDRESS Öismäe tee 45-77, 13514 Tallinn ESTONIA, Tel: +372 657 4732. Married, daughter.

**Raivo UIBO**, born 21.12.1948, elected 2003, medicine. University of Tartu 1973. Professor of immunology, University of Tartu (1992); Ravila 19, 51014 Tartu ESTONIA, Tel: +372 737 4231, Fax: +372 737 4232, raivo.uibo@ut.ee. HOME ADDRESS Taara pst 28, 51006 Tartu ESTONIA, Tel: +372 742 1150. Married, son and two daughters.

**Jaan UNDUSK**, born 14.11.1958, elected 2007, humanities. University of Tartu 1982. Director, Under and Tuglas Literature Centre of Estonian Academy of Sciences (2000); Roosikrantsi 6, 10119 Tallinn ESTONIA, Tel: +372 644 3147, Fax: +372 644 0177, jaan@utkk.ee. HOME ADDRESS Lätte 5-10, 10116 Tallinn ESTONIA, Tel: +372 644 7565. Married, three daughters and son.

**Mart USTAV**, born 16.07.1949, elected 2001, biomedicine. University of Tartu 1972. Assistant President, Estonian Academy of Sciences (2009); Kohtu 6, 10130 Tallinn ESTONIA, Tel: +372 645 2528, Fax: +372 645 1805, mart.ustav@ut.ee. HOME ADDRESS Jaama 58A, 50604 Tartu ESTONIA, Tel: +372 740 3312. Married, son and three daughters.

**Tarmo UUSTALU**, born 19.01.1969, elected 2010, computer science. Tallinn University of Technology 1992. Lead. Researcher, Institute of Cybernetics at Tallinn University of Technology (2009); Akadeemia tee 21, 12618 Tallinn ESTONIA, Tel: +372 620 4250, Fax: +372 620 4151, tarmo@cs.ioc.ee. HOME ADDRESS Kalda 60A-5, 10922 Tallinn ESTONIA, Tel: +372 672 1215. Married, son and two daughters.

**Gennadi VAINIKKO**, born 31.05.1938, elected 1986, mathematics. University of Tartu 1961. Professor emeritus, University of Tartu (2006); Liivi 2, 50409 Tartu ESTONIA, Tel: +372 737 5490, gennadi.vainikko@ut.ee. HOME ADDRESS Kivi 23-19, 51009 Tartu ESTONIA, Tel: +372 510 7101. Widower, two sons and daughter.

**Urmas VARBLANE**, born 20.07.1961, elected 2009, economics. University of Tartu 1984. Professor of international business and innovation, University of Tartu (2001); Narva mnt 4, 51009 Tartu ESTONIA, Tel: +372 737 6361, Fax: +372 737 6327, urmas.varblane@ut.ee. HOME ADDRESS A. Starkopfi 11-6, 51011 Tartu ESTONIA, Tel: +372 733 1006. Married, son and two daughters.

**Eero VASAR**, born 17.09.1954, elected 2010, medical sciences. University of Tartu 1979. Head of the Department of Physiology (1991), Professor of physiology, University of Tartu (1992); Ravila 19, 50411 Tartu ESTONIA, Tel: +372 737 4331, Fax: +372 737 4332, eero.vasar@ut.ee. HOME ADDRESS Hurda 27, 51005 Tartu ESTONIA. Married, four sons.

**Mihkel VEIDERMA**, born 27.12.1929, elected 1975, inorganic chemistry. Tallinn University of Technology 1953. Professor emeritus, Tallinn University of Technology (1997). mihkel.veiderma@akadeemia.ee. HOME ADDRESS Jääraku 54, 12015 Tallinn ESTONIA, Tel: +372 623 8757. Married, three daughters.

**Richard VILLEMS**, born 28.11.1944, elected 1987, biophysics. University of Tartu 1968. President, Estonian Academy of Sciences (2004); Kohtu 6, 10130 Tallinn ESTONIA, Tel: +372 644 2129, Fax: +372 645 1805, richard.villems@akadeemia.ee. HOME ADDRESS Pallase pst 126-3, 51013 Tartu ESTONIA. Married, son and daughter.

**Haldur ÕIM**, born 22.01.1942, elected 1994, humanities and social sciences. University of Tartu 1965. Professor emeritus, Extraordinary Senior Researcher, University of Tartu (2007); Ülikooli 18, 50090 Tartu ESTONIA, Tel: +372 737 5941, +372 737 6143, Tel/Fax: +372 737 5224, haldur.oim@ut.ee. HOME ADDRESS Hiie 12, 51006 Tartu ESTONIA, Tel: +372 742 2272. Married, son and two daughters.

## FOREIGN MEMBERS

**Richard R. ERNST** (Switzerland), born 14.08.1933, elected 2002, physical chemistry. Professor emeritus, Swiss Federal Institute of Technology, Zürich (1998). Laboratory of Physical Chemistry, ETH-Hönggerberg HCI, CH-8093 Zürich, Switzerland, Tel: +41 44 632 4368, Fax: +41 44 632 1257, ernst@nmr.phys.chem.ethz.ch. HOME ADDRESS Kurlistrasse 24, CH-8404 Winterthur, SWITZERLAND, Tel: +41 52 242 7807. Married, son and two daughters.

**Carl-Olof JACOBSON** (Sweden), born 24.04.1929, elected 1995, developmental biology. Professor emeritus, Uppsala University (1994). HOME ADDRESS N Rudbecksgatan 13, SE-75236 Uppsala, SWEDEN, Tel: +46 18 501 123, carl-olof.jacobson@ebc.uu.se. Married, two sons and daughter.

**Antero JAHKOLA** (Finland), born 05.02.1931, elected 1998, energy research. Professor emeritus, Helsinki University of Technology (1994). HOME ADDRESS Hiisikuja 4 D 24, FI-00730 Helsinki, FINLAND, Tel: +358 9 724 9144; +358 400 102302, antero.jahkola@elisanet.fi. Married, son and daughter.

**Charles Gabriel KURLAND** (USA/Sweden), born 14.01.1936, elected 1991, biochemistry. Professor emeritus, Uppsala University (2001), kurland@tele2.se. HOME ADDRESS Munkarpsv. 21, SE-24332 Höör, SWEDEN, Tel: +46 41 322 856. Married, three daughters.

**Jaan LAANE** (USA), born 20.06.1942, elected 1995, chemical physics. Professor, Texas A&M University (1976); Department of Chemistry, College Station, TX 77843-3255, USA, Tel: +1 979 845 3352, Fax: +1 979 845 3154, laane@mail.chem.tamu.edu. HOME ADDRESS 1906 Comal Circle, College Station, TX 77840, USA, Tel: +1 979 693 5171. Married, two daughters.

**Gérard A. MAUGIN** (France), born 02.12.1944, elected 2002, mechanics. Director of Research at French National Centre for Scientific Research (1979); Head, Institute Jean Le Rond d'Alembert (Mechanics, Acoustics, Energetics), University of Pierre and Marie Curie (2007). Institut Jean Le Rond d'Alembert, Université Pierre et Marie Curie, Tour 65-55, Case 162, 4 Place Jussieu, F-75252 Paris Cedex 05, FRANCE, Tel: +33 1 4427 5312, Fax: +33 1 4427 5259, gerard.maugin@upmc.fr. HOME ADDRESS 6 Allée des Feuillantes, F-94800 Villejuif, FRANCE, Tel: +33 1 4958 2049. Married.

**Grigori MINTS** (USA), born 7.06.1939, elected 2008, computer science. Professor, Stanford University (1991). Department of Philosophy, Building 90, Stanford University, Stanford, CA 94305-2155, USA, Tel: +1 650 723 2964, Fax: +1 650 723 0985, gmints@stanford.edu. HOME ADDRESS 1045 McGregor Way, Palo Alto, CA 94306, USA, Tel: +1 650 493 7181. Married, daughter.

**Els OKSAAR** (Germany), born 1.10.1926, elected 1998, linguistics. Professor, University of Hamburg (1967); Institut für Allgemeine und Angewandte Sprachwissenschaft, Universität Hamburg, Bogenalle 11, D-20144, Hamburg GERMANY, Tel: +49 40 42838 4761, Fax: +49 40 42838 3595, HOME ADDRESS

Parkberg 20, D-22397 Hamburg, GERMANY, Tel: +49 40 607 0803, Fax: +49 40 607 1795, oksaar@oksaar.com. Married, son.

**Jaak PEETRE** (Sweden), born 29.07.1935, elected 2008, mathematics. Professor emeritus, University of Lund (2000). Widower, cohabiter, two sons and daughter.

**Michael Godfrey RODD** (Great Britain), born 21.06.1946, elected 1995, process control and infotechnology. HOME ADDRESS 16 The Garlings, Aldbourne, Marlborough, Wiltshire, SN8 2DT, UNITED KINGDOM, Tel: +44 1672 541 571, +44 783 186 0199, mrodd@btinternet.com. Married, son and daughter.

**Matti SAARNISTO** (Finland), born 11.11.1942, elected 2008, geology. Member, Finnish Academy of Science and Letters (1995). HOME ADDRESS Mikonkatu 22 D 46, FI-00100 Helsinki, FINLAND, Tel: +358 400 209 351, matti.saarnisto@saunalahti.fi. Married, son and daughter.

**Helmut SCHWARZ** (Germany), born 06.08.1943, elected 2002, chemistry. President, Humboldt Foundation (2008); Professor, Technical University of Berlin (1978). Institut für Chemie, Sekr. C 4, Technische Universität Berlin, Strasse des 17. Juni 135, D-10623 Berlin, GERMANY, Tel: +49 30 3142 3483, Fax: +49 30 3142 1102, helmut.schwarz@mail.chem.tu-berlin.de. HOME ADDRESS Patschkauer Weg 15, D-14195 Berlin, GERMANY, Tel: +49 30 832 5246. Married, son.

**Jānis STRADIŅŠ** (Latvia), born 10.12.1933, elected 1998, physical chemistry and history of science. Chairman of Senate (2004), Latvian Academy of Sciences; Latvian Academy of Sciences, Akadēmijas laukums 1, LV-1050 Riga, LATVIA, Tel: +371 67 213 663, Fax: +371 67 821 153, stradins@lza.lv. HOME ADDRESS K.Valdemara 99-7, Riga, LV-1013 LATVIA. Married, two sons.

**Päiviö TOMMILA** (Finland), born 4.08.1931, elected 1991, history. Professor emeritus, University of Helsinki (1994), Fellow of the Academy of Finland (2004). HOME ADDRESS Kylätie 8 A, FI-02700 Kauniainen, FINLAND, Tel/Fax: +358 9 505 1523, paivio.tommila@aka.fi. Married, three sons and two daughters.

**Endel TULVING** (Canada), born 26.05.1927, elected 2002, psychology. Professor emeritus, University of Toronto (1992). HOME ADDRESS 45 Baby Point Cres-cent, Toronto, Ontario M6S 2B7, CANADA, Tel: +1 416 762 3736, tulving@psych.utoronto.ca. Married, two daughters.

**Henn-Jüri UIBOPUU** (Austria), born 11.10.1929, elected 1995, law. Honorary Professor, University of Salzburg (1995); Institut für Völkerrecht, Churfürstenstr. 2, A-5020 Salzburg, AUSTRIA, Tel: +43 662 8044 3656, Fax: +43 662 8044 135, henn-jueri.uibopuu@sbg.ac.at. HOME ADDRESS W.Hauthalerstr. 17, A-5020 Salzburg, AUSTRIA, Tel: +43 662 848 4962, Fax: +43 662 848 4964. Widower, son and daughter.

## **ESTONIAN ACADEMY PUBLISHERS**

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Established in 1994  
Address: Kohtu 6, 10130 Tallinn, ESTONIA  
<http://www.kirj.ee> or [www.eap.ee](http://www.eap.ee)  
Director: Ülo Niine, Tel: +372 645 4504,  
Fax +372 646 6026, [niine@kirj.ee](mailto:niine@kirj.ee)



Estonian Academy Publishers continued in 2011 regularly issuing nine scientific journals, peer-reviewed and indexed and abstracted in international review publications and databases.

The Publishers' main mission has been to maintain a high standard as regards the contents of journals, their typographic performance, timely release and electronic version of all journals, besides hard copy.

In 2011 the journals were issued in the following volume:

Title	Number of issues per year	Total volume in printed sheet
Acta Historica Tallinnensia	2	20.0
Estonian Journal of Archaeology	2	11.0
Estonian Journal of Earth Sciences	4	29.5
Estonian Journal of Ecology	4	20.6
Estonian Journal of Engineering	4	23.6
Linguistica Uralica	4	20.0
Oil Shale	5	34.6
Proceedings of the Estonian Academy of Sciences	4	35.5
Trames	4	26.3
Total	33	221.1

Journals are internationally peer-reviewed and have international editorial boards. They are recognised as such by Estonian Science Foundation and Science Competence Council. Seven journals belong to category 1.1 and two journals to category 1.2.

Information on journals is electronically available at website of the Estonian Academy Publishers; starting from 2006, the website of the Publishers offers free access to full texts of all articles of all journals. Full texts of journals are available in well known electronic publishers: EBSCO, C.E.E.O.L., The Gale Group Inc., ProQuest LLC, H.W.Wilson (four journals), Digital Publication with the Leading Asian Distributor (Airiti Inc.). The majority of journals are reviewed in Elsevier BV Bibliographic Database (SCOPUS®).

Texts of articles of earlier vintages of our journals have been digitised and placed in Internet through mediation of Google. Respective links have been made from the Publishers' website.

All scientific articles of the journals have been supplied with the doi-indexes (Digital Object Identifiers).

Such availability of full text in multiple places creates better opportunities for review of articles, increasing readership and rate of citation.

The articles published in journals are reflected in scores of international review journals, scientific websites and databases. The latter are replenished by the day. In what follows are some of the most authoritative, we will highlight them one more time, because the Publishers keep receiving relevant questions.

As of now, 7 journals among them are reflected in the ISI Web of Science databases:

- Acta Historica Tallinnensia
- Estonian Journal of Archaeology
- Estonian Journal of Earth Sciences
- Linguistica Uralica
- Proceedings of the Estonian Academy of Sciences
- Oil Shale (incl. in Current Contents®)
- Trames. A Journal of the Humanities and Social Sciences

As from this year, the articles of the journal Estonian Journal of Ecology have been reviewed in database ISI Web of Knowledge. Unfortunately Science Foundation takes into account only the journals in ISI Web of Science, but now there is a glimpse of hope to attain that ultimate goal.

Three journals are in the database ERIH:

- Acta Historica Tallinnensia
- Estonian Journal of Archaeology
- Linguistica Uralica

Eight journals are in Elsevier BV Bibliographic Database (SCOPUS®) and elsewhere.

In 2011 as usual several special issues of journals were released. It is an internationally recognised way to publish the materials of international conferences, providing an opportunity to document in a compacted way the results of research in certain problems related to Estonia. There were the following special issues released:

1. Acta Historica Tallinnensia 2011/17: Special issue on the basis of papers of conference "Voluntary and Forced Migration". Guest editor Aivar Jürgenson.
2. Estonian Journal of Archaeology 15/2: Special issue on the culture of death. Editor Valter Lang.



3. Estonian Journal of Ecology 60/2: Contributions dedicated to the 90th anniversary of the Estonian Ornithological Society. Guest editor Asko Lõhmus.
4. Estonian Journal of Engineering 17/1: 7. Selected papers of the 7<sup>th</sup> International Conference of DAAAM Baltic, Industrial Engineering. Guest editors Rein Küttner and Tauno Otto.
5. Estonian Journal of Engineering 17/2: Special issue on electronics: selected topics of the 12<sup>th</sup> Baltic Electronics Conference BEC2010. Guest editor Mart Min.
6. Estonian Journal of Engineering 17/3: Special issue on electronics: selected topics of the 12<sup>th</sup> Baltic Electronics Conference BEC2010. Guest editor Mart Min.
7. Estonian Journal of Engineering 17/4: Special issue on oceanography, meteorology and coastal engineering. Guest editors Sirje Keevallik and Tarmo Soomere.
8. Oil Shale 28/1S: Present and Future of Oil Shale Based Energy Production in Estonia. Guest editor Aadu Paist.
9. Trames 15/2: Special Issue in Neuroethics.

In 2011, in total 240 pieces of writing were released in 33 issues of nine journals, of them 206 scientific articles and 34 short pieces of writing. All journals (in hard copy) appeared under schedule. The electronic version appeared on average not less than one month prior to the date set for the hard copy, actually meaning pre-posting.

The number of authors totalled 533, of whom 344 were Estonian authors and 189 foreign authors.

Besides journals, there appeared as commissioned works four more works.

“Estonian researchers and engineers abroad. Vahur Mägi and Anne Valmas (hard cover, 296 pp.).

“An introduction to phytotherapy”. Udo Margna (paperback, 88 pp.). It is the beginning of a larger monograph.

Continued the release of the series “Natural heritage”. Appeared Natural Heritage of Estonia. Part 22. H. Kink. Harjumaa – Raplamaa. Kohila karst area, Kose, Kohila.

For several years we had published the Year-book of the Estonian Mother Tongue Society. Since 2011 we started issuing the yearbook electronically. The yearbook has the net version ISSN number, the articles have been attached doi numbers and full texts of all articles are freely available on Publishers’ website.

The Division of Humanities and Social Sciences of the Estonian Academy of Sciences raised the question that the Publishers should implement the web-based system of acceptance of articles. That issue and other publishing related

issues were discussed at two sessions of the Board and in the management bodies of the journals. The Publishers accept the articles in an Internet-based way, however not with the help of a special system. The majority of senior editors and editorial boards of the journals are content with the state as it is, in view of the fact that the Publishers are relatively small and the number of articles as per journal moderate. The Academy submitted an application for information technology related investments of the Publishers (over half of the computer and software stock is so antiquated that it defies the newest applications) for obtaining extra money for 2012, however deplorably the application was dismissed. Planned for 2012 is to apply a web-based freeware acceptance system for the journal *Trames*.

Judging by achievements, the year of 2011 was successful in all aspects. We would like to especially emphasise the opinion of the Board (Minutes no. 5-7. June 2011): “To bestow recognition on Estonian Academy Publishers for excellent results at issuing journals on international level.”

By reason of scarce funding, the Publishers stretched to the breaking point in their publishing effort, in jeopardy are acquisitions of soft- and hardware and other equipment.

# **UNDER AND TUGLAS LITERATURE CENTRE OF THE ESTONIAN ACADEMY OF SCIENCES**

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Established in 1993 (affiliate museum in Nõmme, the former Friedebert Tuglas Museum, established in 1971)

Personnel: 16, including 11 researchers

Address: Roosikrantsi 6, 10119 Tallinn, ESTONIA, [utkk@utkk.ee](mailto:utkk@utkk.ee)

Museum: Väikese Illimari 12, 11623 Tallinn, ESTONIA, [tuglas@utkk.ee](mailto:tuglas@utkk.ee)

<http://www.utkk.ee>

Director: Jaan Undusk, Tel: +372 644 3147, Fax +372 644 0177,

[jaan@utkk.ee](mailto:jaan@utkk.ee)

Academic Secretary: Eneken Laanes (until March 31, 2011)

Riina Oruaas (since April 1, 2011) Tel: +372 644 3147,

[riina@utkk.ee](mailto:riina@utkk.ee)

Head of the Museum Department: Eha Rand, Tel: +372 672 2847,

[eharand@utkk.ee](mailto:eharand@utkk.ee)

Under and Tuglas Literature Centre of the Estonian Academy of Sciences (UTLC) is an institution of research and development of the Estonian Academy of Sciences. Its mission is to study Estonian literature and the local written culture in general, both in historical and theoretical perspectives, within the context of historically multilingual Baltic space as well as world literature. It promotes literary and cultural thought in line with contemporary trends in textual research (discourse analysis, rhetorico-narratological models of culture, postcolonial theory and the theory of cultural transfer, memory and gender studies). Under scrutiny beside fiction and theatrical texts are various historiographical, philosophical, publicist and scientific modes of self-expression in Estonian and German, insofar as they have played a decisive role in the Baltic literary space, as well as relevant texts of European history of ideas, which have influenced the course of thinking both in the universal embrace and in the Baltic. In this context, the history of certain basic concepts and models of thought of the whole of Europe is considered (e.g. tradition of antithetic thinking, the concept of infinity).

In the process of its developmental activities, Literature Centre publishes original researches and source materials of Estonian written culture, maintains the book and art collection of historical value, organises conferences, exhibitions and cultural events of general importance (the ceremony of F.Tuglas' prize for the best Estonian short story, events of the Scientists' House etc.).

The Museum Department of the Literature Centre in Nõmme administrates the legacy of the writer Friedebert Tuglas, Member of Academy, and other collections, (incl. F.Tuglas' library and art collection, and the library and art collection of Artur Adson and Marie Under, which arrived in Estonia in 1996, the art collection of the Estonian Cultural Foundation in the USA (donated to the Literature Museum in 2007), altogether 53 528 archival holdings, as well as the house and garden attached to it, carries out lecture-excursions and serves individual researchers and visitors.

The major areas of research of the Literature Centre are:

- Estonian literature and culture in the 20<sup>th</sup> C. (including works of F.Tuglas, M.Under and A.Adson),
- Older Estonian and Baltic German written culture in the 13<sup>th</sup>-19<sup>th</sup> C., German legacy in the development of modern Estonian culture,
- Mechanisms of creation of identity of the Estonian written culture (spontaneous and transfer of culture),
- Baltic literary space and Estonian-Latvian literary relations,
- Rhetorico-narratological models for description of European and Estonian culture,
- Drama and theatre research.

Since 2008, Literature Centre has fulfilled the targeted financing project "Autogenesis and Transfer: The Development of Modern Culture in Estonia" (2008-2013, project leader J.Undusk). In 2011 were continued the activities in fulfilling general aims of the project and also individual research topics of the UTLC researchers.

