

LATVIAN ACADEMY OF SCIENCES

YEARBOOK 2008/09



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LATVIAN ACADEMY OF SCIENCES

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The 2008–2009 Latvian Academy of Sciences (LAS) Yearbook is a follow-up edition — already the twelfth one under this title. The previous issues reflected the situation in 1991, 1992, 1994, 1995, 1996, 1997, 1998/1999, 2000/2001, 2001/2003, 2004/2005, and 2006/2007.

The Yearbook includes the Charter of the Latvian Academy of Sciences, basic information on the Academy, its structure and members, surveys of activities in 2007–2009.

The contents of the Yearbook are also available on the Website of the LAS (http://www.lza.lv)

The Yearbook contains information as of 1 June 2009.

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THE LATVIAN ACADEMY OF SCIENCES



The Latvian Academy of Sciences (LAS) is Latvia's national academy of sciences dedicated to the promotion of science and high quality research, the study and development of national history, culture and language, encouraging the exploration of Latvia's natural resources and environmental protection, and providing advise to the government and the public about socially relevant scientific issues. The LAS by definition, is a derivative public person with autonomous competence in the state administrative system, and it is composed of elected members.

The LAS functions by virtue of the Charter, which has been endorsed by the Saeima of the Republic of Latvia (1997), and the Statute. The General Meeting of the LAS, the highest decision-making body of the academy, organisationally keeps itself independent in adopting and/or amending the Statute.

The Academy elects as members the most prominent Latvian and foreign scientists and intellectuals of other areas. The LAS includes full members, honorary members, foreign members, and corresponding members. As of 1 June 2009, the LAS consists of 221 full members and corresponding members, 54 honorary members, and 92 foreign members. In recent years, several young scientists (below 40 years old) have been elected the members of the LAS. Latvia has a good representation in *Academia Europaea*, European Academy of Sciences in Support of Excellence in Science and Technology and *Academia Scientiarum et Artium Europaea* through individual membership of outstanding Latvian scientists, full and corresponding members of the LAS, and several of them are elected foreign members in other academies of sciences.

The Latvian Academy of Sciences marks February 14 as "The Day of the Academy", since on 14 February 1946, members of the Academy gathered for their first General Meeting, and on 14 February 1992, the LAS adopted its

Charter and the new Statute. The present-day Academy in its work continues the research traditions of the scientific associations, which existed in Latvia in the 19th century, and of the former Academy of Sciences (1946–1991). The oldest predecessors to the LAS were the Kurzeme Society for Literature and Art, which was founded in 1815 in Jelgava and functioned as the first regional academy of science in the Baltic States, and the Commission of Knowledge, founded within the Rīga Latvian Society in 1869 and later transformed into the Science Committee with the status of a private academy of sciences (1932–1940). In the years 1946–1991, the Academy of Sciences was both an aggregate of prominent scientists and of large research institutes (15 altogether) and it functioned also as the highest administrative structure of research.

Since 1992, the Latvian Academy of Sciences has been functioning as an association of scientists. When adopting the Charter and the new Statute, by the decision of the General Meeting, the LAS was reorganized into a classical academy, which unites elected members — prominent scientists and scholars. For Latvia's scientists, the LAS is the venue of discussions on significant science issues. Recently, the LAS has been focusing not only on specific science issues, but also on the problems of science, technology and innovation in whole, thus, paying greater attention to the problems of applied science. The LAS has found a stable place in the organizational system of the Latvian science and has assembled under its umbrella the best qualified science experts in Latvia. Starting from January 2008, the Ministry of Education and Science of the Republic of Latvia has delegated to the LAS the functions of the national funding agency for several European science programmes and projects, and of providing the representation of Latvia by Latvian scientists in the capacity of national delegates in the relevant EU research programme committees and working groups, as well as raising awareness and recognition of Latvian science both at the national level and internationally.