In 2011, the Estonian Science Foundation grant funding project "Historical Novel as Medium of Cultural Memory", supervised by E.Laanes, was initiated with the aim of writing the history of the genre of the historical novel in Estonian literature, by considering it as medium of cultural memory. During 2011, preparations were made to organize the conference "Historical Novel: Poetics and Politics" in 2012, two scientific seminars on the topic "Historical Novel, Cultural Memory, Estonia", and jointly with Finnish Literary Society the international seminar "Novels, Histories, and Novels Nations: Finnish and Estonian Historical Fiction and Historiography" in Helsinki on December 8-9 were held. The members of the grant team are literary researchers of UTLC, Estonian Literary Museum and Tallinn University.

In 2011, UTLC organized several local and international scientific events.

September 16-18 – in cooperation with the Estonian Goethe Society was organized the 6<sup>th</sup> International Symposium on Baltic German Literary Culture at Tartu "Das literarische Feld des Baltikums – Strukturen und Wirkungsmechanismen" (main organizer Liina Lukas).

October 28-30 – The 9th Conference of Baltic Literary Scholars in Tallinn “From Past to Present: Transformations of Memory in Contemporary Culture” (main organizer Anneli Mihkelev). The series of conferences of Baltic literary scholars is a long-term cooperation project of Under and Tuglas Literature Centre with Institute of Literature, Folklore and Arts of the Latvian University and Lithuanian Institute of Literature and Folklore.

Jointly with Graduate School of Culture Studies and Arts, Literature Centre participated in organizing interdisciplinary graduate studies: on January 31 to February 6, the winter school “Time and Temporality: Categories, Models and Narratives” in Tartu; and on May 20-22, the seminar “Spring School in Environmental History: Co-formation of Human and Natural Communities: An Environmental Historical Perspective” took place on Muhu island (organizers E. Laanes, Ulrike Plath et. al).

The 5<sup>th</sup> Seminar on Modern Estonian Literature on A.H.Tammsaare’s “Judith” (1921) was held on May 27-28 in Käsmu, in the Writer’s and Translator’s House of the Estonian Writers Union (Mirjam Hinrikus, Piret Kruuspere, R.Oruaas).

In 2011, regular theoretical seminars by UTLC researchers continued. E.Laanes and L.Kaljundi organised two seminars on the topic “Historical Novel, Cultural Memory, Estonia”, individual seminars were held on the following subjects: “Cultural Geography as a Possible Approach in the Estonian Literary Studies” (Õne Kepp), “Three Examples of Madis Kõiv’s Memory Dramaturgy: “Return to the Father”, “Scenes from the Hundred Years War” and “Endless Coffee Drinking”” (P.Kruuspere), “Literary Text in Creating Identity” (A.Mihkelev), “The Third Lecture on Infinity: Renaissance from the aspect of cultural typology” (R.Undusk). On November 2, in the Museum Department of UTLC took place Artur Adson’s Day and seminar “Päivlik iin nink taivas takan... Five Views on Artur Adson’s Work”, which focused on Artur Adson’s literary heritage and literature in the Southern Estonian language (Õ.Kepp).

Several events were held to celebrate Friedebert Tuglas’ 125<sup>th</sup> anniversary: March 2 – a festive colloquium in Estonian Writers’ Union “Dreams of Reality. Friedebert Tuglas 125, Karl Rumor-Ast 125”, dedicated to life, work and travelogues of Friedebert Tuglas and Karl Rumor-Ast (main organizer J.Undusk). March 2 – reception on occasion of anniversary of the Corresponding Member of Academy Friedebert Tuglas to Members of Academy and the Academy personnel in the last home of the writer in Nõmme at Museum Department of the Literature Centre.

September 15-October 4 – exposition opened at Vabaduse Gallery “Travelling Souls. Ado Vabbe and Friedebert Tuglas”, curator and designer art researcher Jüri Hain. Exposition presented an overview of A.Vabbe’s works in UTLC art collection, the majority of which belong to Tuglas’ heritage. This collection is

to our knowledge the only one that includes all three Ado Vabbe's linocut albums, the first one from 1919, the second and the third one completed in 1920. In the exhibition were presented one of the oldest preserved works by Ado Vabbe, the "Dance", completed in 1912, and also "Leatherstocking Motive" belonging to Vabbe's latest works (1938). Between these two temporal landmarks, there are book illuminations and cover designs from the inspiring period of Siuru, the mentioned linocuts, and drawings made in Paris in 1924. There were also displayed all publications of F.Tuglas and M.Under illustrated by Vabbe; and Vabbe's cover designs and illustrations made for works of Hendrik Adamson, Artur Adson, August Alle, Johannes Barbarus, August Gailit, Johannes Semper, Gustav Suits, Henrik Visnapuu and many others.

In 2011, several publications were released by researchers of Under and Tuglas Literature Centre. Harrassowitz Publishing House printed U.Plath's monograph "Esten und Deutsche in den baltischen Provinzen Russlands: Fremdheitskonstruktionen, Lebenswelten, Kolonialphantasien 1750-1850".

M.Hinrikus defended the doctoral thesis "The experience of decadent modernity in the texts of A.H.Tammsaare and Young-Estonia" in the Institute of Cultural Research and Fine Arts in University of Tartu. J.Undusk and L.Lukas compiled and edited the special volume of Baltic-German literary culture of the journal "Language and Literature" (2011, no. 8-9, 160 pp.). In collaboration with the Estonian Literary Museum the Literature Centre released the 3<sup>rd</sup> volume of "Works" by Fr.R.Faehlmann (compilers Kristi Metste, J.Undusk, Marju Lepajõe, 453 pp.).

Literature Centre published the collection of the 6<sup>th</sup> symposium on Baltic German literary culture "Umweltphilosophie und Landschaftsdenken im baltischen Kulturraum. Environmental Philosophy and Landscape Thinking" (*collegium litterarum* 24, ed. by L.Lukas, U.Plath, Kadri Tüür, J.Undusk). The collection is bilingual, in English and German, the book is also available as e-publication.

Within framework of the project "Friedebert Tuglas 125" two publications were released: A.Adson's and F.Tuglas' correspondence under the title "Correspondence of Page and Felix 1917-1944" (compiled and commented on by A.Eelmäe, edited and complemented by Ü.Kurs, Õ.Kepp, 614 pp.), and the research-based catalogue of the exposition "Journey of Souls. Ado Vabbe and Friedebert Tuglas" (The Collections of Cultural History of the Under and Tuglas Literature Centre, Vol. 5, 96 pp., compiled by E.Rand). Texts in the catalogue were written by J.Hain, Enn Lillemets, E.Rand.

Literature Centre published Lydia Koidula's collection "Perùamaa viimne inka. Valimik jutte" ("Peruvian Last Inca. Selection of Stories", 351 pp., compiled by Hilve Rebane, edited by R.Undusk), featuring the stories about freedom by Koidula anew appearing in print after the lapse of over 130 years.

In 2011 researchers of the Literature Centre delivered 34 scientific papers, of which 22 at international scientific events, among others the conferences “Transfers, Appropriations and Functions of Avant-Garde in Central and Northern Europe, 1909-1989” (Paris), “Dislocating Literature. Transnational Literature and the Directions of Literary Studies in the Baltic Sea Region” (Stockholm), “EU FTA & Baltic States: The 1<sup>st</sup> Baltic International Symposium 2011” (Pusan), “Hamlet and Poetry” (Cardiff), “Satire and Grotesque in Post/Modern Central and Eastern European Literature” (Vilnius), “Encounters of Sea and Land: 6<sup>th</sup> ESEH Conference” (Turku), “Comparing Apples, Oranges, and Cotton: Environmental Histories of the Plantation” (München), “Tradition und Internet. Tallinn – Kulturhauptstadt Europas 2011” (Berlin), “Der ‘Ungläubige’ in der Rechts- und Kulturgeschichte des 18. Jahrhunderts” (Heidelberg), “Recollecting and Mediating Food Culture: Individual and Institutional Perspectives” (Tartu), “Von Fleming bis Kotzebue. Sprach-, Literatur- und Kulturkontakt im Baltikum” (Tallinn); winter school “Time and Temporality: Categories, Models and Narratives”. Workshop “Cultural Memory and the Archive: Selection, Conservation, Transformation” (Tartu), summer school “Co-formation of Human and Natural Communities: An Environmental Historical Perspective. Graduate School of Culture Studies and Arts” (Muhu), and the conferences organized by the Literature Centre “From Past to Present: Transformations of Memory in Contemporary Culture” (Tallinn), 6<sup>th</sup> International Symposium on Baltic German Literary Culture “Das literarische Feld des Baltikums – Strukturen und Wirkungs-mechanismen” (Tartu).

In 2011 the researchers of the Literature Centre published 14 scientific articles in foreign languages and 17 scientific articles in Estonian.

Researchers of the Literature Centre are involved in cooperation with Estonian universities in supervising and reviewing BA, MA and PhD theses and delivering courses. They participate in the work of academic council of the Academic Library of Tallinn University and in completing the collections of the Library as well as these of the Estonian National Library.

Within the framework of the national development programme “Estonian language and national memory”, the Museum Department is fulfilling the scientific project “Intellectual Heritage of Marie Under and Friedebert Tuglas” (2009-2013, supervisors of the project Õne Kepp, Elle-Mari Talivee). In 2011 the researchers worked on volumes 11 and 12 of the “Collected Works” of F.Tuglas. The volume 11 includes the volumes 9 and 10 of Tuglas’s “Criticism”. The critical edition and the afterword were prepared by M.Jõgi. Work continued on Tuglas’s monograph “Juhan Liiv” (volume 12).

Until 2008 the work with the collections of cultural history was carried out by the Literature Centre within the framework of national development programme “Collections of the Humanities and Natural Sciences”. Since 2009

the works with collections have been funded directly from budget of Ministry of Education and Research.

The Literature Centre is presenting constantly the heritage of the writers having resided in the house of Museum Department. In 2011 there were added 1 120 entries in the database MuIS, altogether the data of 16 330 archival holdings have been entered. The database is available through Ministry of Culture server. Terms of use of collections of the Museum Department collections and Archival Library were updated; description of the scientific collection was entered into Estonian Research Portal.

In 2011, two larger collections of 66 books from family Reštšinski and of 423 books from the expatriate Estonian art critic Paul Reets from the USA were donated to UTLC Museum Departments Archival Library.

In the period of 01.01.11-02.09.11, the archival holdings of the Museum Department were used for research by 73 people, and 2 461 archival holdings were delivered to use. Besides that, book expositions were set up for the visiting groups, with 552 works on display. Using of archival holdings in total: 3 013 units.

Since 2011, the Museum Department is maintaining cooperation, with the aim to present the heritage of Tuglases, Under and Adson, with the Association of Estonian Writers' Museums and participates jointly with European partner organisations in the project Grundtvig Learning Partnership, "Comparing learning opportunities in the field of Literary Heritage 2011-2013". According to the project, the Museum Department has welcomed museum workers from Greece, Hungary and Finland in October 2011, presenting the Centre's collections.



## FINANCIAL ACTIVITIES

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The budget of the Estonian Academy of Sciences for 2011  
and its execution (EUR)

	Budget	Implemen- tation
<b>INCOME</b>		
ALLOCATIONS TO THE ACADEMY OF SCIENCES FROM		
THE STATE BUDGET	1 208 953	1 208 953
incl. basic activities of the Academy	834 750	834 750
fees to Members of Academy	253 090	253 090
fees to research professors	100 662	100 662
effecting National Science Prizes	20 451	20 451
OTHER REVENUE	448 738	448 828
Target allocations		
of Ministry of Education and Research (MER)	332 503	332 503
incl. membership fees	37 343	37 343
renovation of the Academy's house roof	294 313	294 313
Income from rent of rooms	20 100	20 184
Income from the analysis ordered by MER	45 135	45 135
Receipts from sale of printed matter and		
commissioned works (Academy Publishers)	51 000	51 006
ALLOCATIONS TO UNDER AND TUGLAS		
LITERATURE CENTRE	261 954	261 954
Through Ministry of Education and Research	240 404	240 404
incl. targeted financing of research	135 253	135 253
for infrastructure expenses	40 601	40 601
basic funding	26 254	26 254
for fulfilment of the state programme	37 236	37 236
for study loan	1 060	1 060
Appropriations for specific purposes	18 121	18 121
From sale of printed matter	3 429	3 429
<b>TOTAL INCOME</b>	<b>1 919 645</b>	<b>1 919 735</b>

## EXPENDITURES

### GENERAL BREAKDOWN

Main activities of the Academy (through Academy Office)	563 599	563 734
Estonian Academy Publishers	265 424	265 429
Fees of Members of Academy	253 090	253 090
Fees of research professors	100 662	100 662
Prizes, grants and medals	6 525	6 475
Prize for the students' research papers	6 500	6 451
Scientific Societies	70 302	70 302
Incl. Estonian Naturalists' Society	26 842	26 842
Mother Tongue Society	6 711	6 711
Estonian Geographical Society	5 816	5 816
Society of Estonian Areal Studies	5 113	5 113
Estonian Union of the Philosophy and History of Science	4 890	4 890
Estonian Literary Society	4 890	4 890
Learned Estonian Society	4 890	4 890
Estonian Musicological Society	4 890	4 890
Estonian Physical Society	4 890	4 890
Estonian Association of Engineers	1 370	1 370
Membership fees to international science organisations	37 343	37 343
Renovation of the Academy's house roof	294 313	294 313
National Science Prize Committee	20 451	20 451
For study loan	847	663
Analysis ordered by MER	45 135	45 135
Under and Tuglas Literature Centre	261 954	261 954
<b>TOTAL EXPENDITURES</b>	<b>1 919 645</b>	<b>1 919 551</b>

MAIN ACTIVITY OF THE ACADEMY (THROUGH ACADEMY OFFICE)		
Wages	253 000	252 406
Social tax and unemployment insurance premium	86 100	85 882
Office expenses	17 999	18 748
Maintenance expenses of the property and premises	116 900	117 698
Investments	5 300	5 274
Transport	9 400	9 343
Mission expenses	14 800	14 662
Representation and entertaining expenses	14 400	14 343
Young scientists and popularisation of science	15 600	15 590
Training expenses	500	431
Expenses for committees and divisions	1 800	1 737
Expenses for Foundation for International Exchanges	22 000	21 976
Juridical service, accounting and auditing	3 300	3 244
Publications, etc.	2 500	2 400
TOTAL EXPENDITURES OF THE OFFICE	563 599	563 734
ESTONIAN ACADEMY PUBLISHERS		
Wages	137 010	137 010
Social tax	47 131	47 131
Administration expenses	15 150	15 180
Printing expenses	19 633	19 621
Expenses related to commissioned work	46 500	46 487
TOTAL EXPENDITURES OF THE PUBLISHERS	265 424	265 429
UNDER AND TUGLAS LITERATURE CENTRE		
Wages	158 679	158 679
Social tax	54 570	54 570
Research and administration expenses	47 645	47 645
Study loan	1 060	1 060
TOTAL EXPENDITURES OF LITERATURE CENTRE	261 954	261 954

## **ASSOCIATED INSTITUTIONS**

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Pursuant to “Estonian Academy of Sciences Act” passed by the Riigikogu in 1997, the research, development and cultural institutions and scientific societies outside the structure of the Academy, whose activities and objectives however conform to the activities and objectives of the Academy can associate themselves with the Academy. The association of institutions with the Academy is effected under bilateral agreements, which specify the purpose of association as well as the tasks and commitments for both parties.

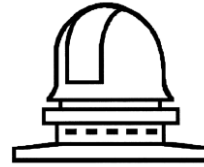
One form of cooperation between the Academy and the institutions associated with it is the reciprocal exchange of information. Surveys of the activities of the institutions associated with the Academy have been published in the Academy Year Book since 1998. Included reviews differ from one another by their structural composition, exposition and scope. They are practically presented in the same form as submitted, with minor modifications, suggested by the editorial board and kindly accepted by respective institution.

Reviews on the 2011 activities of the institutions associated with the Academy have been presented in the chronological order of their association date:

Tartu Observatory .....	111
Institute of Ecology at Tallinn University .....	114
Academic Library at Tallinn University .....	117
Institute of the Estonian Language .....	121
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Institute for International and Social Studies at Tallinn University. . .	129
Estonian National Museum .....	132
Jõgeva Plant Breeding Institute.. ..	137

## TARTU OBSERVATORY

Associated with the Estonian Academy of Sciences  
8.05.1998



Founded 1808

Personnel: 83, of whom 50 researchers, 12 engineers

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Head of Information Team: Mare Ruusalepp, Tel: +372 741 0261,  
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Tartu Observatory moved with personnel and whole apparatus and equipment out of its main building, handed over to builder for renovation on 8 August 2011. Although planning and packing in crates had been carried on for over a year, moving in summer still turned out somewhat unexpected; within a couple of months the working premises we all had taken to our heart had become ruins. Now we have settled down in temporary working premises in Tõravere, in our own ancillary buildings and in the building of Institute of Physics of the University of Tartu, however we are keenly following completion of the new building. There being a lot of work to do, we do not luckily notice much of the inconveniences caused by our present cramped conditions.

In 2011 Tartu Observatory fulfilled three target-financed research topics:

- “Dark energy, dark matter and formation of structure in the Universe“ (principal investigator E. Saar).
- “Observational and theoretical investigation of stars and their envelopes during evolutionary phases” (principal investigator T. Kipper).
- “Remote sensing of plant canopy” (principal investigator A. Kuusk).

The topic of remote sensing started in 2011 and it is part of a joint topic with Estonian Marine Institute of the University of Tartu “Solution of Global and Regional Problems with Optical and Remote Sensing Methods”.

In 2011, the Estonian Science Foundation supported the research work of Tartu Observatory with 3 research grants in astronomy and 3 grants in remote sensing.

Two young astronomers, one remote sensing specialist and one atmospheric physicist worked in the Observatory supported by post-doctoral and so-called mobilitas grants of Estonian Science Foundation.

Altogether published were 51 peer-reviewed research articles in international journals (of them 47 ETIS category 1.1 articles), plus 8 in conference volumes.

The development plan of the Estonian space area, worked out by Estonian space policy working group was included, upon initiative of Ministry of Economic Affairs and Communications, in supplement to the Estonian strategy of research, development and innovation, on the basis of which we formulated the strategic directions of our research activity in astronomy, cosmology, remote sensing and space technology together with experts from Estonia and abroad at the seminar “Modern Trends in Space Research”. We reached a common conclusion that the conformity with the needs of society is the main opportunity to realise our potential in growing a new generation of recognized space researchers and in development of modern technology. That need may manifest itself as a demand to support and launch science-intensive entrepreneurship, which we do through projects funded by European Space Agency and European Union, or a demand to carry out top-level fundamental research.

As token of great recognition to our cosmologists, also imposing responsibility on them, we launched the Centre of Excellence “Dark Matter in (Astro)particle Physics and Cosmology” in 2011 in cooperation with the Institute of Chemical and Biological Physics. Its objective is to enlarge the knowledge of man on the essence of dark matter.

Out of sub-programme “Modernizing the scientific apparatus and equipment of research and development institutions” of the EU structural supports “Application plan of development of economic environment” we kept in progress, besides renovation of the main building, also bringing the telescope towers into compliance with the fire safety requirements and increasing the level of access to them, and four projects related to modernising the apparatus: Complex laboratory of etalons of remote sensing; Modernising the control system of 1.5 m telescope; Laboratory of space technology; Satellite Earth station. Within the framework of target topic of star physics and remote sensing new apparatus will be procured.

Quite novel and entertaining were the preparatory activities for launching the objects of Roadmap of Infrastructure of Estonian Research. We prepared two initiatives for inclusion into internationalisation programme: Estonian participation in European South Observatory and Estonian participation in European Space Agency.

Tighter international relations inspire both the experienced and the young researchers. The Conference “Expanding the Universe” brought together in Tartu at the end of April the astronomers from 10 countries to discuss the change of cosmological paradigms over times and also put in sharp relief the outstanding role therein of researchers related to Tartu Observatory.

Extensive international cooperation took place through 3 EU and 2 European Space Agency projects:

EstSpacE: Expose capacity of Estonian space research and technology through high-quality partnership in Europe;

WaterS: Strategic partnership for improved basin-scale water quality parameter retrieval from optical Signatures;

ESAIL: Electric sail propulsion technology;

ORAQUA: Service-based optical radiometry applications for water environment;

GAIA: Classification of emission-line stars in Gaia catalogue.

For expansion of remote sensing methods, applications and cooperation network there were in progress 6 smaller Estonian and international agreements.

It is pleasant to mention that in that year, three young researchers defended their doctoral theses: Elmo Tempel, Joel Kuusk and Anti Hirv.

From amongst our workers several people have been elected ambassadors of Science Year, popularising natural and exact sciences and engineering, with the task to present their area of research to public and to motivate the young to elect profession in the areas related to modern sciences. Tartu Observatory continued to be a popular centre for visiting, although due to renovation reception of excursions was suspended as from 1 July. Before that time we managed to receive 99 groups with 2 500 persons interested; popularising goes on in website [www.astronoomia.ee](http://www.astronoomia.ee).

A thorough overview of activity of the Tartu Observatory is contained in Yearbook 2011 and also in the traditional Observatory calendar.

## **INSTITUTE OF ECOLOGY AT TALLINN UNIVERSITY**



Associated with the Estonian Academy of Sciences  
16.06.1998

Founded 1992

Personnel: 34, of whom 25 researchers

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Scientific and administrative secretary: Ludmilla Krusta, Tel: +372 619 9829,  
[milla.krusta@tlu.ee](mailto:milla.krusta@tlu.ee)

In 2011, scientific research was carried out within the framework of 49 topics of different levels and projects, incl. 2 target-financed projects by Ministry of Education and Research of Estonia, 4 Estonian Science Foundation grants (incl. 2 Mobilitas grants) and 34 applied cooperation agreements. Research work was also carried out within framework of 8 doctoral theses.