The highest decision-making body of the LAS is the General Meeting which is attended by full members, honorary members, foreign members, and corresponding members. The general meetings are convened at least twice a year and are open. As a decision-making body, the Senate, together with the President and Secretary General, heads the work of the LAS interim general meetings. The day-to-day functions of the LAS are performed by the President in co-operation with the Presidium of the LAS.

With the purpose to promote the development of interdisciplinary problems and mutual contacts among representatives of related sciences, members of the LAS unite in divisions of sciences. The LAS is composed of four scientific divisions: the Division of Physical and Technical Sciences, the Division of Chemical, Biological, and Medical Sciences, the Division of Social Sciences and the Humanities, and the Division of Agriculture and Forestry Sciences. Each division holds its own meetings and also organizes meetings of the LAS.

The major activities of the LAS within its own society include the following:

- taking part in the development and implementation of Latvia's science policy;
- discussing and analyzing national, regional, and international issues relevant to Latvia. In addressing socially relevant scientific issues the LAS forms a steering group to agree on the main points and to advise the respective scientific division of the LAS in organizing the LAS meeting and taking further steps in that regard;
- contributing to the development of regional science through regular visiting meetings and joint projects of the LAS in the regions of Latvia;
- continuous review and assessment of research and scholarly activity results in Latvia through expertise of the works submitted by the LAS prize candidates, and nominating the most significant achievements of the year in Latvia's science (since 2003);
- involvement of the LAS in performing, coordinating, and assessing the national programmes (altogether nine programmes for the years 2006–2009). The LAS itself is coordinating the national programme *Lettonics* (Latvian studies) and is involved in its performance.

Each year, the Latvian Academy of Science rewards scientific excellence. The Grand Medal of the LAS is regarded to be the most prestigious one among the LAS awards. The LAS gives nominal prizes (25 altogether), which are named after prominent Latvian scientists, and these are announced biennially or once in three years. Several prizes and awards of the LAS have been instituted jointly with other institutions and large Latvian companies. The LAS, the UNESCO Latvian National Commission, and L'Oreal Baltic have jointly launched the fellowships *For Women in Science*, which are

granted annually since 2005. The LAS in collaboration with the Lithuanian Academy of Sciences and the Estonian Academy of Sciences give an international award — the Medal of the Baltic academies of sciences. Every year, the LAS awards prizes and awards to young scientists. Since 2003, the LAS nominates the most significant achievements of the year in Latvia's science. The annual announcement of top ten achievements of the science of Latvia is receiving a notable response in public and mass media.

The LAS publishes the journal Latvijas Zinātņu Akadēmijas Vēstis/Proceedings of the Latvian Academy of Sciences (in Latvian and in English), six issues per year, and the publication series Terminology News. The LAS produces several joint publications through cooperation with its partner institutions: the bi-weekly newspaper Zinātnes Vēstnesis (The Science Bulletin), the popular scientific seasonal issue Zvaigžņotā Debess (The Starry Sky) and Tehnikas Apskats (Technical Review).

The LAS is also contributing to research cooperation. Carrying out a commission of the government, the LAS is representing Latvia in the EU Scientific and Technical Research Committee (CREST) and the Joint Research Centre Board of Governors. Since 2004, the LAS is involved in the activities of EASAC, providing independent advice about the scientific aspects of public policy issues to those who make or influence the policy of the EU. The LAS continuously represents Latvia's science in non-governmental international organizations: ICSU, UAI, and the LAS is the member of ALLEA. The LAS also participates in the following global networks: InterAcademy Panel on International Issues and InterAcademy Medical Panel on Global Health Issues.

The LAS constantly cooperates with the academies of sciences of other — mainly European — countries within the frames of bilateral agreements (29 altogether). Alongside with maintaining regular exchange of information and sharing experience with partner academies, the bilateral agreements stipulate scientific exchange visits, and thus, the LAS supports individual scholars in performing work in the archives and libraries, and small groups of researchers to carry out smaller joint projects. The initial regional cooperation of the three Baltic (Estonian, Latvian, and Lithuanian) academies of sciences started at the beginning of the 1990s, it has been expanded to regular joint meetings of Nordic and Baltic academies of sciences. Within the frames of these meetings the Baltic Conferences on Intellectual Cooperation are organized. In October

2007, the 11th Baltic Conference on Intellectual Cooperation "Academic Views on the National Development Strategies of the Baltic States" was held at the Latvian Academy of Sciences.