The institute participated in international cooperation projects and programmes, of which of wider scope were:

- II Post-POLLANDCAL – NordForsk Researcher network, a formal network of palynologists. 2005-
- LandClim – NordForsk Researcher network, Cooperation project of pollen, landcover and climate modellers for assessment of early human impact in North Europe. 2007-2011.
- COST Action FP0601: Forest Management and the Water Cycle (FORMAN). General project leader: Prof Michael Bredemeier, (Göttingen University, Germany). Professor Margus Pensa is member of working group WG1 (Expected changes in forest tree species composition and forest structures) and Elve Lode is member and moderator of working group WG3 (The different scales relevant in the assessment of forest-management-water relations). Duration of project: 2007-2011.
- Project of the programme FOMA of Swedish University of Agricultural Sciences: Eco-hydrological conditions and study of man made disturbances of mires identified by inventory programs of VMI and NILS. General project leader Elve Lode. Duration of project: 2009-2011.
- Swedish Research Council: Land cover-climate interactions in NW Europe 6 000 and 200 year BP (LANDCLIM 6000-200) – a novel model-data comparison approach. (PI: M.-J.Gaillard, Co-PIs: Shinya Sugita, B.Smith, M.Rundgren, and E.Kjellström). January 2009-December 2011.



- NordForsk (Nordic Research Council and Nordic Researcher Network) on The past LANDcover-CLIMate interactions in Scandinavia and NW Europe over the last 10000 years – LANDCLIM 10000, (PI: M.-J.Gaillard, Co-PIs: Shinya Sugita, B. Smith, E. Kjelistrom). January 2009-December 2011.
- IGBP (International Geosphere-Biosphere Programme) PAGES Focus4 PHAROS – Land Cover Working Group (leaders: M.-J.Gaillard, S.Mooney, and Shinya Sugita). June 2008-May 2023.
- COST Action ES0805: Terrestrial Biosphere in Earth System (TERRABITES). 2009-2013.
- Forestry and Water Network (ECOREGION, SKOGSSTYRELSEN) 2011-

The main research effort of the Institute was carried out within the framework of the following target financed projects:

Topic “Lake-level fluctuations during the postglacial period: causes and impact on lake ecosystems” (project leader Jaanus Terasmaa). The main results of 2011: By the example of the Kõrõ Lake it was found that when water level in the lake has long been relatively stable and has therefore not influenced the diatom flora of the body of water, the change of vegetation of the catchment area may be an important factor, changing also the diatom flora. An important place is held by lake topography of trough and catchment area. Analysis of macro remains of sediment core of the Kõrõ Lake confirmed early occurrence of spruce on Vidzeme highland already ca. 9 000 years back. With the help of REVEALS model, the landcover dynamics was reconstructed in three regions of Estonia. The results provide evidence that on regional scale, differentiation of compositions of landcover took place as late as during the recent 2 000 years and it is evidently related to anthropogenic influence. It was found that the changes in land use starting from 1860s which occurred in the process of laying the Elva town have left a mark in lithological composition of bottom sediment of the Verevi Lake and in the rate of accumulation, because since that time the accumulation of clastic matter increased from  $3 \text{ mg cm}^{-2} \text{ a}^{-1}$  to  $6 \text{ mg cm}^{-2} \text{ a}^{-1}$ . Laying the bathhouse and swimming area on eastern shore of the lake in 1929 accelerated the accumulation of clastic mineral matter even more – from  $6 \text{ mg cm}^{-2} \text{ a}^{-1}$  to  $11 \text{ mg cm}^{-2} \text{ a}^{-1}$ . The sediment cores taken from northern littoral part of the Verevi Lake confirmed that the organic matter originates mainly from algae (75-85%) and its accumulation is strongly related to accumulation of mineral matter ( $R^2 > 0,8$ ). Granulometric analysis shows that the finer-grain part of the sand transported to eastern shore of the lake spread more uniformly, transferring in the water body also to more distant parts of the lake. Results of the analysis of planted fossil pigments show that the changes in trophicity related to human activity started even earlier in some lakes than shown by human impact described historically or by data of monitoring. Spatio-temporal analysis of palaeo-indicators of surface sediment

of the L. Peipsi Suurjärv (lithology, diatomees, phosphorus, granulometric composition, and geochemistry) showed that in certain borderline conditions the sediment patterns of different indicators coincide. Due to episodic relocation of sediment the lake-level fluctuations in Peipsi Suurjärv do not leave a direct trace on changes of concentrations of mobile elements (like P) in lake sediment. However the results imply changes of circulation areas of streams during the recent 30 years, wherefore the cohesive sediments together with fossil diatoms concentrate in the middle of circulation sites.

Topic “Impact of disturbances on wetland ecosystems in Estonia” (project leader Margus Pensa). The main results of 2011: Variation of water levels calculated by reference to species composition of Testaceae (testate amoebae) communities, reconstructed with the help of transfer-function adopted to Estonian conditions in Selisoo survey site showed that water level has kept during 4 500 years on the depth of 20 cm. The more extensive water level fluctuations can be observed within the recent 500 years. Measurements of gas exchange of moss front of bogs of different disturbance level showed that the correlations between CO<sub>2</sub> and CH<sub>4</sub> emissions depend on structure of the moss front. Measurements made in West Estonia survey areas showed that the contemporary level of changes is up to 10 times larger than in 1950s. Heightened frequency of violent storms accompanied by high sea level does not leave enough time, in the intermittent periods between storms to smoothen out the destructions, wherefore every successive storm hits on the disbalanced coastal profile. Comparative survey of dune sand coasts of Estonia and Bulgaria shows the quickened decline of dunes caused by anthropogenic factors on coasts of both countries, whereas strong storms aggravated by high sea level cause the largest changes in landcover of Estonian dune sand coasts.

61 scientific articles were published by the staff members of the Institute in 2011, incl. 58 articles in peer reviewed international scientific publications. Besides, 15 abstracts of conference, plus 5 popular science articles came out. 18 papers were delivered at international conferences and meetings, 7 papers at national events and 30 papers at scientific seminars of the Institute.

The majority of applied researches were traditionally directed at advising in North-East Estonia the industrial enterprises how to adapt to environmental protection restrictions. To invigorate the research transfer the innovation ownership shares offered by Enterprise Estonia Foundation were used. The Institute participates in two regional centres of competence, the topics whereof are related to the Institute’s main activities. The Institute also focussed on anthropogenic climate changes for organising better management of services to wetland ecosystems having become more vulnerable due to anthropogenic factors.

Researchers of the Institute were actively involved in teaching at universities – by delivering lectures and supervising students and postgraduate students at Tallinn University as well as Euroacademy and the University of Tartu.

## **ACADEMIC LIBRARY OF TALLINN UNIVERSITY**



Associated with the Estonian Academy of Sciences  
17.06.1998

Founded 1946

Personnel: 121, of whom 4 researchers

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Director: Andres Kollist, Tel: +372 665 9401, Fax +372 665 9400,  
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Number of registered users 51 783

Number of copies in the circulating collection 2 551 707

2011 witnessed a number of significant developments regarding both the library and information services of the Academic Library and the R&D activities of the Library.

Two-day scientific conference and exposition marked the 65<sup>th</sup> anniversary of Academic Library of Tallinn University. On agenda at the scientific conference was the University Library on threshold of the 21<sup>st</sup> C. focussing on Estonian old books. The papers were delivered on the topics of Library as a developing organisation, quality of services, e-library and other issues of interest. The papers of the second day were dedicated to Tallinn 17<sup>th</sup> C. printed matter, watermarks in early modern Estonia, publishing efforts of Estonians in Russia etc. Delivery of papers could be followed, at the time they were presented, over Internet by mediation of the Library website. Open during the scientific conference were expositions in foyer of Academic Library, staircase and loaning hall. On display at expositions was the activity of a productive researcher of Estonian history of books Kyra Robert and the life story of Voldegar Miller, an outstanding historian and scientist of books.

In autumn 2011 there was issued, as edited by Academic Library, the Year Book 2010 of Union of Estonian Librarians.

In November 2010 the Academic Library carried out the survey of service quality. The poll was responded by 1 751 readers. The summaries of the survey were drawn in the first half of 2011. Assessed as good was the availability of information, service and environment quality. Appraised as excellent was the personnel's quality and promptness of service. The lowest was the estimate given to the availability of teamwork rooms. On grounds of the survey and reader comments the Library could critically analyse the services, servicing, rooms and information provided.

Jointly with Tallinn University Development Foundation, the May of 2011 witnessed the Night Library, already the seventh in succession. As an innovation, the specialist experts provided aid to students in the third floor reader workshop at finding the necessary study materials. There were 822 visitors after regular opening hours (in 2010 – 594 visitors). The visitors were asked to fill out a concise questionnaire. Over half of respondents to questionnaire were students of Tallinn University (64%), 8% of respondents came from Tallinn University of Technology, plus students of University of Tartu, Estonian Academy of Arts and Estonian Business School.

An essential innovation for readers in 2011 was simplification of access to information services offered by the Library. It is now possible to enter the electronic databases from outside the University computer network by use of Academic Library e-mail user name and password.

With the aim to providing standard quality, more productive and higher level trainings to students and researchers, two reviewers of Specialist Information Division – Kristi Mets and Triin Kaasik completed the 2-year study of accessory subject of Tallinn University Educational Sciences Institute – educator/andragogue of adults. Specialist Information Division replies to requests for topic, availability and fact, offers advisory service and reader training on three levels. Recommended as an original contact with library is presentation of the library to freshmen, the second level of training will acquaint the students with the library information resources. The third level training is designed primarily to those concerned with research work – under consideration is compiling of the search strategy, search opportunities in databases, creation and use of one's own account. Furthermore, the reviewers of the Specialist Information Division hold trainings and presentations also within the framework of curricula of the Institutes.

In the area of engineering development there was a breakthrough decision taken to transfer to a system basing on UHF RFID (Ultra High Radio Frequency Identification) wireless technology. In the process there were purchased two self-service automatons and the safety system of electronic book protection. The goal of innovation is to offer modern, expeditious, and handy service to the readers. New system will be launched in the first half of 2012.

Everything related to the problem-range of making available the e-book and e-textbook in Estonian has gained topicality in Estonian libraries. Actively involved in the work of ELNET Consortium's e-book roundtable, formed at beginning 2010 are also workers of Academic Library. The main bottleneck with different Estonian publishers is presently the installation of web access to books. The access with passwords offered by publishers is not convenient for libraries, because of the large number of simultaneous users. Representatives of libraries would like the access installed as IP address-based, like is done by large database producers in the whole world. IP address-based access is pre-

sently offered among Estonian publishers only by TEA. In the framework of Library Days in October, Academic Library organised the topical day of e-books, when e-readers were presented in the Library foyer and a public debate was held on the future of e-books. A review of the discussion round was published in the daily Postimees and the PR officer of Library Vahur Afanasjev authored a profound article “Impact of e-books on written culture” published in the weekly Sirp.

The collection of Library’s rare old books has been complemented with an item of printed matter heretofore unbeknown. Before 2010 there was no entry on that piece of printed matter either in Estonian libraries or the European old book database Heritage of Printed Book, consolidating information on old books deposited in European and North-American scientific libraries. The author is syndicus and town secretary David Heliconius active in Riga in the second half of 16<sup>th</sup> C. – being a most influential town politician of his time. In that printed matter David Heliconius dedicates a piece of poetry to his compatriot Henricus Bergius. It is the eulogy written on the occasion of defence of doctorate published in Heidelberg in 1584. That printed matter eight pages long arrived in Baltica collection of Academic Library of Tallinn University from Germany, where it was acquired through agency of an antiquary.

In 2011 the Library carried on with the earlier started research topics, on the basis whereof several papers were delivered and publications released. Rene Haljasmäe continued her research work on the topic “Incunables. Ratio of damage and restoration in books printed in 15<sup>th</sup> C.” As an output of research, autumn 2011 witnessed the completion of e-study object to students of Estonian Academy of Arts “Preparation of a copy from a volume of incunable”, several lectures were delivered and an article appeared on change over time of principles of conservation of incunables in the collection of Estonian Academy of Arts “Memory”. Anne Valmas continued research of culture and publishing activity of Estonians in exile within the framework of the research topic “Exile book in Estonian cultural picture”. Research work yielded the voluminous 296-page monograph “Estonian researchers and engineers abroad” (compiled by Vahur Mägi and Anne Valmas), several articles appeared in collections and magazines Library, Language and Literature and Tuna. There were delivered papers and lectures on various topics.

A modern scientific library, Academic Library must adjust itself to innovations and developments in the society. In the present day economical environment efficiency, performance management, activity-based management etc. are topical issues in every domain and they have become essential also in the context of Library. It has become a great challenge to manage procedures and processes with the same or lesser means so that the quality of result would not drop. In that connection a new research topic was opened in 2011 – Kate-Riin Kont and Signe Jantson started research in opportunities and needs of management for better results and more efficient running of public-law organisa-

tions with the research topic “Management and efficiency in public-law organisation (after the example of Academic Library)”, in the framework whereof there are analysed, among others the indicators related to quality management and personnel (contentment, performance, development of skills, motivation and involvement) in the context of organisation culture, and efficiency of library work, using the methods of complex analysis created by Member of Academy U. Mereste, the methods of activity-based cost accounting and performance indicators of library work. There were published articles as the outcome of research in 2011 in journals *Journal of Baltic Studies*, *Evidence Based Library and Information Practice Journal*, *Library*, *Year Book 2010 of Estonian Union of Librarians*, and there were delivered a number of papers at local conferences and those abroad.

Academic Library is member of international organisations *Bibliotheca Baltica* (Association of Libraries of Baltic Countries), *CERL* (Consortium of European Research Libraries), *EAHIL* (European Association for Health Information and Libraries), *ICOM* (International Council of Museums), *IFLA* (International Federation of Library Associations), *LIBER* (Association of European Research Libraries), *HIBOLIRE* (Nordic-Baltic-Russian Network on the History of Books, Libraries and Reading) and NGO Consortium of Estonian Libraries Network *ELNET*.

## **INSTITUTE OF THE ESTONIAN LANGUAGE**



Associated with the Estonian Academy of Sciences  
11.05.1999

Founded 1947

Personnel: 80, of whom 21 researchers

Lexicographers, terminologists and language planners 31

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Senior Researcher – Academic Secretary: Hille Pajupuu, Tel: +372 617 7500,  
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Institute of the Estonian Language has seven departments:

- Department of History of Language and Linguistics, Head Urmas Sutrop
- Department of Language Technology, Head Arvi Tavast
- Department of Finno-Ugric Languages and Dialects, Head until 11.09. Sven-Erik Soosaar, since 12.09 Mari Uusküla
- Department of Language Planning, Head Peeter Päll
- Dictionary Department, Head Margit Langemets
- Terminology Department, Head Tiina Soon
- Personnel and Administration Department, Head Kai Oro

### DEPARTMENT OF HISTORY OF LANGUAGE AND LINGUISTICS

In 2011 it fulfilled the target funded research topic “Word and concept in the development of Estonian vocabulary and place names” (2010-2014), supervised by Dr. Phil. Urmas Sutrop. Researchers studied formation of biblical terminology in Estonian and South Estonian, see also <http://portaal.eki.ee/piibel>. They identified the origin of Estonian cultural vocabulary, and relations with cognate and Indo-European languages. They studied empirically lexicalising of the blue region of colour space and possible cases of influence of Russian in Estonian. Released from print was “A book of colour terms”, edited and compiled by Mari Uusküla and Urmas Sutrop. When considering the place names, the intertwining of Finno-Ugric and Indo-European language matter was subjected to scrutiny.

Within framework of international cooperation, the vocabulary of Estonian sign language was collected and researchers participated in the work of Atlas of European languages.

Doctoral thesis was defended by Geda Paulsen “Causation and dominance: A study of Finnish causative verbs expressing social dominance” (Åbo Akademi) and Elena Ryabina “Основные цветоименования в пермских языках” (University of Tartu).

#### DEPARTMENT OF LANGUAGE TECHNOLOGY

In 2011 it fulfilled the target funded research topic “Modelling intermodular phenomena in Estonian“ (2009-2014), supervised by Dr. Meelis Mihkla.

In speech prosody the researchers applied interval-based metrics to speech rhythm, investigated the significance of the distinctive features of quantity, and the relations between word duration, contextual predictability and grammatical information, tested speech rate perception, developed rules for recognition of quantity and stress in speech synthesis.

For emotion detection, the researchers examined the prosody, vocabulary and emotional mood of sentences. Contextuality and lexical richness were used to differentiate between text types.

As to relations between vocabulary, grammar and semantics, the researchers described grammatical constructions, analysed the lexico-grammatical structure of the vocabulary, and studied the mechanisms of cognitive projection.

Heete Sahkai defended the doctoral thesis “The syntax of Estonian action nominalizations from the constructional perspective” (Tallinn University).

Three projects of the State programme “Estonian language technology (2011-2017)” were started:

- Statistical models of the emotionality of speech and written text, project leader Hille Pajupuu, see <http://peeter.eki.ee:5000/valence/>
- Interfaces of speech synthesis, project leader Meelis Mihkla, see <http://heli.eki.ee/syntees/>
- Modification of lexicographer’s workbench, project leader Arvi Tavast

#### DEPARTMENT OF FINNO-UGRIC LANGUAGES AND DIALECTS

Department completed the editing of the Etymological Dictionary. Dictionary will appear in print at beginning 2012. Released was the 22<sup>nd</sup> fascicle of Dictionary of Dialects, edited by Mari-Liis Kalvik, Mari Kendla, Tiina Tärk, prepared for print was the 23<sup>rd</sup> fascicle. Published of dictionaries of cognate languages was “Dictionary of the Votic language 7”, edited by Silja Grünberg. The researchers continued editing of one volume dictionary of the Votic language and compilation of the dictionary of the Udmurt language. They embarked on compiling the dictionary of the Mari language. The Department organised the international seminar on lexicology and lexicography at the Institute, attended by researchers of vocabulary and lexicographers from Germany, Finland and Estonia. The Department continued digitising the archives of



Estonian dialects and cognate languages and completing the electronic database of the Livonian language, using the Institute's lexicographer's workbench EELex, see <http://www.eki.ee/dict/ldw/>

#### DEPARTMENT OF LANGUAGE PLANNING

The language planners released 13 pieces of writing on the topic Language Care, they delivered over 60 papers. Over telephone, language advice was provided to 6 111 referrals, supplied an answer was to 2 413 mails and 14 regular letters. The language advice basis contains over 133 000 entries, of which 7 105 entries being public (Keelenõuvakk); the language advice website <http://keeleabi.eki.ee/> was significantly updated. Teacher training continued with annual conferences on the topic.

Conjointly with the Terminology Department, staff training of the EU translators was organised in Luxembourg and Brussels and training of regular translators was organised in Brussels. Updated was the Euro Language Care website <http://eurokeelehoole.eki.ee>, completed was the fourth Euro-language volume, participation at international project IC Clear was incepted. Released was "Standard Estonian Dictionary for Russian School Students", edited by Helle Leemets and Tiina Leemets. In cooperation with the Valgus Publishers "Lexicon of Foreign Words" was being compiled, so was the "Standard Estonian Dictionary" (ÕS 2013). Conjointly with the Dictionary Department there was created a forum of new words, see <http://portaal.eki.ee/uuedsonad.html>. In cooperation with Department of Language History and Linguistics the Estonian place name book was being compiled, completed were over 2 200 articles.

#### DICTIONARY DEPARTMENT

The Department continued compilation and editing of dictionaries of common Estonian. Underway was the one volume "The Explanatory Dictionary of Estonian" (hopefully to be completed in 2015); "The Basic Dictionary of Estonian" (to be completed in 2013, containing ca. 4500 entries); "The Estonian-Ukrainian Dictionary". The basis of new words and meanings was constantly being complemented. Completed was the unique language resource by Silvi Vare "Estonian Word Families", being the work on formation grammar of vocabulary to be released in 2012. The Dictionary contains 10 042 entry words (family heads) and 80 000 words (family members). All lexicographic works were being carried out in the Institute's lexicographer's workbench EELex, in cooperation with language technologists its functionality was being developed.

The Department organised the 10<sup>th</sup> Annual Conference of Applied Linguistics (together with the Estonian Association for Applied Linguistics and Tallinn University) in April 2011. By the time of Conference, the Estonian Papers in Applied Linguistics, Vol. 7 (a peer reviewed journal) was released.

#### TERMINOLOGY DEPARTMENT

The Department was working prevalently in the project-based mode. A large part of work took place in terminology commissions or consisted in processing material for commissions. The largest project was streamlining and elaboration of the military and security & defence policy terminology in cooperation with Ministry of Defence: in 2011, at 24 meetings 1670 terms were considered.

Picking up were the follow-up projects: education terminology project in cooperation with Ministry of Education and Research and the aviation terminology project in cooperation with Ministry of Economic Affairs and Communications.

Links with the terms consumer became more intimate: within the frame of the project of military and security & defence policy terminology, the Department continued cooperation with the Estonian National Defence College by joint meetings and providing to cadets the advice on terms.

#### PERSONNEL AND ADMINISTRATION DEPARTMENT

It focussed mainly on three domains in 2011: culture of organisation and its development, initiating new building projects and preparation for building, web development.

For mapping of the organisational culture, there was carried out a survey of contentment in cooperation with the company Talentor.

In 2011 three large scale building projects were launched: increasing of the level of access to the building of Institute and bringing it into conformity with the fire safety requirements, building of the scientific archives and reconstruction works of the house within the project CO<sub>2</sub> funded by European Union.

The web environment of the Institute was developed. The document management system was completed. The internal web was replenished by a message bank.