Starting from 2008, the LAS has undertaken the functions of coordinating and implementing EUREKA, COST programmes, the Joint Baltic Sea research programme BONUS, Joint Technology Initiatives, and the functions of national funding agency for ERA-NET and ERA-NET Plus projects.

The LAS is partially financed from the state science budget. Apart from this, the LAS is involved in various projects, including international ones, and carries out economic activity.

The LAS cooperates with the majority of science and education institutions in Latvia: the former research institutes of the LAS, the newly established institutes and Latvia's higher educational establishments. The LAS has signed cooperation agreements with the University of Latvia, Rīga Technical University, Daugavpils University, and Liepāja University, with several museums and other organizations. Notably, several research units, namely, the Centre for Science and Technology Studies and the Baltic Centre for Strategic Studies, are working under the umbrella of the LAS, and traditionally the Terminology Commission (established in 1946) has been attached to the LAS, as well as the Certification Centre, the State Commission of Scientific Qualification, the European-Latvian Institute *Eurolat* and the Council of State Emeritus Scientists.

In recent years, the Academy has singled out many young talented scientists through reviewing their scientific publications and patents for the inventions. The best young scientists were selected for prestigious science awards. It is with pleasure to observe that a new generation of scientists gradually emerges in Latvian science and it becomes better represented in the membership of the Latvian Academy of Sciences.

Fruit Erman

President of the Latvian Academy of Sciences

CHARTER OF THE LATVIAN ACADEMY OF SCIENCES

Adopted at the General Meeting of the Latvian Academy of Sciences on 22 November 1996 Ratified by the Saeima (Parliament) on 23 January 1997

GENERAL

The Latvian Academy of Sciences is a successor of several scientific associations which previously existed in Latvia. Its predecessors are the Kurzeme Society for Literature and Art, founded in 1815 in Jelgava and the Commission of Science, founded within the Rīga Latvian Society in 1869, which in 1932 was reorganised into the Science Committee with the status of a private academy of sciences.

Since 1919, the government of the Republic of Latvia had repeatedly considered the foundation of an official Latvian Academy of Sciences. In 1927, the idea was supported by Rainis, who was then Minister of Education. In 1935, the intention to create the Latvian Academy of Sciences was expressed in public by the Prime Minister K. Ulmanis, and on 14 January 1936, by the Cabinet's Act, the Institute of History of Latvia was founded as the first constituent part of this Academy.

In Latvia, the Academy of Sciences started its work on 14 February 1946, when academy members gathered for their first General Meeting. Scientists from the University of Latvia and the Latvian Academy of Agriculture formed the core of the Academy of Sciences. When adopting the Charter and the new Statute, by the decision of the General Meeting, adopted on 14 February 1992, the Latvian Academy of Sciences was reorganised into a classical academy which united elected members — prominent scientists and other scholars.

In the restored Republic of Latvia, the Latvian Academy of Sciences facilitates the development of sciences, carries out scientific research. It takes care that all special knowledge that Latvia and the Latvian people have given and can give to the world science and culture — national culture, language, folklore, literature, social and economic experience, traditions — are realised, studied, perfected, maintained, and passed over to the future generations. It studies and preserves the historical traditions of Rīga and regions of Latvia, shows the place of the Baltic countries in the world.

The Latvian Academy of Sciences has joined the international scientific community, collaborates with other academies of sciences and scientific organizations in Europe and the world.

Article 1. LEGAL BASIS OF THE LATVIAN ACADEMY OF SCIENCES

In the Republic of Latvia, there is one Latvian Academy of Sciences as a centre of national importance, formed by the state. The Latvian Academy of Sciences is an autonomous legal entity which consists of elected members of the Latvian Academy of Sciences and which is subsidised by the state. The Latvian Academy of Sciences functions in accordance with its Charter and Statute. The Charter is adopted by the General Meeting of the Latvian Academy of Sciences and endorsed by the Saeima (Parliament) of the Republic of Latvia.

The Latvian Academy of Sciences may associate with scientific research institutions, societies, foundations, scientific technical organisations, universities, and higher educational institutions. Their collaboration with the Latvian Academy of Sciences is based on mutual agreement. In order to fulfill the goals of the Academy, groups of scientists or institutions are formed, which may function within the Latvian Academy of Sciences

Members of the Latvian Academy of Sciences are elected prominent Latvian and foreign scientists, and honorary members — also universally recognised Latvian scholars of other spheres.

The Latvian Academy of Sciences is a legal entity. It observes the laws of the Republic of Latvia and international legal acts.

Article 2. GOALS AND KEY DIRECTIONS OF THE LATVIAN ACADEMY OF SCIENCES

Goals and key directions of the Latvian Academy of Sciences are:

- to develop science, to facilitate and carry out studies in the sphere of basic and applied sciences, to promote the study and development of the history, culture, and language of the Latvian people and the state, as well as to support studies connected with the natural resources of Latvia, possibilities for their optimal utilisation and protection of environment;
- to prognosticate processes of Latvia's development, to report promptly to the government and the community about scientific forecasts on desirable and undesirable consequences of different economic, cultural and social processes and projects.

Article 3. RIGHTS OF THE LATVIAN ACADEMY OF SCIENCES

The Latvian Academy of Sciences has the rights:

• to collaborate with institutions of higher education and scientific research organisational system, to delegate its representatives for work in these institutions;

- to receive information in the Saeima commissions, ministries, and other governmental institutions on preparation and modification of laws and regulations, which are related to science and higher education, as well as to express its opinion about these documents:
- to undertake initiative in the development of new scientific trends and scientific institutions which are connected with them:
- to award a degree of the *Dr. h. c.* (*Doctor honoris causa*) of the Latvian Academy of Sciences to Latvian and foreign scientists;
- to propose and adopt modifications in its Charter, to submit them for endorsement to the Saeima;
- to preserve in its archives, depositories, and libraries manuscripts and documents belonging to prominent people in science, literature, art, and other spheres of culture, as well as other materials important for science and history.

Article 4. OBLIGATIONS OF THE LATVIAN ACADEMY OF SCIENCES

The Latvian Academy of Sciences has the obligation:

- to take an active part in the development of science policy of Latvia and to promptly advise the Saeima and government in matters of science;
- to participate in scientific expertise of different governmental programmes, in stating the research level of studies, projects, programmes, and scientific institutions;
- to recognize excellence in science of Latvia (to award prizes for outstanding contribution in science of Latvia);
- to promote principles of self-government and democracy of science and scientists of Latvia, to protect these principles in governmental structures and the mass media:
- to care about involving of researchers of new generations into science and the social protection of the retired scientists, including the state emeritus ones;
- to protect, preserve, and perfect principles and traditions of scientific research ethics, discussion, to study problems of history of Latvian science;
- to care about publishing scientific literature, the scientific level of terminology and encyclopaedias in Latvia;
- to organise scientific congresses, conferences, open meetings of the Latvian Academy of Sciences, discussions, and competitions and to popularise achievements in science;
- to scientifically supervise the depositories of Latvian science and the national cultural heritage Academic Library of Latvia, Misiņš Library, and the Depository of Latvian Folklore;

• to develop and encourage international contacts of Latvian scientists, to collaborate with other academies of sciences, scientific unions and associations, to maintain international scientific relations and to represent science of Latvia in international scientific organisations.

Annually the Latvian Academy of Sciences publishes a report on its activities.