## **ESTONIAN LITERARY MUSEUM**

Associated with Estonian Academy of Sciences

11.05.1999

Founded in 1909 as the Archive Library of the Estonian National Museum

Personnel: 103, of whom researchers 39, librarians and bibliographers 13

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Secretary-Information Manager: Krista Ojasaar, Tel: +372 737 7700,  
krista@kirmus.ee

Estonian Literary Museum consists of five structural units, of which three are based on collections important as regards the cultural history:

- Archival Library with Department of Bibliography – head Merike Kiius;
- Estonian Cultural History Archives –head Vilve Asmer;
- Estonian Folklore Archives - head Risto Järv;
- Department of Folklore - head Mare Kõiva;
- Department of Ethnomusicology - head Triinu Ojamaa.

In 2011, carrying the brunt of the scientific activities of the Estonian Literary Museum were 5 target financed research topics, underpinned by basic funding, 7 Estonian Science Foundation and 2 post-doctor grants. Besides that, efficient support was provided by the state programmes, Compatriot Programme; in the area of large-scale digitising by the State Information System Board and the Foundation Unitas, the publishing projects were supported mainly by Cultural Endowment of Estonia. By mediation of Foundation Archimedes, two large projects were underway, subsidised by structural funds – annexe to the Estonian Literary Museum and development of the file repository.

The research work of the Museum and cooperation with other scientific institutions gained impetus due to composing in spring of the application for setting up the centre of excellence. Although the application was turned down, the effort was instrumental in opening new perspectives for further common activities with literary critics and historians of the Estonian Academy of Arts, Under and Tuglas Literature Centre and the University of Tartu. In the area of international cooperation the Bulgarian and Polish scientific institutions took the lead; researchers from Georgia, Bulgaria and Finland sojourned in the Museum under exchange of scientists programme for a lengthy period. The doctoral degree was defended by 5 researchers of the Museum in 2011: folk-

lorists Anneli Baran, Mare Kalda, Andreas Kalkun and Piret Voolaid, and Eva Näripea from the cultural theory team.

#### ARCHIVAL LIBRARY

The collections were steadily replenished by way of receiving legal deposit copies and follow-up completing; a substantial addition was received from the writer Leo Metsar's legacy. Ongoing as a major research effort was the digitising project of Estonian Red Book under supervision of Kadri Tüür. Upon her initiative, the digi-project's meeting of minds was held in Muhu, and at the beginning of year, the calendar of the Library appeared as a result of joint work at that digi-project. In February, the Library Department participated enthusiastically at the topical Graduate School Old Book Cultural Theory Centre of Excellence "Workshop Cultural memory and the archive: selection, conservation, transformation". The Library cooperated mostly with the University of Tartu, offering to students the base for practice, and with Tartu Higher Arts School in the area of restoration and conservation of older printed matter. The Tartu City Government recognized a worker of the Archival Library with the title of the best museum worker.

#### ESTONIAN CULTURAL HISTORY ARCHIVES

In 2011, major deposits, as per volume, were complete personal archives of Fanny de Sivers, Ilse Lehiste, Leo Metsar, Andres Vanapa and Helju Vals, personal collections of Bernard Kangro and Valmar Adams were replenished. Finding their way to the Archives were nearly 500 Vaino Vahing's letters to Ilvi Jõe-Cannon in the USA, Under's-Adson's letters to Õie Fleig of 1948–1974. Inno Salasoo of Australia donated the Forest University materials; the photo collection was replenished by Salme Ekbaum's picture albums and the photographer Kalju Suur's negatives on writers. Within the framework of project "Writer and his environment" 29 Estonian writers were taken the photo of. Ado Grenzstein's letter collection and the major part of Martin Körber's collection was digitised, ongoing is digitising of photo archives of "Teataja" and collections of Estonian Society for National Heritage. For commemoration of Villem Reiman's 150<sup>th</sup> anniversary and Arno Vihalemm's 100<sup>th</sup> anniversary, collections-based expositions were composed and conferences were held. In cooperation with Tallinn University, the international conference of researchers of autobiographies was held titled "Trajectories of (Be)longing". Pieces of printed matter appearing as major scientific works were the third volume of Friedrich Robert Faehlmann's "Works" and the bilingual edition of the epic poem "Kalevipoeg". The follow-up issue of the journal "Methis" appeared, and basing on received biographies the book "Boys, maturing at war" was published.

The highlight in the activities of the Archives uniting different departments was publication of the new translation in English of "Kalevipoeg" combined with the original text in Estonian. It is the jubilee edition, commemorating the 150<sup>th</sup> anniversary of publication of the first complete version of "Kalevipoeg".

Author of the translation is Triinu Kartus who used to reside in Australia; the illustrations are Gunnar Neeme's pictures. The work was edited by Harri Mürk of Toronto; the text was supplied with commentaries indispensable for the English-speaking reader by Bloomington University's folklorist David E. Gay. Project supervisor of the issue was senior researcher of the Estonian Cultural History Archives Marin Laak. In October, the international conference dedicated to anniversary of "Kalevipoeg" was held in cooperation with the University of Tartu.

#### ESTONIAN FOLKLORE ARCHIVES

Keynote pieces of printing matter of 2011 are related to local lore: the collection composed by Valdo Valper "The church found in the forest. Mõtsast löüti kerik. Urvastõ's local lore" and Mari-Ann Rimmel's "Inherited places. Local lore stories and legends from Rae parish" draw on years-long research and field work. "The church found in the forest" is the deepest going issue among similar publications heretofore put out, supplied with detailed maps and richly illustrated. The work has been performed with great commitment and the result is commendable by content and beautiful design. The work by supervisor of the local lore team which appeared by anniversary of the Rae parish Mari-Ann Rimmel presents the heritage of the author's birthplace, in which alternating with archival texts are thorough commentaries giving meaning to them and analysing them. Upon estimate of the opponent Professor Tiina Kirss, the doctoral thesis defended by Andreas Kalkun "Seto song in the history of Estonian folklore. Additions to the representation story", is "a brilliantly written insight-based monographic dissertation, animated and sophisticated, viewing the history of Estonian folklore through the seto song – in particular improvisational song".

In 2011, the yield of information material of the Folklore Archives was exceptional: the Archives received for holding the batons passed on in the process of the project Relay Dance effectuated through Estonia, i.e. nearly 200 'memory sticks' impressed with the history, traditions, customs of the dancing groups having participated in the said project, combined with photos and video-materials.

Upon all departments with archives of the Estonian Literary Museum was bestowed official recognition at the end of the year by Ministry of Education and Research: the periodic appraisal of scientific collections was passed positively and was graded as excellent.

#### DEPARTMENT OF FOLKLORE

In 2011 too, the Department stood conspicuously out due to its lively international research work; besides that, 3 doctoral degrees were awarded to members of the personnel. Promoted by Liisi Laineste, Summer School of International Society for Humour was held in August; in evidence was sprightly cooperation within the framework of European teams, in particular,

in Estonian-Polish and Estonian-Bulgarian joint projects. The international team “Charms, Charmers and Charming” launched the journal “Incantatio”. Among the publications, the “Folklore” and “Mäetagused” were awarded high category by ERIH. The Department was busily engaged in popularising science: Making it to the first ten in the ranking list of Estonian book sales was Piret Voolaid’s “Hare jumps the goat” and “Estonian charms” compiled by Mare Kõiv.

#### DEPARTMENT OF EHTNOMUSICOLOGY

Meriting the most recognition from work done in the year is Triinu Ojamaa’s voluminous monograph “Estonian choir song in multicultural Toronto is 60”, a tiny fragment of history of expatriate Estonia. Completed also was the joint research by Taive Särg and Aune Valk, considering as viewed from musical and social psychological aspect the reciprocal impact of music and identity in Setumaa, comparing it with other districts of Estonia.

An important development starting on September 1 was laying the annexe to the Estonian Literary Museum, to be consummated by summer 2012 with completion of 2 800 sq. m repository and laboratory premises, featuring special conditions.

**INSTITUTE FOR INTERNATIONAL  
AND SOCIAL STUDIES  
AT TALLINN UNIVERSITY**



Associated with the Estonian Academy of Sciences  
28.01.2003

Founded 1988

Personnel: 43, of whom 30 researchers

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alina@iiss.ee

In the reporting year the Institute fulfilled 3 target-financed topics, 2 ESF grants and 14 applied cooperation agreements. It participated in several international projects.

The Institute continued the target-financed topics “Changes in Attitudes and Life Styles of Estonian Residents in 1985-2013: horizontal stratification” (responsible researcher Airi-Alina Allaste) and “Consolidation of Democracy in Multicultural Society” (responsible researcher Raivo Vetik), finalised in 2011, the last year of the project. Funds were allocated to fulfil the new target financed topic “Learning Person in Educational System and Labour Market: Inequality as Factor and Outcome of Formation of External and Internal Limits” (responsible researcher Rein Vöörmann).

In international cooperation programmes work continued with project of the EU 7<sup>th</sup> Framework Programme “EUROSPHERE: Diversity and the European Public Sphere. Towards a Citizens’ Europe” (Supervisor for Estonian part Mikko Lagerspetz) and PRIMUS programme project “Labour Market Challenges to Higher Education: Estonia in European Context” (Supervisor for Estonian part Marge Unt); continued cooperation with the European project SHARE (Survey on Health, Ageing & Retirement in Europe) (Supervisor for Estonian part Luule Sakkeus).

Continued cooperation within the framework of European research project ESPAD (European Survey on Alcohol and other Drugs), polling with questionnaire was held in Estonia for the fifth time in 2011 (Supervisor for Estonian part Airi-Alina Allaste).

In 2011, project of EU 7<sup>th</sup> framework programme MYPLACE (Memory, Youth, Political Legacy And Civic Engagement) started, in the framework of which, in cooperation with 18 institutions, the readiness of youth coming from 16 European countries to align with the right extremist political forces is stud-

ied. The political involvement of youth is researched by combined application of polling, in-depth interviews and ethnography (Supervisor for Estonian part Airi-Alina Allaste). The Institute also started the project “Education as a Lifelong Process – Comparing Educational Trajectories in Modern Societies” (eduLIFE), aimed at analysing how formation of a person’s educational path depends on family background, build-up of the educational establishments, job-related career and family events (Supervisor for Estonian part Ellu Saar).

The researchers attended numerous scientific conferences, delivering papers, both in Estonia and abroad and they were active in science organisation events.

Promoted by the Institute, in cooperation with the Institute for State Sciences of Tallinn University and the Estonian Institute for Humanities of Tallinn University, there was organised, after the time-lapse of several years, the Annual Conference of Estonian Social Sciences, dedicated to the 20<sup>th</sup> anniversary of independence regained of Estonia.

The Centre for Lifestyle Studies organised the international conference “Youth (Sub)-cultures in Changing Societies”, attended by 70 scientists from Europe, America, Asia and Australia; during 3 days 52 papers were delivered and 5 panel speeches held by top theoreticians of the area.

Doctoral thesis was defended by four staff members of the Institute: “Identificational Integration: Conceptualisation and Operationalisation on the Example of Second Generation Russians in Estonia” (Gerli Nimmerfeldt), “Social Network and Education as Resources for Agency Formation on the Estonian Post-Socialist Labour Market” (Margarita Kazjulja), “Media Representation of Women in the Context of Estonian Culture of Journalism and Society” (Barbi-Pilvre Storgard) and “Out of sync? The Determinants and Consequences of Nonstandard Schedule for Family Cohesion: The Netherlands within a Comparative Perspective” (Kadri Täht). The last-mentioned work was defended at Vrije University, Amsterdam.

In 2011, employees of the Institute released the total of 79 scientific publications, including several collective monographs, all the authors (or majority of the authors) whereof being workers of the Institute.

- Allaste, A.-A. Eco-communities in Rhetoric and Practice. Tallinn University Publishers, Tallinn.
- Saar, E. Towards a Normal Stratification Order. Actual and Perceived Social Stratification in Post-Socialist Estonia. Peter Lang Publishers House, Bern.
- Vetik, R., Helemäe, J. (eds.). The Russian Second Generation in Tallinn and Kohtla-Järve: The TIES Study in Estonia. Amsterdam University Press.

Released was the third issue of the journal “Studies of Transition States and Societies”, compiled jointly by the Institute for State Sciences and the Institute



for International and Social Studies of Tallinn University and the special issue of the journal (edited by A.-A. Allaste), containing the selection of articles composed on the basis of papers delivered at the above conference on topics of youth cultures.

Cooperation was also continued with several ministries of the Republic of Estonia (Ministry of Education and Research, Ministry of Social Affairs, Ministry of Internal Affairs) and state institutions (Health Promotion Institute, Statistical Office).

## ESTONIAN NATIONAL MUSEUM

Associated with the Estonian Academy of Sciences  
21.12.2006



Founded in 1909

Personnel: 97, of whom researchers 17

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The year of 2011 was the year of great expectations and disappointments for Estonian National Museum however it was also a year of very intensive work. Finalised were the contractor design and construction plans of the new building of Estonian National Museum and tender for the building contract was called. The tender failed because of the exorbitant building price bids offered by the building companies. To add to our predicament, the European Union declined to support financing of the building of Estonian National Museum, reckoning the economical feasibility of the object too risk-prone. In the face of those adversities we were sustained by the understanding that Estonian National Museum was much more than a house, it had always been the testimony to being a nation of culture. Although for more than a hundred years after foundation of Estonian National Museum the building of the nation's museum has not been put up, it can also be construed as a sign that that museum is not as complete in its development as being able to accommodate within set boundaries and space. It can be construed as a sign that growing of Estonian National Museum into the forum of Estonian original cultures, into an institution rendering the society cohesive, initiating and channelling the dialogue would still take some more time, before we could ultimately move into its own house.

### CHANGE OF COLLECTIONS OF THE MUSEUM

The bulwark of Museum is its collections, which must be systematised, scientifically studied, made available to people and understandable. Organised collections, representative by content and nature make a great difference between a museum and a community cultural centre, a topical park or that notorious institution presently ever more intensively busy for the purpose of occupying leisure time of the people. Overlying the collections is the museum's research and development work, while the collections determine the museum's preservation and conservation activity, underlying the museum's collection policies. Collections impart to the museum its soul and heart and affect the outlook of the museum via expositions, events and programmes.

The time when Estonian National Museum dispatched the collectors of antiquities to all counties with an instruction to bring to the museum all ancient and valuable items that catch their eye is a century-long gone affair. Today no museum can, nor have it the means to undertake major collecting efforts, not only because the catch cannot be placed securely but also because the modern consumer and information society is not the object for major collecting. In order to collect the modernity, to preserve it and keep for future generations the modern-time must be first understood and thereafter studied and assessed.

In 2011 we attempted to render even more effective the scientific research done at Estonian National Museum, with the view to forming on its basis the collecting policies embracing the contemporary period and also the museum's training and educational programmes meeting the expectations and needs of the society.

There were announced national collection competitions underpinned by Estonian National Museum collecting policies on the topics, concerning every citizen of Estonia (e.g. "Twenty years as from land reform", "My car", "My childhood", and "What have I found at working bees" etc.). The questionnaire lists sent to correspondents were preceded by research work of scientists. The field works of Estonian National Museum's researchers (in 2011 in Ida-Virumaa at Toila parish, at Vormsi island, in Karelia and Leningrad oblast of Russia) yielded excellent results because they based on experience and knowledge of earlier field works. The material received on the basis of questionnaires used at field works, characterising both the respondent and the surrounding environment, is comparable and useable also after decades. Such knowledge-based skill enabling one to dismiss, at one's collecting and field work, the accidental and non-characteristic items ensures lasting value of the museum's collections.

As a new dimension added to former collecting policies of Estonian National Museum, in 2011 we helped appraise collections and development plans of central museums of counties. For coordinating the activity of museums reflecting county specificities to display them on the national level, there was a new division started, working now for the first year in the composition of Museum – the Division of Original Cultures. Implicit in the concept 'original cultures', is much more than the level of county central museums. It comprises the cultural heritage of national minorities living in Estonia, and also everything commonly perceived as community values, helping to stay humanly as bearer of cultural conscience.

#### MUSEUM TRAINING COMPLEMENTING

#### THE MATTER LEARNED ON SCHOOL BENCH

Curricula of the educational institutions have changed and are in a constant flux. One of the essential goals of that process is certainly the wish to provide

to everyone, willing to study, a better aptitude to manage in life and one's undertakings. That goal cannot be attained by the school on its own, needed is the coordinated common work of all institutions carrying on education as culture. It is the museums that have a major role to fulfil at this juncture. It is Museum's most urgent obligation to organise its museum training so that both students and teachers would benefit from it. Having analysed in 2011 the museum classes given by Estonian National Museum up until then, we dared hold in September the first large Museum Day. On one day we had come together in Estonian National Museum all students of Tartu Forselius Gymnasium, from children of the first forms to the youth of the leaving year of the Gymnasium. The Museum organised discussions of expositions, quizzes, handicraft classes, competitions etc., offering separate programmes and lectures also to teachers. All parties were content with the Museum Day. The conclusions drawn provided to us assurance that the direction elected was correct – the museum training cannot be carried out productively in cramped time and space, i.e. not in the space reminiscent of classroom confined with school-bell chime. Museum training must be effectuated apart from school and hand in hand with school, offering an opportunity to connect socially, to discuss, to maintain dialogues – everything for which the school class has neither the time nor the possibility. Absent the above, no educated citizen and man will rise.

The wider and more social approach to museum training than evidenced hitherto will impose on Museum larger commitments and tasks, it will make one appreciate self-critically the team's capability and capacity for cooperation. Organisation of one museum day to all students of a gymnasium calls for attendance at the day of the whole personnel of the museum, from groundsman to management staff. But is also presumes cooperation and trust between school and museum.

#### BEST RESULTS ARE BORN OUT OF COOPERATION

Among international cooperation projects, most important for Estonian National Museum as providing estimates and feedback necessary for everyday work are the project EuNaMus (“European National Museums: Identity Politics, the Uses of the Past and the European Citizen”), studying the role of national museums, the development and changing needs of society, and the project focused on altered expectations of museum visitor “Transforming Audiences, Transforming Societies”. Research into our original food culture, which had been dwindling down in the intermittent years, became again topical, when Estonian National Museum acceded to joint project of museums of six countries (Norway, Sweden, Slovenia, Czech Republic, Hungary, Iceland) “Taste of Europe”. At the expositions simultaneously opened in all named countries Estonian National Museum's carrying role was related to the topic ‘potato’. The workshops, seminars, and debating club tournaments ac-

companying the exposition as well as the annual conference of Estonian National Museum considered the dramatic change of our dinner table, recipes for food preparation and also instructions to come back to our forefathers' nourishing habits.

Seminal to result in the similarly many-sided consideration of topics is also the research and development project starting in 2011 to continue in the following two years, dubbed by us shortly the 'sheep project' (C.A.N.E.P.A.L – Culture and Nature: The European Heritage of Sheep Farming and Pastoral Life). Besides the databases, which should convey knowledge in learned and popular wisdom from growing sheep to knitting mittens and scarves and preparing roast lamb, the topic will be finalised by open-air exposition in summer 2013. The exposition will bring together all topics studied in the process of research project: devices and techniques related to sheep and breeding of sheep and understandably the sheep themselves.

Among cooperation projects with the Estonian higher schools most important are grants of the Estonian National Museum scientific foundation, e.g. "Development of Museum's communication in the 21<sup>st</sup> C. information environment", "Rise of nationalism: ethnicity, science and politics in inner periphery of the Russian Empire from beginning 19<sup>th</sup> C. to 1920s." etc. Comprehensive is participation of researchers of Estonian National Museum in target-financed topics. Of essence among them are: "Complexity of cultural communication and methodological challenges of cultural studies", "Dynamic perspectives of the identity policy– analysis of dialogue and conflict", "Shift in cultural relations of population in Estonia from 1970s to the present time", "Production of knowledge in the context of national scientific research", "Religious changes in the post-colonial world", "Raadi manor and Lipharts' art collection".

The best and most substantial example of cooperation of specialist scientists (Estonian National Museum, University of Tartu, Literary Museum) is however the consistent publication of the "Journal of Ethnology and Folkloristics" (JEF).

Among many publications completed in that year, meriting special highlight in 2011 is a volume of articles on change of nationalist discourse in Russia and the Soviet Union ("Проникновение и применение дискурса национальности в России и СССР в конце XVIII – первой половине XX вв", compilers and editors Indrek Jääts, Erki Tammiksaar). The same holds also regarding the publication of another issue of the series presenting the voluminous archives materials of Estonian National Museum "From antiquities collection trips" – "Gustav Vilbaste. From antiquities collection trips 8".

We must admit however that publishing activities of Estonian National Museum have been ever more developing in recent years towards electronic publishing. The third book of our series "My Christmas story" appeared, besides hard copy also as an audio book, CD "My Christmas story. Audio book

of Estonian National Museum; 1”. Completed were also pithy and comprehensive DVDs on topics intriguing the public: DVD “Estonian ethnographic film; I. Two films on Estonian ethnography. Aleksei Peterson 80” (compilers Indrek Jääts, Mairo Selgmäe) and DVD “From traditional wrap to wall tapestry” (compiler Vaike Reemann).

The most important result of 2011, packed with colourful and variegated activities was the growth of Estonian National Museum into a more unanimous and stronger institution, sticking together.

## JÕGEVA PLANT BREEDING INSTITUTE

Associated with the Estonian Academy of Sciences  
23.09.2008



Founded 1920

Personnel: 104, including 24 researchers

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The main activities of the institute in variety breeding applied agricultural studies and preservation of plant genetic resources have been carried out in frames of projects financed from state programs “Agricultural Research and Development for 2009-2014” and “Program of plant breeding for 2009-2019” and development plan “Collection and Conservation of Plant Genetic Resources for Food and Agriculture in 2007-2013”. The most important international collaboration was carried out in frames of AGRI GENRES project AVEQ “Avena genetic resources for human consumption” where our task was evaluation of agronomic and quality properties of oats genotypes of different origin including wild species, old cultivars, landraces and breeding lines. The aim of the project is identification of valuable initial material for creation of novel valuable varieties for human consumption.