Article 5. COMPOSITION AND MANAGEMENT OF THE LATVIAN ACADEMY OF SCIENCES

Composition of the Latvian Academy of Sciences is the following: full members (academicians), honorary members, foreign members, corresponding members. Their number, procedure of nominating and discussing candidates in the scientific community, as well as order of election is determined by the Statute of the Latvian Academy of Sciences.

The highest decision-making body of the Latvian Academy of Sciences is the General Meeting, in which elected full, honorary, foreign, and corresponding members take part. Matters pertaining to the Charter and the Statute and admittance of new members are decided by full members. In order to facilitate solving of interdisciplinary problems and contacts among representatives of allied sciences, members of the Academy form divisions of sciences of the Latvian Academy of Sciences. In between general meetings, the work of the Latvian Academy of Sciences is headed by the President, who is elected by its members, and the Senate.

The General Meeting of the Latvian Academy of Sciences elects the Supervisory Council. With the purpose to organise different spheres of work of the Latvian Academy of Sciences and to take prompt decisions, the Presidium, Board, and other organisational structures are formed. Composition and duties of these structures are determined by the Statute of the Latvian Academy of Sciences.

Article 6. ECONOMIC BASIS OF THE LATVIAN ACADEMY OF SCIENCES

The necessary financing for work of the Latvian Academy of Sciences is subsidised from the state budget. The Latvian Academy of Sciences submits a motivated application for the following year's financing together with the annual report, according to a procedure, determined by the government. The special budget of the Latvian Academy of Sciences is formed of resources which are obtained from:

- contractual works and entrepreneurial activity;
- managing of the property;
- donations and presents;
- · other sources.

Under possession or property of the Latvian Academy of Sciences may be real estate or movables — land, buildings, and other property, which has been given over to it by the state institutions, or which it has obtained as a result of its activities or on other legal basis, as well as intellectual property, currency, and securities in Latvia and abroad.

Under the supervision of the Latvian Academy of Sciences are institutions and organisations, which are necessary for its work, as well as institutions and organisations which facilitate the functioning of science.

Administration of property, belonging to the Latvian Academy of Sciences, and objects, which are under its possession and supervision, is determined by the Statute of the Latvian Academy of Sciences.

Article 7. STATUTE OF THE LATVIAN ACADEMY OF SCIENCES

The General Meeting of members of the Latvian Academy of Sciences independently adopts and/or modifies its Statute which may not be in contradiction with the provisions of the present Charter.

THE MAJOR TASKS OF THE LAS FOR 2008–2012

Condensed version of the re-election speech by President Juris Ekmanis, 3 April 2008

In his speech, Juris Ekmanis retrospected the major activities and achievements of the Academy during his four-year presidency and spelled out the major tasks for the coming four years. The President pointed out that the Latvian Academy of Sciences has consolidated its status within the existing structure of the research system in Latvia.

Since May 2004, the Latvian science has become an integral part of the EU science and new opportunities have opened up to researchers. Indeed, the President then referred to the general situation of scientific research in Latvia, placing particular emphasis on the financial aspect, and described an optimistic picture. The current scientific landscape in Latvia had been shaped by the changes that had occurred during the past decade. Irrespective of various difficulties and new problems, academic research equipment and facilities had been noticeably upgraded, which enabled high-class basic research and attracted young research talents.

The speaker acknowledged that the past decade in Latvia had been rich in regard to science-related events and that the Academy should undertake an independent review of the science development over that period. Touching upon the Academy's expertise, he noted with satisfaction that it has become an annual tradition for the LAS to review and evaluate the most significant scientific achievements of Latvian scientists. The selection of the ten most outstanding achievements of the Latvian science at the end of the current year has gained a significant echo in the society and mass media.

In the reporting period, the LAS had consolidated its position as an indispensable source of expertise. The representatives of the LAS had regularly taken part in the work of the parliamentary (Saeima) commissions, ministries, and other institutions to discuss the issues of research and national development. The reputation of the LAS gave an opportunity to hold an immediate dialogue with the Government and Saeima. In this regard, President acknowledged with satisfaction that the LAS had recently submitted concrete sugges-

tions on how to raise the role of science in the Latvian National Development Plan and to advance the implementation of research programmes.

President also spoke about new functions of the LAS. Thus, recently the LAS had joined two National Research programmes: *Lettonics* (The Latvian studies) and KALME (Climate change impact on water environment in Latvia) and had signed agreements of cooperation with the Ministry of Education and Science and the Ministry of Agriculture. In accordance with the Delegation Agreement with the Ministry of Education and Science for the 2008–2011 period, the LAS had undertaken the functions of coordinating and implementing EUREKA and COST programmes, the Joint Baltic Sea research programme BONUS, Joint Technology Initiatives, and the functions of national funding agency for ERA-NET and ERA-NET Plus projects. The delegated tasks include also popularization of science in the press and organization of popular scientific events.

Speaking about the future of the LAS, President Ekmanis was optimistic. Recently several young researchers have been elected to the Academy membership and the generation of 30-year-olds has been involved in the LAS activities

At the end of his speech, President spelled out the major tasks of the LAS for the coming four years (2008–2012).

- 1. To maintain and consolidate the existing status of the LAS as a nationally recognised traditional learned society within the general structure of Latvia's science and the higher education system, making use of the experience and reputation of its membership (academy members come from all Latvian universities, the biggest research institutions and higher education institutions).
- 2. To continue an active collaboration in elaborating national legislative initiatives, in reviewing and implementation of national development programmes and in advancing wide international cooperation by harnessing the high scientific and organizing competence and experience of the LAS members.
- 3. To use to the utmost the experience and prestige of the LAS for the analysis and prognostication of the situation of Latvian science, higher education and culture development, by maintaining active contacts with representa-

tives of the Saeima, the Cabinet of Ministers, ministries, business enterprises and embassies, and by bringing forward suggestions on how to raise the role of science in achieving the Latvian strategic development tasks.

- 4. To facilitate, in terms of organisation, the attraction and realization of new projects and initiatives, including international ones, taking into consideration the suggestions put forward by the LAS members (consultations, recommendations, international relations and scientific exchange visits).
- 5. To encourage academic debate on controversial issues in science, education and national economy with the participation of professionals in various fields and taking advantage of the LAS reputation for expertise.
- 6. To hold visiting meetings of the LAS to discuss academic and practical themes in Latvia's regions with the purpose to consolidate the established relationships with the regional higher educational institutions and local governments.
- 7. To ensure representation of the LAS in national, public and international institutions with the purpose to enhance the development of knowledge-based society in Latvia.
- 8. To actively encourage the study and preservation of Latvian language, culture and art identity through implementation of the Lettonics-type scientific programmes.
- 9. To carry on active communication with mass media with the purpose to inform about the activities and achievements of science and higher education in Latvia.
- 10. To run the LAS and its collaboration partners' science award and prize schemes instituted to recognize and commemorate the most outstanding Latvian scientists and their scientific achievements.

SCIENTIFIC AND ORGANISATIONAL ACTIVITIES OF THE LATVIAN ACADEMY OF SCIENCES IN 2007–2009

ACHIEVEMENTS OF THE SCIENCE OF LATVIA IN 2007 AND 2008

As in previous years, the Latvian Academy of Sciences named the Top Ten Scientific Developments in Latvia in 2007 and 2008. The list of Latvian Science's Top 10 was made by thoroughly considering the suggestions submitted by the universities, research institutes and centres.