Several new national and international projects were started in 2011.

The objective of ECPGR AEGIS project “Improving the prerequisites for a European rye collection” is to activate cooperation in rye germplasm work with emphasis on the countries bordering on the Baltic Sea. The Nordic Council of Ministries project “Public Private Partnership for pre-breeding in perennial ryegrass (*Lolium perenne* L.)” was started at the end of the year. Jõgeva Plant Breeding Institute collaborates with Nordic Universities and plant breeding companies in order to prepare for the predicted climate changes at selecting plant materials of perennial ryegrass for the development of cultivars with a suitable adaptation to future climates in the Nordic countries. BALT-ORGPOTATO – “Baltic Organic Potato for the World markets” is an Estonian-Latvian cross-border cooperation project. Project BALTORGPOATATO focuses on provision of fruitful cooperation among organic potato growers, breeders, processors and scientific institutions in Latvia and Estonia involved in organic potato food production chain, aiming to promote and ensure recognition of Baltic region organic potato products and sales volume growth in global markets.

The most notable national collaboration is the project “Resistance breeding of field crops” financed from the programme Support for biotechnology R&D. The project led by Department of Gene Technology of Tallinn University of Technology is aimed for development of resistance breeding technologies in essential food crops wheat and potato, to allow creation of new varieties of enhanced productivity.

Five new collaborative projects with farmers and agricultural industry were started in frames of the programme Collaboration in development of new products, treatments and technologies in agricultural, food and forestry sectors of Rural Development Plan. These projects deal with adjustment of growing technologies of malting barley, baking wheat and grain for starch production; selection of soya bean genotypes for production of protein products of human consumption for Estonian climatic conditions; comparison and selection of organic fertilizers for vegetable production; implementation of decision support system for control of potato late blight based on site specific weather monitoring and development of measures to increase productivity and quality in organic cereal production.

The most notable scientific achievement is the defence of the PhD thesis Integrated plant disease management in spring barley and oat production by Pille Sooväli at the Estonian University of Life Sciences. Spring barley variety Maali and oats variety Kalle were registered as new cereal varieties in Estonia being the most notable result of practical variety breeding. Potato variety Juku passed registration trials in Latvia. All three new varieties are suited for production in organic conditions. New varieties have enhanced disease resistance, high competitiveness with weeds and high yield quality at low input conditions.

The field exhibition Viljeluspäevad 2011 organized together with major Estonian agricultural companies at the beginning of July had great importance in presentation and promotion of research results to the farming community. The field exhibition attended by 800 visitors during two days was the biggest and much visited event of such type in Estonia in that year.



## **ASSOCIATED ORGANISATIONS**

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Organisations from outside the structure of the Academy, whose activities and objectives comply with the activities and objectives of the Academy, may associate with the Academy. Association is effected in the form of a bilateral agreement, specifying the purpose of association as well as the duties and commitments of both parties.

Reviews on the 2011 activities of the institutions associated with the Academy have been presented in the chronological order of their association date:

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## **ESTONIAN NATURALISTS' SOCIETY**



Associated with the Estonian Academy of Sciences  
23.01.1998

Founded 1853

Membership: 718 active members, 15 honorary members, 635 trustees

Subunits: 22

Location: Struve 2, 51003 Tartu, ESTONIA

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Academic Secretary: Silja Kana, Tel: +372 734 1935

Estonian Naturalists' Society has 22 subunits. The following subunits work as sections: amateur meteorologists, anthropology, botany, entomology, forestry, geology, theoretical biology. The other subunits are: the Commission of Lakes, the Estonian Society of Malacology, the Estonian Mycological Society, the Estonian Society of Theriology and the Jakob von Uexküll Centre. Commissions with special tasks focus on the history of natural sciences, the library, natural education, observation networks, terms of ecology and plant names, and the botanical rarities. In addition, the Society has assemblies of ecology, of honorary members and the round table of nature conservation.

In 2011 nine General Assemblies with scientific presentations were held:

January 27 – Agu Laisk “Photosynthesis – black and white and colourful”.

February 28 – “The Baer day”. Presentations by Marina Loskutova, Eduard Koltšinski and Anastassija Fedotova.

March 31 – Kalle Kirsimäe “Searching for water and life on Mars: new challenges”, review meeting of 2011.

April 28 – Andres Tarand “Climate change in Estonia”.

May 26 – Tarmo Soomere “On the possibilities of the modern marine science to understand and protect Estonian seashores”.

September 29 – Presentation of Yearbook of the Society no 86 “Rarities in Estonian nature” by Tiiu Kull. Mirt Gramann “About the Universe and its evolution”.

October 27 – Urve Mille “Changes in natural environment in the vicinity of Stockholm since the last ice age”.

November 24 – Mihkel Zilmer “The life on the waste ground of information”.

December 15 – Tõnu Viik: “What are exoplanets and how we discover them?”

The subunits organized their traditional and other events:

- Science day dedicated to Karin Mark “Studies of humans using different sources” March 18, Tallinn (together with the Institute of History of Tallinn University and NGO Centre of Archaeology).
- Mushroom practice, Kilingi-Nõmme, May 13-15.
- Seminar organized by nature conservation round table “If and how the message of nature conservation reaches people?” May 20, Estonian Naturalists’ Society.
- The Spring School of Theoretical Biology “Biological interactions” May 27-29, in Ojako farm, Pärnu county (together with the Institute of Ecology and Geosciences of the University of Tartu).
- Gathering of the friends of mosses, May 28-29, in Marimetsa bog, Turvalepa broadleaf forest and Palivere spring fen.
- The 34<sup>th</sup> Naturalists’ Day at Käsmu, Lahemaa National Park July 2-3.
- The Summer School of Ecossemiotics together with the Institute of Philosophy and Semiotics of the University of Tartu, July 28-29, Rutja.
- Gathering of amateur meteorologists and thunder observers July 23, Lelle, Rapla county.
- Mushroom practice October 6-9, Kilingi-Nõmme.
- Conference commemorating Juhan Aul (1897-1994) October 20, Tallinn.
- The Autumn School of Theriology October 23-25, Oonurme.
- The Autumn School of Geology VII “Resources of the Earth” October 7-9, Taevaskoja, Põlva county.
- Exhibition “Snails, mussels and human” compiled by people from Estonian Malacology Society, October 25-November 25, in Tartu Environmental Education Centre.
- Seminar organized by nature conservation round table “Natural disasters and human psychology” November 3, Estonian Naturalists’ Society.
- Meeting of Mycological society “Actiones” December 10, Tartu, the University of Tartu, Botany Department.

The Society participated in fulfilling the projects funded by the Environmental Investment Centre, Tallinn Botanical Gardens and Ministry of the Environment.

The Society and the Estonian Environment Information Centre developed the Nature Observation Database. The link to it (as of 2011) is:

<http://loodus.keskkonnainfo.ee/lva/LVA.aspx?type=Artikkel&content=-1936342045>.

The commission of plant names continued to complement the database of plant names. During 2011, altogether 398 records were entered (in December 2011 there were 17 376 units in the database). In 2011 nine seminars were held in the series “From natural scientists to teachers of natural sciences”.

Members from different sections compiled expert opinions and exhibitions (Commission of botanical rarities carried out an expert examination on protected species in III category, Theriology Society handed down to decision makers its opinion about the Saaremaa bridge; the said society was involved in monitoring and inventory work; the Estonian Society of Malacology collected data about invasive species and monitored species etc.). In 2011 the initiative of repository of reports and inventories of Estonian nature underwent the first development period and it can be seen at the following address: <http://elurikkus.ut.ee/eluv.php?lang=est>.

In December 2010 there were 162 244 printed items in the Society’s library. Within a year the library acquired 184 new books and issues of 169 periodicals. The publications were exchanged in the reporting year with 54 institutions and organizations in 18 countries.

Publications:

Kull, T., Liira, J., Sammul, M. (eds.). Yearbook of Estonian Naturalists’ Society 86. Rarities in Estonian nature. 304 pp.;

Tulva, T., Öpik, M., Puura, I. (eds.). *Scola Biotheoretica* 36 “Theory of movement”. 88 pp. (together with Institute of Ecology and Geosciences of the University of Tartu and the Natural History Museum);

Öpik, M., Tulva, I., T., Puura, I. (eds.). *Scola Biotheoretica* 37 “Biological interactions”. 71 pp. (together with Institute of Ecology and Geosciences of the University of Tartu and the Natural History Museum);

Verš, E., Preeden, U., Lang, L. (eds.). *Schola Geologica* 7 “Resources of the Earth”. 148 pp. (together with Institute of Ecology and Geosciences of the University of Tartu, Institute of Geology and the Department of Mining of Tallinn Technical University);

*Folia Cryptogamica Estonica* 48. 158 pp. (with the University of Tartu);

Laumets, L. (ed.). Nature of Lahemaa: 34th Naturalists’ Day, July 2-3 2011, 63 pp.

Internet journal:

Ingerpuu, N., Vellak, K. (eds.). Friend of mosses 14. 40 pp. (<http://www.botany.ut.ee/bruuloogia/Samblasober14.pdf>)

## ESTONIAN GEOGRAPHICAL SOCIETY

Associated with the Estonian Academy of Sciences  
27.01.1998



Founded 1955

Membership: 213 active members, 22 honorary members, 5 foreign members

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In 2011, three sections were active in the composition of the Estonian Geographical Society: section of school geography, section of natural geography and human geography and Tartu Department, and the Youth Club.

Continuity of the activity of Estonian Geographical Society is taken care of by the Youth Club, which has developed traditional activities, designed to boost involvement of the youth in academic common activity and study of Estonian geographical conditions, in many cases complementing practical sessions of work, which the universities have not been able to provide.

In the reporting year the plan of research of the Society featured four problems:

- “History of Estonian cartography”. Topic: “Maps by A. J. von Krusenstern of the Pacific Ocean”, investigator: Heino Mardiste;
- “Nature of Raplamaa”, investigator Tiit Petersoo;
- “History of Estonian geography”, topic leader Arvo Järvet;
- “Considering international environmental projects and issues in geography classes”, topic leader Ulvi Urgard.

Estonian Geographical Society has always emphasised propagation of knowledge in the area of geography both in Estonian and in foreign languages. Presently our most important issues are the Year Books of the Society, collections in English of IGU international congresses and the publications released by young geographers. All issues of the Society meet with wide and frequent use at schools (from basic schools to university) and they are available at libraries.

On occasion of all IGU international congresses there are issued collections in English: “Estonia. Geographical Studies”. They contain important geographical material on Estonia. Summaries of several congresses have emphasised the considerably high level of Estonian geographical scientific literature.

The activities of the Society in 2011 were closely related to the “Year of Research” announced by Ministry of Education and Research. President of the Society Mihkel Kangur was elected ambassador of the domain of geosciences. Within framework of the “Year of Research” the Society organised two topical classes of geography on mires and bogs in Saue Gymnasium, the class of geography and census-related civic studies at Imavere Basic School. A palaeolimnology-related class at Haljala Gymnasium was delivered by member of Board of the Society Liisa Puusepp. Within the framework of the Year of Research topical days for teachers were initiated. Major interest was excited by lecture of member of the Society Andres Tõnisson “Known and unknown Estonia in the first half of 20<sup>th</sup> C.”.

Section of school geography of the Estonian Geographical Society (Ulvi Urgard) participated, as earlier, in cooperation with the University of Tartu Geography Department and Ministry of Education and Research, at solving scientific-methodological problems of teaching geography, at preparation of gymnasium state examination in geography and analysing the examination results. In autumn 2011 teachers participated at autumn school for teachers of geography, with the main topic “Opportunities for application of new state curriculum in geography”.

Members of Section were actively involved in promotion of nature and environmental education, by engaging scientists of stature of the Society for the purpose. The Swedish and Estonian youth keen on nature participating at international environmental project “Providing sustainable development in areas of the Baltic hub” were delivered a paper by President of the Society M.Kangur on topic “Climatic changes – a myth or actual fact?” The project was recognized by Saue town government with the third prize of “The Year’s Feat 2011”.

In the line of continuous professional development for teachers of geography there were lectures held in Tallinn Teacher’s House; for practical knowing of the nature a fishing tour to the Lake Peipsi, outing to Vormsi island and Silma nature preserve, study trip to Gotland etc. were organised. There continued traditional topical days for school students, with flying squirrel expert of the Society Uudo Timm speaking about results of his research. Participation at autumnal GIS (geo-information systems) Day in National Library has become a tradition for school geographers. The Society is consistently engaged in preparation of school students for Geographical Olympiad, whose areal round was held on 10.12.2011 and whose final round will be held on 11-13.05.2012 at Otepää.

The traditional autumn symposium of students in the specialty of geography of Tallinn and Tartu universities held at Kiltsi manor (which used to be the place of living of geographer A. J. von Krusenstern) provided an overview of research and discussed the problems in the area of geography concerning Estonia and the Globe. The papers delivered at the autumnal symposium will

again be published as a separate collection in the series of the Society publications (editors A. Printsman, K. Vilumaa).

The yearly summer excursion took those interested to Läänemaa (also to Vormsi island). The young geographers held traditional events: the county excursion to Western Tartumaa, the island trip in Päärissaare and the summer bicycle trip from South Estonia to Central Estonia, plus other undertakings. Young geographers in cooperation with other natural sciences organisations organised the national competition of student works on geography. Actively involved were members of Section of school geography, under whose supervision a series of geographical Olympiads were held. Success was scored also at international geographical Olympiad.

The Society organised a number of exciting educational lectures and seminars. On 10 May there was the day with papers held in Tallinn University on the topic "Karst and karst area", with Enn Pirrus speaking of karst generally and its exhibit in Nabala, and Rein Perens speaking of Nabala district's hydrogeology. The Society celebrated the 20<sup>th</sup> anniversary of the regained independence of the Republic of Estonia with a cosy evening talkshop, moderated by geographers, having played a significant role at rebuilding our state: Elvi Sepp, Sulev Mäeltsees, Kalev Kukk and Andrus Ristkok. The Society was party to organising the conference "Oil shale – options for cooperation" in Jõhvi Concert Hall on 10 November 2011, aimed at promotion of options for cooperation between different sectors to provide balanced and sustainable development of oil-shale related domains. From among members of the Society, the papers were delivered by President Mihkel Kangur and Tiiu Koff. The Society participated at GIS-Day (16 November, National Library).

Members of Terminology Commission counselled those interested in issues of geographical terminology and toponymics.

At club nights (6) the travelling impressions of general interest were heard, as well as news in geography.

Cooperation was developed with many research institutions, organisations and universities. Contacts were also maintained with scientists of foreign countries. Members of the Society participated at scientific conferences, symposia, seminars organised by international organisation. Professor Sulev Mäeltsees attended the scientific conference dedicated to anniversary of the Frankfurt Geographical Society and met geographical societies of other countries. A number of scientists of the Society were active in organisations associated with IGU. Representation of the Society in International Geographical Union and in Association of Geographical Societies of the Baltic Region, as well as participation of members of the Society in foreign scientific forums, propagation of publications abroad and visits of foreign scientists to inform themselves as to the work of the Society helped to present the Estonian geographical science also outside Estonia.

## **SOCIETY OF ESTONIAN AREAL STUDIES**



Associated with the Estonian Academy of Sciences  
27.01.1998

Founded 1939

Membership: 222

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Chairman: Andrus Ristkok, Tel: +372 566 47806

Project Leader: Ene Luka, Tel: +372 644 0475

In 2011, the Society carried on, already for the third year the follow-up project “Areal studies research and education programme 2011”. Ene Luka, having acquired two years long experience as project leader will continue development of the areal studies within the framework of that project, with which she started already in 2009-2010.

A major undertaking in that year was the memorial conference “Voldemar Miller – 100”, organised as a three days long remembrance event. On 6 February flowers were taken to V.Miller’s grave in Metsakalmistu and candles were lighted. In the next day there was conference with speeches. Speakers from various institutions related to Miller recalled the activities of that versatile and fruitful person as expert in the areal studies, as a journalist, archivist, guardian of national heritage and children’s writer, as well as his other activities, which have carved Miller’s name in Estonian history of culture, alongside with other renowned names. On the third day, on 8 February the Estonian National Library hosted the remembrance exposition composed by them.

The Society’s reporting meeting for 2011 was held on 8 April in Tallinn in the cupola hall of the Estonian National Library. It was also the election meeting, where a new Board was elected to the Society of Estonian Areal Studies. Withdrawing from work of the Board was long serving merited organiser of post-war areal studies movement and life of the Society Eva Maaring. The newly elected Board proceeded to work in the following composition: Andrus Ristkok (continuing as Chairman), Ene Luka, Ester Kerge, Georgi Särekanno and Tiia-Helle Schmitte. At the general meeting the statute of the Society was renovated. It was brought into compliance with the amendments made in Non-Profit Organisations Act in the period after adoption of the statute. The Society elected two honorary members. The certificate no. 3 of honorary member was granted by resolution of the general meeting to re-founding member of the Society, way-layer of development of pre-historical science, merited



editor of publications on the areal studies Lembit Jaanits. The certificate no. 4 of honorary member was granted to another re-founding member of the Society, merited promoter of school areal studies, supervisor of youth and teachers, fruitful presenter of local lore Heino Mägi.

Insofar as the procedure of funding the project “Areal studies research and education programme 2011” was approved by Ministry of Education and Research, the focus of the activities under programme was quite understandably directed in the first place at continuation of areal studies’ activities by school youth. Within its framework the Society organised the national competition of young guides (20-21 May), several instruction days for young guides, topical study trips (“Pre-history of Saare-Lääne” and “Pre-historical Rävåla”), the regular common excursion of young guides and young activists of areal studies. The late autumn study trip took the young to paths of the coastal people in Harju and Viru. On 14 October the town of Paide hosted the regular, 43<sup>rd</sup> in succession areal studies conference of school youth. There was also compiled the methodical instructive material to schools “Recommendations to researcher of family history”. It was again possible to issue the selection of areal studies works by the youth (“The school students’ areal studies works – 28”). Both publications were compiled and edited by project leader, member of Board of the Society Ene Luka.

The study cycle started in the earlier years “Sacral and profane” was extended in November 2011 by a follow-up seminar. In the middle of summer there was organised another hereditary culture study trip to landscape. That time the participants looked at objects of the Ambla parish. The study tour was supervised by one of initiators and drivers of that topic Toomas Lemming.

The year 2011 witnessed establishment of contact with the Russian relatively small community of areal studies in Estonia, which had been long contemplated. The relations were established by member of Board G.Särekanno. The enthusiastic partners were gathered by A.Belenkova, the main promoter of A.Puškin museum set up at Lasnamäe Russian Gymnasium. Their favourite topic has been study of historical links of Estonia and Livonia and St.Petersburg, stories of heritage of Russian and Estonian-Baltic famous names and reciprocal links over the times.

The yearbook 2010 appeared in cooperation with Estonian National Heritage Society and Estonian Genealogical Society, like the practice of the recent years had developed. It contains concise interviews with members of the Society, Members of Academy M.Veiderma and A.Raukas, several personal stories, and also pieces of writing for report and photo recollections from 2010.

The vigour of activities of the Pärnumaa enthusiasts of areal studies has become an example to be followed by the whole Society. The action plan of Pärnumaa Society of Areal Studies featured numerous undertakings in the

past year: meetings, seminars, meetings with papers, study days, study trips, museum days. Invitation to participate at two-day excursion to Ida-Virumaa organised by activists of Pärnu in St. John's Day was extended also to those interested in the Society.

It can be asserted that the past year of the Society was at least as fruitful as the earlier years. Many public events on areal studies' topics were organised, topical expositions were opened, small items of printed matter, articles in periodical issues and books were published and personal events and local lore events were celebrated.

The more detailed bibliographical overview of printed matter and notices on events held and contemplated can be found on the Society's website.

## ESTONIAN MOTHER TONGUE SOCIETY



Associated with the Estonian Academy of Sciences  
4.02.1998

Founded 1920

Membership: 348 active members, 12 honorary members

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Academic Secretary: Killu Paldrok, Tel: +372 644 9331

Librarian: Helju Kaal, Tel: +372 644 9331

In the reporting year, the Society organised 4 conferences, incl. 1 training seminar, 6 meetings with papers and 14 language days, incl. 5 The Estonian language days abroad. In that year, 85 papers were delivered.

Outside Estonia, with co-organisation of Ministry of Education and Research and local Estonian societies, 5 language days were held (in Helsinki in Estonian House, in Moscow in Embassy of Estonia, in Munich in *Internationales Begegnungszentrum* and in Luxembourg at Estonian School and Estonian Society. The topics of papers were widely different, in view of the proposals and expectations of local listeners. As usual, a review of the Estonian language policy belonged among papers, in that year also about introduction of development plan of Estonian and new Language Act and integration of students arriving from abroad into the Estonian school. Papers were also delivered about the Estonian literature, incl. the reading matter designed for school youth, development of linguistic and writing skills in children, Estonian of expatriate Estonians, word contest, joke heritage, multilingualism, words in speech and letter, metaphors in development of language. Altogether 19 papers were delivered at the Estonian language days abroad.

In 2011 the Society organised four conferences and one training seminar.

November 11 – Jointly with University of Tartu the conference “Estonian in higher school: five years of teaching skills of verbal and written expression in Estonian at University of Tartu”, with papers delivered by Birute Klaas-Lang, Martin Ehala, Kersti Lepajõe, Krista Kerge, Elo Rohult and Piret Kuusk. Followed the panel discussion under moderation of Professor Martin Ehala.

November 25 – Jointly with University of Tartu the international conference “Livonians. Land. People. History”, with papers delivered by Valts Ernštreits, Renāte Blumberga, Eberhard Winkler, Riho Grünthal and Christopher Moseley. Presented were works completed in the International Livonian Year;

there was the gala show in Estonia of the film by Vahur Laiapea “Professor Viitso’s Livonian” (2011).

November 17-18 – Jointly with Estonian National Museum the training seminar “A-B, stick in memory! If you do not stick, I will shove you!” on the role of Estonian in upbringing by values in the primary education.

June 27 – Tartu hosted the traditional J.V.Veski language conference. The topic of XLIV J.V.Veski Day was “Development plan of Estonian and languages of Estonia” featuring four papers. The opening paper was delivered by Jüri Valge on the topic “The initial half-year of development plan of Estonian”. Tõnu Tender delivered a paper “Wolf in the guise of sheep? Foreign languages in development plan of Estonian”. Birute Klaas-Lang spoke on the topic “Does the national university in Estonian have a future perspective?” and Anna Verschik delivered her micro-research “Language policy and attitudes of ‘aliens’”.

September 23 – Annual student conference held in Tallinn University to celebrate the Day of European Languages. Speaking about their language research works were bachelor and master programme students of Tallinn University and University of Tartu, delivering altogether seven papers. The papers were topically divided into two parts: linguistic topics and topics concerning school and language instruction.

The Society organised, jointly with Ministry of Education and Research and the Vastseliina parish government the poll for the award of Linguistic Feat 2010, eventually granted to the team of NGO Ark of the Lord and Estonian Deposit Library for voice instruction in Estonian designed for technical aid devices of the visually impaired people. The Society co-organised the final event of the Linguistic Feat, held on 14 March 2011 at Vastseliina Gymnasium.

March 24 – Annual meeting of the Estonian Mother Tongue Society was held in the large hall of Institute of the Estonian Language, where Annika Kilgi delivered an academic paper “Anton Thor Helle’s editors hand”. Report of the Society for its 91<sup>st</sup> year of activities (2010) was presented by Academic Secretary Killu Paldrok.

Estonian Mother Tongue Society is one of the organisers of Ferdinand Johann Wiedemann prize, beside the Institute of the Estonian Language, Ministry of Education and Research, Language Inspectorate, Väike-Maarja Gymnasium and Väike-Maarja parish government. The language day was held on 27 April in Väike-Maarja. Laureate of the Wiedemann’s language prize for 2011 Tiit-Rein Viitso delivered a paper “Formation of the space of Estonian” and candidate for the prize Valve-Liivi Kingisepp delivered a paper “The interesting old Estonian literary language”. Student of Väike-Maarja Gymnasium Kätlin Pohlak considered the linguistic topics carried in dailies “Postimees” and

“Päevaleht” in 2010. Laureate of the language prize Tiit-Rein Viitso planted a name tree in the language oak grove.

At six meetings with papers (three in Tallinn and three in Tartu) 16 papers were delivered.

On 10 March, speaking at meeting with papers dedicated to the 70<sup>th</sup> birthday of Mati Ereht were Heli Laanekask, Liina Lindström and Helen Plado. On 24 March, academic paper at the Society’s annual meeting was delivered by Annika Kilgi. On 27 April, the paper at special pedagogy-focussed meeting with papers was delivered by Anna Maria Ülviste, Piret Soodla and Mairi Männamaa. On 31 May speaking on the topic “Language, adaptation and attitudes” were Kadri Sõrmus, Helena Sulkala and Kadri Koreinik. On 18 November the meeting with papers dedicated to 100<sup>th</sup> anniversary of Paula Palmeos was held in Tartu, with Tõnu Seilenthal, Jaan Õispuu, Piret Norvik and Marje Joalaid speaking. Speaking at presentation of Wiedemann’s grammar on 20 December were translator of the work Heli Laanekask and the editor Ellen Niit.

Estonian Mother Tongue Society successfully continued organisation of school language days restarted in 2009 upon initiative of Annika Kilgi. In 2011, there were 9 language days held with the total of 23 papers, in every educational institution from one to three papers. Speaking at schools were Estonian philologists of different areas; the language days were directed in the first place at school students of periphery. At Pärnu Koidula gymnasium the topic of the day was hazards jeopardizing Estonian, and Livonian in Salatsi and Kuramaa; at Haapsalu gymnasium the language editors and publishers; at Kilingi-Nõmme gymnasium again Livonian in Salatsi and Kuramaa; at Kihnu basic school at the Day of Livonian the Livonians today and the language of Kihnu and Livonian; at Vinni-Pajusti gymnasium acquisition of language by child and its research; at Paide gymnasium at the Beautiful Estonian Day the skill of expression and computer ‘speaking’; at Ruhnu community centre the Swedish place names of Ruhnu and linguistic troubles and delights; at Saaremaa co-educational gymnasium Livonian in Salatsi and Kuramaa and Livonian names. Papers were also delivered within framework of the Estonian language days abroad: in Luxembourg the European school heard three papers on learning Estonian and metaphors.

Since 26 March 2010, head of Language Working Group of the Estonian Mother Tongue Society has been Krista Kerge. Language Working Group comprises Reili Argus, Külli Habicht, Reet Kasik, Katrin Kern, Einar Kraut, Helika Mäekivi, Urve Pirso, Peeter Päll, Maire Raadik and Tiit-Rein Viitso. In 2011 the Language Working Group held 5 sessions, plus 1 field session. The Language Working Group composed a memorandum to State Examinations Commission on correction of state examination essays, it participated at discussions and conferences on development plan of Estonian and submitted

its proposals, it participated at elaboration of procedure of implementation of the literary language norm relating to Language Act, it cooperated with academic geologists and historians of Tartu and Tallinn at streamlining the terminology and settling the issues of orthology, it coordinated the Society's project on research of textbook language and students' orthology studies, it initiated the public discussion of Rail Baltic's name form of cross-country propagation and achieved replacement of the faulty name, it replied to people's letters and advised the compilers of Standard Estonian Dictionary ÕS.

Released in 2011 from print were:

- Estonian Mother Tongue Society Yearbook 56 (2010) / Editor in chief Mati Ereht, editor Tiiu Ereht. Estonian Mother Tongue Society of the Estonian Academy of Sciences, Tallinn, 2011, 309 pp.;
- Language magazine Oma Keel, N 1, 102 pp.;
- Language magazine Oma Keel, N 2, 107 pp.;
- Orthology of Sentence. Instructions and Exercises / Mati Ereht. Estonian Mother Tongue Society of the Estonian Academy of Sciences, Tallinn, 2011, 182 pp.;
- Instruction in the Expression in Estonian to Higher Schools / Mati Ereht. Estonian Mother Tongue Society of the Estonian Academy of Sciences, Tallinn, 2011, 183 pp.;
- Livonians. History, Language and Culture / Compiled and edited by Renāta Blumberga, Tapio Mäkeläinen, Karl Pajusalu. Foundation of the Estonian Language, Tallinn, 2011, 436 pp. + CD;
- Kārļi Stalte's Livonian Primer-Reading Book = Jelzi sōnā. Ābēd and īrgandōks lugdōbrōntōz / Edited by Renāta Blumberga. Livonian Culture Society, Riga, 2011, 144 pp.;
- Wiedemann, Ferdinand Johann. Estonian Grammar / Translated by Heli Laanekask, edited by Ellen Niit. Estonian Mother Tongue Society of the Estonian Academy of Sciences, Tallinn, 2011, 711 pp.

The library of the Estonian Mother Tongue Society was replenished in the reporting year by 65 items of printed matter, obtained by exchange, donation and purchase. The library keeps on record 6 268 inventory items of printed matter.

## **ESTONIAN UNION OF THE HISTORY AND PHILOSOPHY OF SCIENCE**

Associated with the Estonian Academy of Sciences  
4.02.1998

Founded 1967

Membership: 62 active members, 7 honorary members, 6 collective members

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Academic Secretary: Erki Tammiksaar,  
starting from 20.05.2011 Tarmo Kiik, Tel: +372 5344 8546

Estonian Union of the History and Philosophy of Science, associated with the Estonian Academy of Sciences, is divided into Tallinn and Tartu branches. It is a member of the Baltic Association of the History and Philosophy of Science and a member of both autonomous divisions of the International Union of the History and Philosophy of Science, of which the first embraces the history of science and technology and the other the logic, methodology, and philosophy of science.

The Board of the Union met once in the reporting year, the general meeting was held in Tartu, in the Karl Ernst von Baer Centre of Research into History of Science of the Estonian University of Life Sciences on 20 May. The general meeting approved the activities report for 2010 and the working plan for 2011.

2011 evidenced changes in the leadership of the Union. The former Chairman of the Board of the Union, a member of the Estonian Academy of Sciences Jaak Aaviksoo stood down in connection with taking the office of the Minister of Education and Research, and the need to maintain neutrality in handing down decisions. That neutrality could have been compromised if he had retained the post of Chairman of the Board. At the annual meeting Professor Peeter Määrsepp of Tallinn University of Technology was elected new Chairman of the Board. Erki Tammiksaar withdrew from the post of Academic Secretary desirous of dedicating more of his time to research. Tarmo Kiik, a doctoral student of the University of Tartu was elected as the new Academic Secretary at the annual meeting of the Union.

In 2011, the project of Biographical Lexicon of the Estonian Science ended and all related fees were paid out. In connection with the termination of the project Raul Juursoo left the position of the compiler of the Lexicon. The po-

sition of the second compiler was quit by Terje Lõbu already at the end of 2010. Because the Union lacks, for the time being the funds to print the 3<sup>rd</sup> and 4<sup>th</sup> volumes of the Lexicon, it was decided to enter the biographies contained in all volumes into the Wikipedia environment in Estonian. That will make the Lexicon available to wider public. As of the end of December 2011, ca. half of biographies of the 3<sup>rd</sup> volume of the Lexicon were put up in Wikipedia environment.

In July 2011, the special issue of the journal *Baltic Journal of European Studies* [*Baltic Journal of European Studies* (2011), Vol. 1, No 1 (9)] published the most remarkable papers of the XXIV International Baltic Conference on the History of Science held in 2010, co-promoted by the Union.

The XXIV International Baltic Conference on the History of Science was followed up by a series of seminars, the first of which was held in Tallinn in 2010, the second seminar was held in Helsinki on June 27, 2011.



## ESTONIAN LEARNED SOCIETY IN SWEDEN

Associated with Estonian Academy of Sciences

19.03.1999

Founded 1945

Membership: 85 active members and 3 honorary members

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SWEDEN

Chairman: Tõive Kivikas, Tel: +46 8 755 9450, toive@kivikas.com

Secretary: Diana Krull, Tel: +46 8 162 852, diana.krull@ling.su.se

South-Sweden Division: 29 active members, 3 honorary members

Address: c/o Paavo Roos, Näckrosgratan 2, SE-25271 Råå, SWEDEN

Chairman: Paavo Roos, Tel: +46 42 26 0334, paavo.roos@telia.com

Secretary: Kristiina Savin, Tel: 046 46 12 2945, kristiina.savin@kultur.lu.se

The Estonian Learned Society in Sweden assembles Estonian scholars in Sweden as a forum where they can present their work in Estonian.

In 2011, the Society organized in Stockholm the regular Annual Meeting, six meetings with papers, a visit to Uppsala University, and celebrated the 92<sup>nd</sup> anniversary of the Estonian University of Tartu. At the Annual Meeting, Mai Raud-Pähn, MA, delivered a paper titled: "Figurative Depictions on Baltic Silver and their Motifs". The rest of the papers presented in 2011 dealt with varying topics: innovations in motor technique (Prof. Mart Mägi); good leadership (Assoc. Prof. Tõive Kivikas); art work in Haljala church (Minister Margit Nirgi); the Tartu Observatory (Prof. Michael Lindberg); and *in vitro* fertilization (ScM, MA Elo Madisson).

At the excursion to the Department of Modern Languages of Uppsala University, Prof. Raimo Raag and Assoc. Prof. Virve Raag spoke about their research and teaching work in the Estonian language and showed places of historical interest in Uppsala.

At 92<sup>nd</sup> anniversary celebration, the Estonian Ambassador in Sweden, Jaak Jõerüüt, presented a paper on diplomacy in the 21<sup>st</sup> century. In the musical part, Liine Carlsson, soprano, and Klarika Kuusk, piano performed music by Ernesaks, Aavik and Chopin.

The South-Sweden Division of the Estonian Learned Society held an Annual Meeting and three meetings with papers.

At the Annual Meeting on 13 February Professor Catharina Raudvere of the University of Copenhagen delivered a lecture on the topic "Religion and politics in post-Communist Balkans ("Religion och politik på det postkommunistiska Balkan").

Speaking at the meetings with papers were: Doctoral student of Lund University Helena Faust on the topic “Viruses related to generation of cancer and their immunology”; Professor of Landscape Architecture Tiina Sarap of Swedish Agricultural University presented her University (SLU); Professor of Fenno-Ugric Languages Raimo Raag of Uppsala University considered the history of Estonian migration.

## **ESTONIAN LITERARY SOCIETY**

Associated with the Estonian Academy of Sciences

23.01.2001

Founded in 1907

Members: 291 members (incl. 39 lifetime members, 13 honorary members and 21 regional representatives)

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Representative in Tallinn: Kristel Kiigemägi, tel +372 5664 4243,

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In 2011 the Estonian Literary Society (hereafter Society) carried on several previously initiated activities as well as some projects launched during the 'year of reading' (Book Now 2010). Many long-term projects also continued such as "Rongiluule" (Train Poetry) and the work on presenting Tartu as a candidate for the title of a UNESCO creative city as a city of literature. Co-operation was also once again one of the main principles in the activity of the Society as many projects were undertaken together with other literary organisations.

In April the traditional session of the annual review of literature took place where the 2010 Estonian prose, poetry and drama were discussed. In order to vary the form of the event the overviews of each genre were given through dialogues.

On 23<sup>rd</sup> of April the day of Book and Rose was celebrated in Tartu as a warm-up event of Tartu International Literary Festival "Prima Vista". In the end of April the representatives of the society, and the organising committee of "Prima Vista" visited Valga where various literary events took place during a day dedicated to August Gailit.

From 5th to 8th of May the Tartu International Literary Festival "Prima Vista" took place, taking its activities also to Tallinn for a day. The main organisers of the festival are the non-profit society Festival Prima Vista, Estonian Literary Society, the Tartu department of Estonian Writers' Union, Tartu Public Library, and the Library of the University of Tartu. The patron of Prima Vista 2010 was Rein Raud and the main theme was "Change of course". The programme of the festival included lectures, discussions, book presentations, poetry readings and many other events. In addition to Estonian writers many foreign guests took part in the festival: Russian-Israeli writer Dina Rubina, German writer Kathrin Schmidt, the legendary British punk poet John Cooper

Clarke and Finnish politician Erkki Tuomioja. The traditional book fair was also held in front and inside of the Library of the University of Tartu and the Park Library was open at the city centre.

The spring season ended with the traditional spring school for the students of literature of the University of Tartu. In August another traditional gathering of literary scholars, the Nüpli summer school was organised in co-operation with the Estonian Literary Museum.

The main event of the autumn season was the interdisciplinary cultural festival "Crazy Tartu" which took place in Tartu for the second time. The initiator of the festival was writer Jaan Malin, the festival was organised in collaboration with the Estonian Literary Society and the Estonian Writers' Union. This new festival, joining literature, art and music was subtitled "Morbid"; it took place in Old Anatomical Theatre of the University of Tartu. The programme included an exhibition of works by Kristina Viin, Enn Põldroos, Priit Pangsepp, Priit Pajos, Jaan Toomik, Anne Rudanovski, Rauno Thomas Moss, Asko Künnap, and Albert Gulk. The writers participating at the festival were Andres Ehin, Ervin Õunapuu, Mehis Heinsaar, Triin Soomets, Maarja Pärtna, Urmas Vadi, Carolina Pihelgas, Sven Vabar, Asko Künnap, Karl-Martin Sinijärv, Valdur Mikita, Elo Viiding, Luulur and KreatiivRoomet. There were guests, too: Peter Sragher (Romania), Philip Meersman (Belgium), Peter Waugh (UK/Austria), Sergej Birjukov (Russia/Germany), and Fjorton (Belgium). The musical part included the piece for zither by Helena Tulve "Silmaja" performed by Kristi Mühling, and the premiere of the choir piece "Võrusse ehk Võrru" written by Mart Siimer.

The year ended with poetry nights at the café of the University of Tartu. The aim of these poetry events is to offer an overview of contemporary Estonian literature, appreciate live performances by the authors, and to renew an old tradition of literary events at the cafés of Tartu, especially the university café. The poetry nights will continue in 2011 and will hopefully become a cherished tradition.

In 2010 the work also continued on presenting Tartu as a candidate for the title of a UNESCO creative city as a city of literature. The numerous events and undertakings related to the year of reading caused a delay, so the application necessary for the presentation will be completed in 2011.

In addition to scholarly seminars and literary festivals the society also continued organising poetry nights in Tartu and also in Tallinn. A literary performance "Sea for Ten Voices", prepared in co-operation with the Estonian PEN Club also took place in Tallinn in autumn of 2011.

## LEARNED ESTONIAN SOCIETY

Associated with the Estonian Academy of Sciences  
23.01.2001



Founded 1838

Membership: 108 active members, 16 honorary members

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Vice-Chairpersons: Tiit Rosenberg, Tel: +372 737 5650, [tiit.rosenberg@ut.ee](mailto:tiit.rosenberg@ut.ee)

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The Learned Estonian Society is a scientific society operating at the University of Tartu bringing together representatives of sciences concerned with Estonia. The goal of the Society is to present and mediate to the public the newest results of research, while also providing to younger scientists an opportunity to get experience in public academic presentation and releasing publications.

In 2011, 14 meetings were held with 23 papers delivered to the audience comprising 391 participants. There was a scientific conference held on November 25 dedicated to two anniversaries – the newspaper “Das Inland” was 175 and the last fascicle of the epic poem “Kalevipoeg” was 150. The conference held jointly with the recently founded Estonian Print Museum in the latter’s premises consummated putting into proper order of the collection of stereotype plates of publications of the Society. The said undertaking was supported by Cultural Endowment of Estonia and was presented at the exposition, as handed over to Estonian Print Museum. The papers delivered in 2011 distributed as per topical areas as follows: history – 8, (in 2010 – 3), archaeology – 4 (4), philology – 4 (1), history of building – 2 (-), other areas – 2 (8).

Exciting keener interest was Peeter Järvelaid’s paper “The story of those having departed from Estonia in 1939-41 in the process of Umsiedlung and Nachumsiedlung” (43 people) and Heiki Valk’s paper delivered at the annual meeting “Setomaa *tsässonas* in popular belief and customs” (41 people).

Released by Society was another Yearbook, containing articles published on the basis of papers delivered in 2010. Ulrike Plath was awarded the prize of 160 euro for the article considered the best in the Yearbook 2009 “Livonia’s asparagus: obliterated memories from Baltic history of gardening in 18<sup>th</sup> and 19<sup>th</sup> C.”

The Society performed, under the procedure of national heritage surveillance, smaller archaeological excavations in the preservation zone of several protected objects of antiquities in connection with road widening or building. The inspection and trial excavations performed in Põlvamaa at Leevi village gra-

veyard, in Karksi parish at Lilli Annemäe, and at Viljandi on real property at Ranna Blvd 6 however did not reveal anything of interest to science.

Published in 2011 by Learned Estonian Society:

Õpetatud Eesti Seltsi aastaraamat = Annales Litterarum Societatis Esthonicae  
2010. Tartu, 2011, 304 p.

## **ESTONIAN MUSICOLOGICAL SOCIETY**

Associated with the Estonian Academy of Sciences

21.06.2004

Founded 1992

Membership: 77 members, 1 honorary member

Address: Rävåla pst 16, 10143 Tallinn, ESTONIA, emts@hot.ee

<http://www.muusikateadus.ee>

Chairman: Toomas Siitan, Tel: +372 529 9117, [tsiitan@estpak.ee](mailto:tsiitan@estpak.ee)

Estonian Musicological Society brings together researchers in music and people entertaining the interest to scholarly study of music and supports research in all fields of musicology in Estonia.

The achievement of 2011 was releasing the third issue of the musicological year book *Res musica* dedicated to theory of music, in cooperation with Department of Musicology of Estonian Academy of Music and Theatre. *Res musica* is a periodical issue with international editorial board, publishing peer-reviewed scientific articles from all areas of musicology. The year book is open to international cooperation. The issue is prevalently in Estonian however it contains bulky resumes of articles in English or German.

Upon organisation of the Society, regularly held every year are two meetings with papers, in spring at Tartu and in autumn in Tallinn. At Society's Day of Tartu on 16.04.2011, papers were delivered by five researchers of Estonian Academy of Music and Theatre, the main speaker being the honorary member of the Society Folke Bohlin of Lund University. The topics were musical theatre and the musical life of 17<sup>th</sup> C.

The autumn Leichter Day in Tallinn on 21.11.2011 united the regular annual meeting of the Society and meeting with papers, dedicated to anniversaries of Kristel Pappel and Anu Kõlar.

To present and propagate the speciality of musicology the Society arranged in the reporting year the essay contest on music to gymnasium students, the festive completion whereof and handing over the prizes taking place in Estonian Academy of Music and Theatre on 23 March.

Tradition of the Society is also organisation of culture-lore trip at beginning of September. In 2011 the Society visited Setomaa.

## ESTONIAN PHYSICAL SOCIETY



Associated with the Estonian Academy of Sciences

14.06.2005

Founded 1989

Membership: 298 active members, 4 honorary members

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<http://www.fyysika.ee/efs>

Chairman: Kaido Reivelt, Tel: +372 737 4623, [kaidor@fi.tartu.ee](mailto:kaidor@fi.tartu.ee)

Traditional Estonian Physics Days were held in the reporting year on 22-23 March at Tartu, in Tähe St 4 study building of the University of Tartu. The Physics Days were organised by Kaido Reivelt, Aile Tamm, Jaak Jõgi and Riina Murulaid. Within the framework of Days, the general meeting of the Society was held on 22 March, approving the activities' and economic report of the Board of Society. The working day was completed with the traditional Society night in the cafe at Tähe 4.