2007

- Elaboration and introduction of a complex clinical-genetic investigation method to identify the risk factors of chronic diseases in children (*Dr.habil.med*. Ingrīda Rumba, *Dr.med*. Liene Ņikitina- Zaķe, *Dr.biol*. Tatjana Sjakste, Ieva Saulīte, Irēna Rinkuža, *Dr.med*. Silvija Remberga; Faculty of Medicine, University of Latvia, Latvian Biomedical Research and Study Centre, Institute of Biology of the University of Latvia, Children's Clinical Hospital in Gailezers).
- Development of theoretical basis for specific signal processing technology and publishing the monograph *Digital Alias-free Signal Processing* (Wiley, 2007). The new technique allows significant extension of the frequency range of real-world analogue signals that can be converted and processed in a digital format (*Dr.habil.sc.comp*. Ivars Biļinskis, Institute of Electronics and Computer Science).
- Development of new organic materials for direct recording of surface relief holograms in the red region of the spectrum (*Dr.habil.chem*. Valdis Kokars, *Dr.habil.phys*. Andris Ozols, MS Dmitrijs Saharovs, *Dr.habil.chem*. Valdis Kampars, MS Ansis Maļeckis, *Dr.habil.sc.ing*. Gundars Mežinskis, MS Artūrs Plūdons, Faculty of Material Sciences and Applied Chemistry of the Rīga Technical University).

- Detection of the surface properties of strontium titanate that are potential for remarkable improvement of operation of information processing devices (*Dr.habil.phys*. Jurijs Kotomins, *Dr.phys*. Sergejs Piskunovs, *Dr.phys*. Jurijs Žukovskis, Institute of Solid State Physics of the University of Latvia).
- Mildronate has been demonstrated to have the ability to regulate mitochondrial processes that opens new possibilities in the treatment of neurodegenerative disorders (*Dr.habil.med.* Vija Kluša, *Dr.habil.chem.* Ivars Kalviņš, Faculty of Medicine of the University of Latvia, Latvian Institute of Organic Synthesis).
- Publishing the monograph Buried Treasures. Finding and Growing the Worlds Choicest Bulbs (Thimber Press, 2007), which summarizes the results of more than thirty-year work in exploration, introduction and selection of flower bulbs (LAS Dr.biol.h.c. Jānis Rukšāns)
- Development of new methods microrobotics and peeling of microlayers — for the purpose of analyzing the structure and surface properties of papermaking fibres (*Dr.habil.sc.ing*. Arnis Treimanis, MS Uldis Grīnfelds, Mārīte Škute, Latvian State Institute of Wood Chemistry).
- Publishing of the last volume *Small Towns and Country of Latvia* as part of the four-volume series of drawings and descriptions by J. K. Brotze, *Monumente*, marks the completion of scholarly processing and publishing of a significant source of Latvia's 18th century history and ethnology (Institute of History of Latvia, University of Latvia, Latvian Academic Library).
- Editing and publishing of the scientific contribution made by the distinguished linguist of Latgale Professor Antons Breidaks in a two-volume book *Selected Works* (Latvian Language Institute of the University of Latvia, Daugavpils University).
- Publishing of a scholarly edition of A. Pumpurs' epos "Lāčplēsis" in English (*Bearslayer. The Latvian Legend*, Academic Publishers of the University of Latvia, 2007) for the purpose of popularizing Latvian national values throughout the world. Translation made by *Dr.h.c.* of the University of Latvia Artūrs Kroplijs (Australia) and scholarly reviews and commentaries written by *Dr.philol*. Ausma Cimdiņa, *Dr.psych*. Vaira Vīķe-Freiberga, *Dr.philol*. Ojārs Lāms, *Dr.habil.philol*. Janīna Kursīte, *Dr.hist*. Kaspars Kļaviņš (Faculty of Philology of the University of Latvia).