At Estonian Physics Days, the annual prize of the Society was announced. It was awarded to Ivo Heinmaa (Institute of Chemical and Biological Physics) for design and successful implementation of low-temperature high-resolution solid TMR measuring heads.

The Yearbook of Society 2010 (eds. Anna Aret, Helle Kaasik and Piret Kuusk) appeared. The Society's list [seltsid.efs@lists.ut.ee](mailto:seltsid.efs@lists.ut.ee) and website ([www.fyysika.ee/efs](http://www.fyysika.ee/efs)) are administered by Kaido Reivelt

March 9-10 – at the 58<sup>th</sup> Physics Olympiad of Estonian school youth the special prize of the Society (annual subscription to “Scientific American”) was granted to Jaan Toots (Tallinn gymnasium in science and humanities).

Upon leadership of Taavi Adamberg and Alex Nõomaa the Science Bus continued its work. Two new performances were worked out: biology and magic (black art) performance. 75 trips of science bus with 6 programmes were organised. Within the framework of every trip, 1-3 schools or events were visited. Earnestly engaged in science theatre performances were ca. 25 students, they visited 49 schools. Upon initiative of the team of science bus, the Department of Natural Sciences and Technology of the University of Tartu was, for the fifth time successively, the venue of course “Science in topical lectures”, attended by ca. 40 and finished by 16 students of different specialities, gaining the initial experience in doing science theatre and popularising science.

September witnessed release of the first part of physics textbook for higher schools in Estonian – “Fundamentals of Physics” by David Halliday, Robert



Resnick, Jearl Walker. History of completion of the translation is long – its process was launched as early as in 2007. Especial thanks are extended to the editor Piret Kuusk and the layout editor Atko Rimmel, whose calm tenacity warranted eventual completion of printing. The second part of the textbook will appear in March 2012. Publication of the textbook is supported by the state programme “Compilation and issuing higher school textbooks in Estonian in 2008-2012”, the University of Tartu and the Estonian Academy of Sciences.

The Society carried on with developing the physics portal ([www.fyysika.ee](http://www.fyysika.ee)). Promoted by editor-in-chief of the news portal ([www.fyysika.ee/uudised](http://www.fyysika.ee/uudised)) Aile Tamm, a team of translators/editors was set up (Stiina Kristal, Uku Pütsepp, Anu Mets), regularly mediating scientific news from foreign sources. Besides that we have successfully goaded the Estonian researchers to write short articles reporting their research outcome, which have also appeared in the news portal.

The Society has organised, jointly with Science School of the University of Tartu the science camps of the University ([www.teaduslaager.ee](http://www.teaduslaager.ee)). In 2011, the science camp was held in two shifts, from 11-17 July and from 18-25 July in the Kloogaranna youth camp. Participating in the first shift were 120 5-7 form students, in the second shift 102 8-9 form students. In both shifts the students were distributed into five groups, every day featuring one topic. The topics were physics, chemistry, materials science, biology, and rocket science. Supervisors were undergraduates of the University of Tartu and graduate students; giving a hand at preparing the camp were also doctoral students and researchers.

The Society jointly with Department of Natural Sciences and Technology of the University of Tartu and Science School of the University continued the programme of workshops in physics, chemistry and biology, where smart and motivated students of 7-12 forms were offered special training basing on experiment in natural sciences (physics, chemistry and biology), to help make up for differences of possibilities of schools when providing natural science education. There were four programmes in progress (two in physics, one in biology and one in chemistry), every programme  $8 \times 4 = 32$ h. In 2011, 455 workshops were held; involved were (total for two years of training) 148 groups, attended by ca. 1 500 students.

Division of teachers of physics organised a seminar from 6-8 January at Saka. Subjected to consideration was training in research at basic school and at gymnasium within the course “Basics of physical treatment of nature”. Division was engaged in coordinated common effort with a view to compiling the schedule of distribution of classes of five obligatory courses of the gymnasium.

June 27-29 2011 – the 9<sup>th</sup> summer school of physics teachers held in Tallinn at Institute of Cybernetics and Institute of Chemical and Biological Physics. Attending were 42 teachers. The teachers heard lectures and visited laboratories, discussed chaos and complex systems, solitons, fractals, Estonian magnet laboratory, nuclear magnet resonance (NMR) etc. They visited Riigikogu (Parliament) and met with Member of Academy Ene Ergma.

Thanks to efforts undertaken in all earnest by researchers of Institute of Chemical and Biological Physics, 16 physics teachers could visit CERN on 22-29 October. They heard lectures on history of CERN, elementary particles and their research, subtleties of accelerators and detectors. They looked at the linear accelerator, whence starts the flow of protons heading towards LHC, and the cyclical accelerator of ions. They visited CCC (control centre of control centres of detectors) and reached the distance of 10 m from LHC (80 m deep). The working language was English; the event was funded by Ministry of Education and Research.

November 11-12 – 2<sup>nd</sup> autumn seminar of physics teachers in Tartumaa at Voore was held, with the main topic “New physics curriculum and its application”. The opening lecture was delivered by Member of Academy Peeter Saari, the teachers were presented new study materials, a model class on energy was held. Description of training process in curriculum of gymnasium was analysed and complemented, the physics teachers of basic schools participated in practical work carried out on the basis of workshops. The network of physics teachers is available on website [www.fyysika.ee/vorgustik](http://www.fyysika.ee/vorgustik).

At the end 2011, finalised was the first gymnasium physics textbook corresponding to the new curriculum initiated by the Society – Indrek Peil’s “Mechanics”. The textbook will be issued in traditional hard copy and also as e-textbook. Agreements have been made to release the remaining gymnasium textbooks, corresponding to the new curriculum.

In that year the Estonian Physical Society organised the activity of GLOBE Estonia ([www.globe.ee](http://www.globe.ee)), using for that purpose the means of European Social Fund. Contest of GLOBE research works was carried out; on 10-13 March there was training in seasons of the year and bioms at Võru; on 27-29 June remote monitoring summer school at Nelijärve; on 8-11 August GLOBE summer camp at Jõulumäe (attended by 150 teachers and students); on 23-24 September the students’ conference at Paide gymnasium and on 2-3 December the teachers’ seminar in Tartu. During the whole year we prepared the Estonian air pollution measurement campaign ([www.fyysika.ee/ohusaaste](http://www.fyysika.ee/ohusaaste)), we created the website presenting the basics of remote monitoring ([www.globe.ee/kaugseire](http://www.globe.ee/kaugseire)). The Estonian delegation in the composition Kaido Reivelt and Ketlin Piir participated at the GLOBE European and Eurasian annual conference in Ukraine, where Kaido Reivelt was elected member of

board of GLOBE Europe and Eurasia. The main drivers of the GLOBE programme have been Ketlin Piir, Karli Kütt and Laura Altin, in 2011 closer cooperation was maintained with Kilingi-Nõmme gymnasium, Paide gymnasium and Kääpa basic school.

Promoted by Division of Young Physicists, on 27-29 June there was a triple event held in Nelijärve, consisting of summer school on exact sciences of the Society, GLOBE remote monitoring summer school and Energy Academy of the University of Tartu. Attending were nearly 200 school students and young scientists from various corners of Estonia. On 28-30 October the Voore holiday centre hosted the Society's autumn school on exact sciences, attended by 92 university students, scientists and members of faculty. They heard over 30 hours of lectures and seminars. The work was carried on in parallel in two halls. The topics considered were biophysics, environmental physics, space and nanotechnologies, psychology; the participants discussed topics of education in physics. The autumn school was also the venue of meeting of the "Good faculty-member's club" with the international team Estonian Student Satellite. Organisers were Kaido Reivelt and Ketlin Piir.

In the reporting year, the undertakings of the Society were supported by Institute of Physics of the University of Tartu, National Institute of Chemical Physics and Biophysics, Estonian Academy of Sciences, Ministry of Education and Research, Tiger Leap Foundation, Council of the Gambling Tax, the University of Tartu, Tartu Observatory, and Institute of the Estonian Language. We appreciate all supporters and look forward to continuation of cooperation.

## ESTONIAN ASSOCIATION OF ENGINEERS

Associated with  
Estonian Academy of Sciences  
23.09.2008



Founded 1921 Estonian Union of Engineers  
Re-founded 10.12.1988 Estonian Association of Engineers  
Membership: 13 members (legal entities), incl. 1400 individual members  
Address: Liivalaia 9, 10118 Tallinn, ESTONIA  
<http://www.insener.ee>  
President: Arvi Hamburg, Tel: +372 630 3130, +372 516 2026,  
[inseneronlooja@hot.ee](mailto:inseneronlooja@hot.ee), [arvi.hamburg@gaas.ee](mailto:arvi.hamburg@gaas.ee)

Estonian Association of Engineers is an NGO, acting in public interests. The Association is an umbrella organisation, bringing together in the Republic of Estonia the professional organisations of engineers and trainers of engineers. Welcome too are innovative employers, interested in taking to use engineering knowledge in their companies.

MISSION – promotion of development of Estonian engineering sciences, development and innovation, and respective educational policy

VISION – knowledge- and innovation-based society. The society will value knowledge.

Members of the Association in 2011:

- Estonian Society for Biomedical Engineering and Medical Physics
- Estonian Association of Civil Engineers
- Estonian Society for Electrical Power Engineering
- Estonian Electronics Society
- Estonian Association of Mechanical Engineers
- Estonian Transport and Roads Association
- Põlva Association of Engineers
- Estonian Mining Society
- Estonian Association of Engineers for Heat Engineering
- Estonian Association of Systems Engineers
- Tallinn University of Technology
- Estonian University of Life Sciences
- KH Energia-Konsult

In the reporting year, there were five meetings of the Board and one General Assembly

November 14 – a roundtable on the topic “Engineer’s competence, ethics and responsibility”, considering the following themes:

- Unified output-based competence of academic and professional recognition;
- Cohesion of Estonian Qualification Framework with European Qualification Framework for Lifelong Learning (EQF)
- Mapping of engineer’s professions, streamlining of the system of engineer’s professions and principles of laying out professional standards;
- Development of curricula of higher schools and starting professions;
- Responsibility of a professional person, his or her ethics.

Main areas of activity of the Association in 2011:

#### COORDINATION OF PRINCIPLES OF PROFESSIONAL STANDARDS

The priority of the Association for implementation of the Professions Act is mapping of the whole engineering domain, coordination of principles of new professional standards and embedding requirements of the labour market in professional standards.

Recommendation of the Association as regards the professional standards is the following:

6<sup>th</sup> level (under Estonian Qualification Framework) Engineer’s starting profession awarded by applied higher school.

The title of Engineer granted by the body awarding professions (professional association)

7<sup>th</sup> level (under Estonian Qualification Framework) Diploma Engineer’s starting profession awarded by university

The title of Diploma Engineer granted by the body awarding professions (professional association)

8<sup>th</sup> level (under Estonian Qualification Framework)

The title of Authorised Engineer granted by the body awarding professions (professional association)

Starting profession is awarded by higher school and it is not related to responsibility. Its owner is not yet the specialist with vested rights of responsibility, and he or she must strive to obtain that status through possession of professional work experience and passing complementary further education. The employer will be delivered information about readiness of the employee to enter the labour market, and his or her further desire or capability to enhance the qualification. The body awarding professions will grant the qualification to the applicant, who has work experience and has successfully passed complementary further education. He or she can then fulfil, in the labour market the tasks of engineer’s work related to responsibility, being responsible for own performance and that of subordinates.

#### COMPOSING ARCHIVES MATERIALS

There was composed the list of engineers, to whom the Association awarded the profession in 1988-2004. The list features 220 professional engineers. One can see how the further certification of qualification occurred, whether or not prolongation was requested.

#### CONTRIBUTION TO JOURNAL INSENERIA ON ENGINEERING AND MANUFACTURING

Systematic articles to journal Inseeneria for popularising engineering culture and engineering education. Perfecting consolidated material for special use of the Inseeneria Gymnasium, presenting opportunities to study at vocational schools, applied higher schools and higher schools in engineering specialities.

#### PRESENTATION OF STUDY OPPORTUNITIES IN THE AREA OF TECHNOLOGY IN GYMNASIUMS

Jointly with Tallinn University of Technology the Association presented at the Rocca al Mare school the engineering sciences and opportunities of studying in that area. After that the students of leaving forms of the secondary school made their choice as regards the electives. Under study modules the instruction will start in 2012.

#### COMPOSING OF A BOOKLET PRESENTING THE ESTONIAN ASSOCIATION OF ENGINEERS

Content of the booklet presenting the Association: historical background of the Association, its mission, vision, tasks in proximate future, members of the Association; background of engineer's profession, position of the Association at awarding the professions, statute of the Association.

The consolidated material presenting the Association has been designed, in the first place for those contemplating to join the Association.

In 2011 the Association was joined by KH ENERGIA-KONSULT – one of the largest electricity companies in Estonia operating on basis of Estonian private capital, whose main activity is everything related to electricity.

The title of EuroEngineer was awarded to Andres Jagomägi. Three applications will be considered after accrediting of respective curricula in 2012.

On 9 December the Association celebrated traditionally the Engineer's Day at Academy of Sciences. It was the 23<sup>rd</sup> anniversary of the Association, on occasion of which Member of Academy Raimund-Johannes Ubar delivered a paper on organisation of engineering studies and engineer's role in entrepreneurship.

In 2011, elected the Year's Engineer was Arvi Prikk – thermal energy engineer, and the Year's Engineering Student Toomas Vaimann – power engineer.

President of the Estonian Association of Engineer's represents the Association as head of advisory council of Tallinn Engineering College, as chairman of

Tallinn Polytechnic and chairman of Kehtna School of Economy and Technology, as chairman of bachelor and MSc degree defence commission on electrical engineering of the Energy Department of Tallinn University of Technology and as member of council of Business Management Department of Euroacademy. The Association takes part in Archimedes programmes of Ministry of Education and Research for the purpose of popularising the natural sciences and engineering sciences.

In cooperation with Association of Nordic Engineers (ANE), the Association finalised successfully the survey of expectations of employers on needs of engineering personnel and presumed competence. The results of the interviews will be systematised, yielding consolidated conclusions on expectations of Estonian, Finnish, Danish, Swedish and Norwegian labour market.

In cooperation with national associations of engineers of the European Federation of National Engineering Associations (FEANI – *Fédération Européenne d'Associations Nationales d'Ingénieurs*) the Association prepared the *Eur Ing* competence minimum requirements and drew the draft version of the respective directive of the European Commission.

The Association participated at annual meetings of steering committees of FEANI and at session of General Assembly of FEANI on 3 September in Geneva.

## **ESTONIAN BIOCHEMICAL SOCIETY**

Associated with the Estonian Academy of Sciences

13.11.2009

Founded 1959

Membership: 88 active members

Address: Akadeemia 15, 12618 Tallinn, ESTONIA, info@biokeemiaselts.ee

<http://www.biokeemiaselts.ee>

President: Peep Palumaa, Tel: +372 620 4410, peep.palumaa@ttu.ee

Academic Secretary: Vello Tõugu, vello.tougu@ttu.ee

The goal of activities of the Estonian Biochemical Society is research work, providing support to and promoting teaching effort in biochemistry, and contributing to the related theoretical and applied scientific areas, raising interest in them and upholding and protection of scientific interests of members of the Society.

The Estonian biochemists have a long tradition to organise spring schools for members of the Society and those interested in the topic. In the reporting year that event was held on May 6-7 in the Pariis village of West-Viru County. According to the tradition of spring schools all participants deliver a paper on results of his or her work or else they consider a problem of general nature interesting to biochemists. Those outings are organised alternatively by Tallinn and Tartu biochemists. The curator of Spring School 2011 was Professor Ago Rinken of the Institute of Chemistry at the University of Tartu. It was particularly heartening that geography of participants had broadened – attending were scientists from Tallinn University and the National Institute of Chemical Physics and Biophysics. The picture albums of spring schools are available on website of the Society.

Nominated Chairman of Committee of Fundamental Course of the Federation of European Biochemical Societies (FEBS), the long-serving President of the Estonian Biochemical Society Member of Academy Jaak Järv tendered notice on his intention to stand down from the office of President. At the meeting of the Board held on April 14 in Tartu, elected new Chairman of the Society was Professor of Genomics and Proteomics of Tallinn University of Technology Peep Palumaa.

The Biochemical Society participated also at organising the XXII Estonian Chemistry Days, in whose framework one session was dedicated to biochemistry.

The annual meeting 2011 of the Society was held in the electronic format.



The annual FEBS Congress, held in Turin in the reporting year, was attended by 3 members of the Society delivering papers. Chairman of Committee of Fundamental Course of FEBS Jaak Järv and President of the Society Peep Palumaa participated, as representatives of Estonia in the work of the session of the FEBS Council, held at the end of Congress.

Since 2007 the Estonian Biochemical Society has awarded student science prizes (guidelines of the contest are available on website of the Society). In 2011 the first prize was granted to master student in gene technology of Tallinn University of Technology Eneken Helk for the article published in the journal Analytical Chemistry. The prize was also awarded to master student of Tallinn University Anna-Liisa Ikart. The nominees of the prize presented their results at the Spring School of the Society.

The work of commission on terminology of the Society was consummated by publication on Society's website in December of the draft version of English-Estonian biochemical terms, to be further updated and renovated.

A highlight of the reporting year was the lecture by Nobel Prize Laureate Edmond H. Fischer co-organised by the Society on the topic "The origin of reversible protein phosphorylation as a regulatory mechanism" on November 8 at the University of Tartu. The unique opportunity to hear the Nobel Prize winner was used by students and members of faculty of the University of Tartu and Tallinn University of Technology.

Video recording of the lecture held in Tartu is available in Internet at address <http://www.utv.ee/naita?id=7203>).

Estonian Biochemical Society has been member of the Federation of European Biochemical Societies (FEBS) since 1991.

## ESTONIAN SEMIOTICS ASSOCIATION

Associated with the Estonian Academy of Sciences  
22.12.2010



Founded 1998

Membership: 63 members

Address: Jakobi 2-318, 51014 Tartu, ESTONIA

Chairman: Peeter Torop, Tel: +372 737 6155, peeter.torop@ut.ee

Vice-Chairman: Timo Maran, timo.maran@ut.ee

Estonian Semiotics Association (ESA) organised in the year 2011 semiotics-related and cultural-theoretical conferences and seminars (several of them jointly with the Department of Semiotics of the University of Tartu); issued the journal *Acta Semiotica Estica*, vol. 8, rewarded the authors of the best semiotics article in 2010; proceeded to elaborate the new development plan for the period of 2012-2014, and also finalised the new website ([www.semiootika.ee](http://www.semiootika.ee)). The new website simplifies the navigation for the user and makes it easier for the editors to add new information and to insert changes.

The year started with the introductory session of ESA held in Tartu on the 23<sup>rd</sup> of March. The member of ESA Professor Rein Veidemann gave a reflective meditation titled “Semiotics experience”, followed by a short presentation about ESA by the members of the board Timo Maran and Priit Põhjala. After that the audience was given a chance to ask questions about the association.

April 4-8 – International Zoosemiotics Conference was held in Tartu on the topic “Zoosemiotics and Animal Representations”. The wide range of topics of the presenters were concerned with theory and history of zoosemiotics, applications of zoosemiotics, representation of animals in cultural texts etc. Among plenary speakers were several well known biosemioticians, biologists and philosophers (e.g. Colin Allen, Jesper Hoffmeyer, Graham Huggan, David Rothenberg). In the framework of the conference, a two-day Graduate School for degree students was held.

August 22-26 – International Tartu semiotics summer school was held in Palmse manor on the topic of “Semiotic modelling”, co-organised by the Estonian Semiotics Association. The summer schools of Tartu semiotics are a new series of seminars, aimed at providing an opportunity to deliberate on core issues of semiotics and to promote international cooperation in semiotics. The series of summer schools of Tartu semiotics is designed to carry on, in the new form, the historical summer schools tradition of Tartu-Moscow Semiotics School at Kääriku. The summer school started with a roundtable on the history of semiotic modelling systems, followed by a session dedicated to

current problems of semiotic modelling. Within the framework of the summer school a several days long Graduate School was also held .

November 5-6 – Semiotics Autumn School on the topic “Literary Work in Culture” was held at Viljandi. The event belongs to the series of semiotics autumn schools, initiated by a group of students already in 1999. In the autumn school of this year, the participants focused on issues of inter-semiotic translation. Among the nine speakers who made presentations were researchers and several Estonian famous figures of literature and culture (Kristiina Ehin, Loone Ots, Jan Kaus, Urmas Vadi and others). Delivered papers mainly focused on history of literary texts (and biographies of their creators and characters), development and changes in personal memory of speakers and cultural memory as a whole. More than 40 participants attended the event.

December 17 – Semiotics Association organised a field seminar “Semiotician pays a visit ” at Liivi museum (located in Rupsi village, the Alatskivi parish). The seminar focused on the meaning and importance of semiotics in museum work. Semioticians and those interested in semiotics working at different Estonian museums discussed how the training in semiotics helps to do daily museum work. The participants also pondered over the issue of museum as a feasible place of applying semiotics. Speaking at the seminar were Mari Niitra, elaborating about her role as the head of Juhan Liiv Museum, Kadri Tüür, delving in her experience at Muhu Museum, incl. managing to cope in the Museum Village at Koguva, setting boundaries of the museum territory and bringing to awareness of the community the significance of the role of museum. Ellu Maar spoke about developments in the print-shop of the Estonian Arts Museum, Renata Sõukand talked about her projects in the domain of research on plants in the Estonian Literary Museum and Ivar Puura reflected upon the research on items in collections with the help of novel technologies and renovation of exposition of the Natural Museum of the University of Tartu. Seminar was attended by over 20 participants.

In the spring semester of 2011 the semiotics students organised in Tartu, in cooperation with the Semiotics Association a series of events called “Visual Semiotic Parlour”. Several practicing artists and theoreticians of arts spoke at the seminar series (e.g. Gregor Taul, Marco Laimre, Indrek Grigor). Altogether there were 11 events, attended with papers by artists, architects, and visual semioticians. Topics of the parlour ranged from modelling in computer games to the intersection of boundaries of body and language in art. As a follow-up event, the autumn semester featured a meeting with Silvi Tenjes, speaking about non-verbal communication (see <http://semiosalong.blogspot.com/>).

In 2011 the eighth volume of annual journal *Acta Semiotica Estica* was published. The journal contains 8 articles, plus the sections of “Chronicle” and “Sightings”. The journal focuses on translation semiotics and power relations

in culture. The articles were authored by Daniele Monticelli, Andreas Ventsel, Ott Puumeister, Vilmos Voigt, Terje Loogus, Maarja Läänesaar, Margus Tamm, Kristin Vaik and Maria-Kristiina, Mihhail and Rebekka Lotman. In the rubric “Sightings” Rein Veidemann and Silvi Salupere write about the history of semiotics in Estonia, Igor Gräzin construes post-modernism. As a translated text, Juri Levin’s article on erroneous semiotics was published.

The Semiotics Association also awarded a prize “Semiotic Trace” in 2011 to the best semiotics article of the previous year. The prize was awarded to Andreas Ventsel and Peeter Selg for their article published in journal *Semiotica* (vol. 182) titled “An Outline for a Semiotic Theory of Hegemony”. The prize was handed over to the laureates on the 25<sup>th</sup> of April at the General Meeting of the Semiotics Association. The laureates also delivered an academic paper on political semiotics.

## ESTONIAN CHEMICAL SOCIETY



Associated with the Estonian Academy of Sciences  
5.04.2011

Founded 1919

Membership: 97

Address: Akadeemia tee 15, 12618 Tallinn, ESTONIA

<http://ecs.kbfi.ee>

President: Margus Lopp, Tel: +372 620 2808, [lopp@chemnet.ee](mailto:lopp@chemnet.ee)

Secretary: Elvi Muks, Tel: +372 620 2816, Fax +372 620 2828,  
[muks@chemnet.ee](mailto:muks@chemnet.ee)

Upon initiative of the IUPAC (International Union of Pure and Applied Chemistry) the year of 2011 was announced the international year of chemistry. In connection with that event, the activity of the Society in the reporting year was directed, in a wider scope at disseminating chemistry related information and propagation of chemistry.

In the reporting year the following events were held, co-organised by the Estonian Chemical Society:

- March 29 – exposition in the Tallinn University Library presenting Estonian chemistry, chemists and their publications (organised in co-operation with the Library).
- April 14-15 – 32<sup>nd</sup> Chemistry Days of the Society in Tartu (organised by members of faculty of the University of Tartu J.Järv, A.Rinken, U.Mäeorg, P.Burk and others). On agenda of the Chemistry Days were the following events:
  - Scientific conference
  - Chemistry exposition
  - Exposition of paintings by Estonian authors dedicated to chemical industry.
- September 11-16 – international conference on chemistry: European Symposium of Organic Reactivity (organised by members of faculty of the University of Tartu P.Burk, I.Koppel, J.Järv and others).
- September 23-24 – international conference on chemistry: Sustainable Technologies and Materials in Tallinn (organised by members of faculty of Tallinn University of Technology M.Koel, M.Kaljurand)

The reporting year witnessed the release of the book compiled by H.Hödrejärvi and dedicated to history of education in chemistry “Department of Chemistry of Tallinn University of Technology 1936-2002”, University Publishers, 296 pp. In 2011 the Finnish Society of Chemists elected Helvi Hödrejärvi its foreign corresponding member.

## ESTONIAN SOCIETY OF HUMAN GENETICS

Associated with Estonian Academy of Sciences

5.04.2011



Founded 2000

Membership: 118

Address: Riia 23, 51010 Tartu, ESTONIA, estshg@ebc.ee

<http://www.estshg.ee>

President: Andres Metspalu, Tel: +372 737 5029, andres.metspalu@ut.ee

Secretary: Maarja Kõiv, Tel: +372 522 9126

For the 13<sup>th</sup> time, the EstSHG organized its annual conference. The conference took place on 20-21 October at the Strand SPA and Conference hotel in Pärnu. The composition of the program and the choice of speakers bases upon the principled requirement that those desirous of taking the floor should not have delivered a paper for a minimum of two years. The attendance at the conference of 2011 included the guest speaker Samuli Ripatti (University of Helsinki), and among the best in their respective fields in Estonia – Urmas Varblane, Vallo Tillmann, Tiia Reimand, Eve Vaidla, Viljar Jaks, Teet Velling, Yuri Kolesnikov, Urmas Kõljalg, Reidar Andreson, Sulev Kõks, Reedik Mägi and Andres Metspalu. In order to introduce young and active investigators/scientists the program introduced a session by PhD students. The speakers in that new session included Marina Grigorova, Mari Sepp, Tanel Visnapuu, Allan Olsper and Mari Järve.

Among the most important events of the year, the association with the Estonian Academy of Sciences needs to be highlighted. Additionally, the representatives of the Society were involved in various significant endeavours and collaborated with other organizations within the fields of medicine and genetics. Since the Society is representing medical genetics as a field in Estonia, we are much concerned with the development of the Estonian medical genetics field both in research as well as in organizational matters. The representatives of the Society participated in negotiations with the Estonian Health Insurance Fund regarding the cost compensation of the dietary treatment of heritable metabolic diseases (LCHAD – Long-chain 3-hydroxyacyl-CoA dehydrogenase deficiency, Smith-Lemli-Opitz syndrome) and regarding the treatment compensation of Hunter syndrome. We initiated changes to the Estonian Health Insurance Fund service price list involving clinical as well as cytogenetic analyses. The Society was also represented in the reorganization of the system of Estonian clinical genetics – by combining Tartu University Hospital and the Children Hospital of Tallinn a branch of the Tartu University Hospital Genetics Centre Jointlab was created in Tallinn.

In collaboration with the Estonian Gynaecologists` Society we established new prenatal diagnostics guidelines. As the options in genetic diagnostics are growing daily, and the currently practicing clinician`s workload is ever growing, it is one of the main goals of the Society to propagate genetics as a field by forwarding amicus curiae to the Faculty of Medicine of the University of Tartu.

## **ESTONIAN SOCIETY FOR ECONOMICS**

Associated with the Estonian Academy of Sciences  
16.06.2011

Founded 1930

Re-founded 2002

Membership: 121 individuals and 3 organisations

Address: Kreutzwaldi 1a, 51014 Tartu, ESTONIA

<http://www.emselts.ee/>

President: Rando Värnik, Tel: +372 527 4808, [rando.varnik@emu.ee](mailto:rando.varnik@emu.ee)

Member of Board: Maire Nurmet, Tel: +372 731 3825, [mair.e.nurmet@emu.ee](mailto:mair.e.nurmet@emu.ee)

Member of Board: Inno Kalberg, Tel: +372 5649 3653, [inno.kalberg@emu.ee](mailto:inno.kalberg@emu.ee)

Estonian Society for Economics, re-founded in 2002, is a scientific society, uniting Estonian economists and engaged in promotion of economics in Estonia. The Society was founded as a voluntary non-profit association.

The Society considers itself a legal successor of the Estonian Society for Economics, which was active in 1930-1940. The first Congress of Economists in Estonia held in Tallinn in 1938 was organised by the Estonian Society for Economics. The first annual conference of the ESSR Society for Economics active under the soviet power in Estonia was held on April the 20<sup>th</sup>, 1984. This event was attended by over one hundred economists.

Both legal entities and natural persons can be members of the Society. Institutions belonging to the Society are Bank of Estonia, Tallinn University of Technology and University of Tartu.

Main goals of the Estonian Society for Economics are:

- contributing to the raising the professional level of its members;
- facilitating dissemination of information related to modern economics and providing respective education in Estonia;
- cooperating with other scientific societies of the area in home country and abroad.
- Importance is enhanced by providing support to theoretical and applied research in economics, organisation of communication between economists and exchange of information.

For achieving its goals the Society organises theoretical and practical meetings of mind-sharing, seminars and conferences; it also promotes economics and economic education through press, TV, radio, lectures, etc. The Society makes use of every opportunity to participate in releasing scientific, methodological and subject literature on economic issues.



The Society has developed the tradition of annual conferences, having held by every institution – University of Tartu, Tallinna University of Technology, and Estonian University of Life Sciences – for three years successively. In the recent two years (2011-2012) promoter of the event has been the Institute of Economics and Social Studies of the Estonian University of Life Sciences. Every year, there is one key topic put into the focus. As the topics related to green economy have gained growing importance in Estonian economy, the challenges and possibilities of the green economy were discussed at annual conference of the Estonian Society for Economics in Narva on January 28-29, 2012.

The keynote paper of the conference was delivered by Dr. Patrick Cunningham from Ireland. Into discussion on the issues of green economy contributed Chairman of Board of the Estonian Development Foundation Ott Pärna, Director of Renewable Energy Division of Eesti Energia LTD Ando Leppima, Madis Aben from the Ministry of Finance and Project Leader of Green University of the Estonian University of Life Sciences Kadri Kalle. The discussion was moderated by Professor Rando Värnik. The situation for the time being in the Estonian economics education, in the light of the transitional assessment carried out, was reviewed by Professor Enn Listra from Tallinn University of Technology.

Within the frames of the conference, a trip to the Estonian Power Plant was organised, where participants of the conference were presented the plans of Eesti Energia LTD in the domain of renewable energy.

The conference was attended by 89 economists. Under the programme, 10 papers were delivered. The papers of the conference were published in the form of electronic proceedings.

**ESTONIAN SOCIETY  
FOR THE STUDY OF RELIGIONS**



Associated with the Estonian Academy of Sciences  
16.06.2011

Founded 2006

Membership: 54 members

Address: Ülikooli 16, 50090 Tartu, ESTONIA

<http://www.eaus.ee>

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Academic Secretary: Ülo Valk, Tel: +372 737 5310, [ulo.valk@ut.ee](mailto:ulo.valk@ut.ee)

Estonian Society for the Study of Religions brings together, in its membership a couple scores of researchers of different religions in Estonia. The domain of scientific research of the Society is broad, ranging from traditional systems of belief to world religions and their history. Regardless of secularism apparently dominating in the Estonian society, academic research into different beliefs and their science-based presentation in the tormented modern world is important. Specifically, that is the major goal of the activities of the Society.

Apart from domestic commitments the Society has, since its foundation developed international relations on collegial and organisational level. The Society is member of the leading umbrella organisations in the specialty – International Association for the History of Religions and European Association for the Study of Religions. In 2011 the Society associated with the Estonian Academy of Sciences. The activities of the Society are reported on its website.

The main form of work of the Society is holding meetings with papers and conferences. In a short time it has become a tradition with the Society to organise topical series of lectures. The events are carried out basically in the premises of institutes of the University of Tartu. In recent years the Society has, through its undertakings, integrated with the activity of the Centre of Excellence in Cultural Theory. In 2011 it continued the series of lectures started in 2010 “Religions and societies II”. In the framework of the series six meetings with papers were held, with the topics focussing on various issues in Islam and Buddhism, and also on a problem-range of religious matters in various districts of Russia, in particular: “Islam’s political role in the modernity: theological communal idea, social problems and role of the state” (Elo Süld); “Beliefs meet in Okunevo. An example of religious syncretism in modern Russia” (Aado Lintrop); “Development of Protestant mission in the Komi Republic” (Art Leete); “New data on the /hyppysseuralaiset/-movement in Central Ingermanland” (Taisto-Kalevi Raudalainen); “Nevar Buddhism: the Sanskrit language vajrayana tradition in Kathmandu valley” (Laur Järv);

“Buddhism in today’s Tibet society: the situation in Tibet and in exile (India and Nepal)” (Kadri Raudsepp).

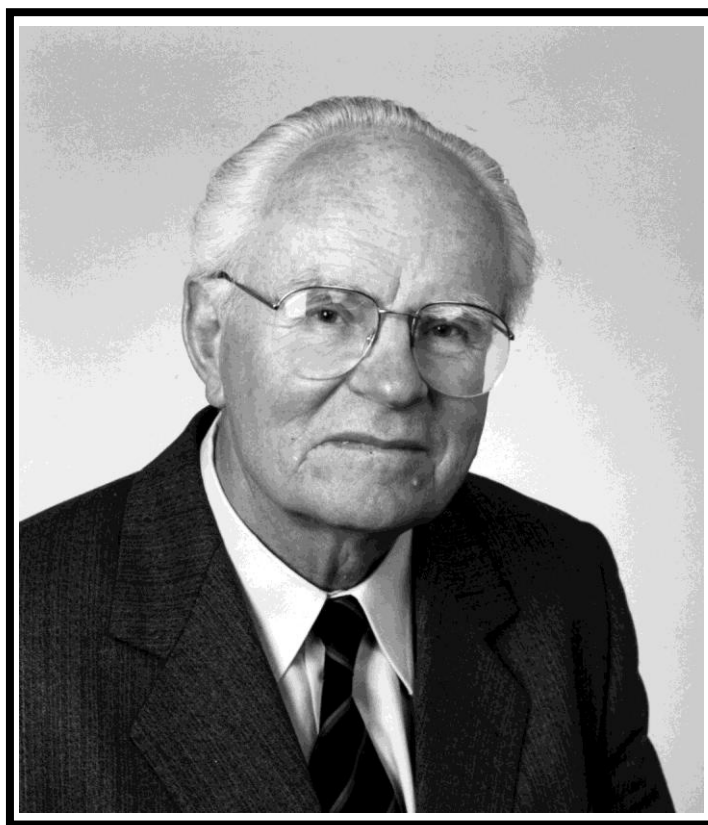
The spring season was finalised by two lectures on 27 May: “On Devil’s back to the Holy City: the consequences and results of a trip (a Saint’s legend in Old Russian literature)” (Enn Ernits) and “Homeland security’s intelligence in Assyria in the 1<sup>st</sup> millennium BCE” (Vladimir Sazonov).

Apart from the series of lectures, there were meetings with papers, attended by researchers of other countries visiting Estonia, beside local speakers. 2011 witnessed three such meetings: “Analysis of the 1<sup>st</sup> column of Behistun ashlar inscription” (Vladimir Sazonov); “What is not strictly forbidden is allowed: the dynamics of religious accommodation amongst the Tangsa in Northeast India” (Meenaxi Barkataki-Ruscheweyh, Göttingen); “The formulaic language of Bulgarian charms: verbal magic techniques in the dialogue with the supernatural” (Svetlana Tsonkova, Budapest). The academic activities of the year were nicely wrapped up by the annual conference of the Society on 4 November, with 12 papers delivered. It is to be pointed out that a noticeable part of the audience at the Society’s events is always constituted by students.

## IN MEMORIAM

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Foreign Member of Academy *Johannes Piiper*  
11.11.1924-2.01.2012

Johannes Piiper was born on 11 November 1924 in Tartu, where his father Johannes Piiper senior was a long-time Professor of Zoology and Comparative Anatomy at the University of Tartu. In 1942 he graduated from the Hugo Treffner Gymnasium and in 1952 from the University of Göttingen Faculty of Medicine. Johannes Piiper defended his thesis for the Doctor of Medicine degree at the same university. After a Postdoctoral Fellowship period at the University of Buffalo in the USA, he returned to Germany and habilitated in physiology at the University of Göttingen in 1960. He continued his academic career at the University of Göttingen by working in the position of a faculty member 1960-1966 and a professor 1966-1992.

The scientific activities of Johannes Piiper were over more than half a century associated with the Max Planck Institute for Experimental Medicine. He started as an assistant in 1953 and progressed through various positions of responsibility to the office of Managing Director. In 1992 he retired from the directorate of the Department of Physiology and continued to lead research as professor emeritus in the composition of a research group at the same institute.

The principal research topics studied by Johannes Piiper were involved with respiration physiology and comparative physiology. He was acknowledged as a world renowned expert in those areas, who had authored close to six hundred publications in various journals and books. He was a member of great many scientific organisations at a national as well as international level, incl. European Respiratory Society, International Society on Oxygen Transport to Tissue, European Society for Comparative Physiology and Biochemistry, etc. He held two honorary doctorates – from the University of Fribourg (Switzerland) and the University of Tartu.

In 1991 Johannes Piiper was elected by the Estonian Academy of Sciences a Foreign Member in physiology. To recognise his work and commitment to Estonia, he was in 2002 bestowed with the Order of the White Star 4<sup>th</sup> Class.

Johannes Piiper died on 2 January 2012 in Göttingen.

ESTONIAN CONTACT POINTS FOR  
INTERNATIONAL SCIENCE ORGANISATIONS  
(whose membership fees in 2011 were covered  
by the Estonian Academy of Sciences  
from a specific allocation of the Ministry of Education and Research)

Estonian contact organisation	International organisation
Estonian Geophysical Committee (Chairman: Rein Rõõm, rein.room@ut.ee)	International Union of Geodesy and Geophysics, IUGG
Estonian National Committee for Geology (Chairman: Dimitri Kaljo, kaljo@gi.ee)	International Union of Geological Sciences, IUGS
Estonian National Committee for IGU (Chairman: Mihkel Kangur, mihkel.kangur@tlu.ee)	International Geographical Union, IGU
Estonian Association of Engineers/ Estonian Systems Engineering Society (contact: Sven Nõmm, sven@cc.ioc.ee)	International Federation of Automatic Control, IFAC
Estonian National Committee for Mathematics (Chairman: Mati Abel, mati.abel@ut.ee)	International Mathematical Union, IMU
Estonian Polar Research Committee (Chairman: Rein Vaikmäe, rein.vaikmae@gi.ee)	ESF European Polar Board, EPB
Estonian National Committee on Astronomy (Chairman: Laurits Leedjärv, leed@aai.ee)	International Astronomical Union, IAU
Estonian National Committee for Mechanics (Chairman: Andrus Salu- pere, salupere@ioc.ee)	International Union of Theoretical and Applied Mechanics, IUTAM

Estonian National Committee for IUPAP (contact: Ergo Nõmmiste, ergo.nommiste@ut.ee)

International Union of Pure and Applied Physics, IUPAP

Estonian Academy of Sciences (contact: Jüri Engelbrecht, j.engelbrecht@akadeemia.ee)

International Council for Science, ICSU

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European Academies' Science Advisory Council, EASAC

Estonian Academy of Sciences (contact: Peeter Tulviste, peeter.tulviste@akadeemia.ee)

Union Académique Internationale, UAI

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European Science Foundation, ESF

Estonian Marine Commission of Estonian Academy of Sciences (contact: Tarmo Soomere, tarmo.soomere@cs.ioc.ee)

ESF Marine Board

ESTQUA (Estonian National Committee for INQUA) (Chairman: Volli Kalm, volli.kalm@ut.ee)

International Union for Quaternary Research, INQUA

Estonian National Committee of Geomorphologists (Chairman: Volli Kalm, volli.kalm@ut.ee)

International Association of Geomorphologists, IAG

Estonian Consortium of National History Collections, Estonian Academy of Sciences (contact: Urmas Kõljalg, urmas.koljalg@ut.ee)

Consortium of European Taxonomic Facilities (CETAF)

COOPERATION AGREEMENTS WITH PARTNER ORGANISATIONS  
(in brackets, the date of signing the currently valid agreement)

1. Austrian Academy of Sciences (12.11.2007)
2. Academy of Sciences of Bashkortostan (15.09.2008)
3. British Academy (04.08.2011)
4. Berlin-Brandenburg Academy of Sciences and Humanities (16.05.2002)
5. Bulgarian Academy of Sciences (02.04.1996)
6. Royal Flemish Academy of Belgium for Science and the Arts (26.03.2004)
7. Chinese Academy of Sciences (26.05.2000)
8. Spanish Council for Scientific Research (19.06.2001)
9. Israel Academy of Sciences and Humanities (19.07.1995)
10. Italian National Research Council (23.04.2004)
11. Lithuanian Academy of Sciences (12.11.1991)
12. Royal Society of London (30.10.1991)
13. Latvian Academy of Sciences (12.11.1991)
14. Macedonian Academy of Sciences and Arts (16.12.1996)
15. Montenegrin Academy of Sciences and Arts (17.10.2005)
16. Polish Academy of Sciences (17.06.1996)
17. French Academy of Sciences (22.03.1994)
18. Royal Swedish Academy of Letters, History and Antiquities (18.01.1995)
19. Royal Swedish Academy of Sciences (17.11.2005)
20. Slovak Academy of Sciences (28.11.1993)
21. Slovenian Academy of Sciences and Arts (28.04.1997)
22. Academy of Finland (04.01.2007)
23. Finnish Academy of Science and Letters (10.03.1992)
24. Swiss Academy of Sciences (18.09.1989)
25. Academy of Sciences of the Czech Republic (10.04.1996)
26. National Academy of Sciences of Ukraine (02.10.2000)
27. Hungarian Academy of Sciences (20.06.1995)
28. National Academy of Science of Belarus (18.02.2002)
29. Russian Academy of Sciences (17.02.1993)



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- 1940                      Year Book I of the Estonian Academy of Sciences  
(in Estonian)
- 1969–1988                Annual Report of the Academy of Sciences of  
the Estonian SSR (in Russian, 20 volumes)
- 1989                      Annual Report of Estonian Academy of Sciences  
(issued separately in Estonian, Russian and English)
- 1990–1995                Annual Report of Estonian Academy of Sciences  
(issued separately in Estonian and English, 6 volumes)
- Scientific Publications of the Estonian Academy of  
Sciences (with a Foreword in Estonian and English,  
6 volumes)
- 1996–2011                Year Book of the Estonian Academy of Sciences II–XVII  
(issued separately in Estonian and English)