2008

In scientific research:

- A novel cell mechanism that is responsible for the capability of malignant tumors to regenerate after anti-cancer therapy was discovered (*Dr.habil.med*. Jekaterina Erenpreisa, Latvian Biomedical Research and Study Centre in cooperation with the University of Southhampton, University of Heidelberg, and the Bundeswehr Institute of Radiobiology).
- Approaches for the synthesis and isolation of pure optical isomers of biologically active compounds were developed and their properties studied; these findings contribute to developing more effective medications (Latvian Institute of Organic Synthesis Professor Ivars Kalviņš, *Dr.habil.chem.*, *Dr.habil.chem.* Edmunds Lukevics, *Dr.pharm.* Maija Dambrova, *Dr.chem.* Aivars Krauze, *Dr.habil.chem.* Grigorijs Veinbergs).
- A novel integrated study of methods, strategy and tactics of sustained non-violent resistance in Latvia in regaining independence and international recognition in a democratic way completed and published in the monograph *Nonviolent Resistance: Road to Regaining Independence of Latvia, 1945–1991*, authored by Valdis Blūzma, Tālavs Jundzis, Jānis Riekstiņš, Heinrihs Strods, Gene Sharp. The study was carried out within the framework of National Research Programme "Lettonics: research on history, language and culture".
- A hitherto unknown syndrome of gait disturbance (resembling Parkinsons's disease) in intravenous drug Methcathinone (ephedrone) users was discovered and the cause of the syndrome was established excessive accumulation of manganese compounds in these individuals (Professor Viesturs Liguts, *Dr.med.*, Dr. Ainārs Stepens, Rīga Stradiņš University in cooperation with the University of Oxford).
- For the first time, quantum interference in carbon nanotube current source was modelled. This provides significant stepping-stone towards the design of quantum information-processing devices (*Dr.phys*. Vjačeslavs Kaščejevs, Institute of Solid State Physics of the University of Latvia in cooperation with the University of Cambridge and University of Washington).

In practical applications:

- A simultaneous pancreas-kidney transplantation was first performed in Latvia (under the leadership of Professor Rafails Rozentāls, *Dr.habil.med.*, Pauls Stradiņš Clinical University Hospital)
- Solar energy testing equipment was developed and installed (under the leadership of Professor Pēteris Šipkovs, *Dr.habil.sc.ing.*, Institute of Physical Energetics).
- A new information technology for providing sustainability of the electrical transmission network and generation was elaborated and introduced (under the leadership of Professor Jurijs Merkurjevs, *Dr.habil.sc.ing.*, Rīga Technical University and the Institute of Physical Energetics).
- Novel methods for isolating antioxidants from biomass and for using them as biodiesel stabilizers were developed (under the leadership of Professor Valdis Kampars, *Dr.habil.chem.*, Faculty of Materials Science and Applied Chemistry of the Rīga Technical University, Latvian State Institute of Wood Chemistry).
- A comprehensive glossary in linguistics published for the first time in Latvia. Glossary of Basic Linguistic Terms contains 2,000 terms, their explanations in Latvian and equivalents in English, German, and Russian. The glossary is intended for establishing a unified linguistic terminology. Compiled under the direction of Professor Valentīna Skujiņa, Dr.habil.philol.

GENERAL MEETINGS OF THE LATVIAN ACADEMY OF SCIENCES 2007–2009

General meetings (GM) were held in the traditional manner twice a year: in spring and autumn. The president of the Academy presided as chairman at the general meetings. The Spring GM focuses on the evaluation of the previous year's work, an academic lecture is given by an Academy member and there is the ceremonial handing of the Academy Awards. The Autumn GM includes the presentation of the LAS Grand Medal, which is followed by the recipients' academic lectures, and election of new members to the LAS.

In the reporting period, attendance of the general meetings was good.

12 April 2007, Spring General Meeting

Presentation of the Academy Awards

Prof. Z. R. Rudzikas: "Lithuanian Academy of Sciences: Integration Challenges", followed by presenting the LAS foreign member diploma (see condensed text of the lecture at p. 28)

Report of the LAS activities in 2006 by Secretary General R. Valters

22 November 2007 Autumn General Meeting

Presentation of the 2007 Grand Medals to Foreign Member of the LAS Robert Evarestov and Full Member of the LAS Viktors Hausmanis, followed by recipients' academic lectures

Prof. Robert Evarestov: "Quantum Chemistry of Solids: St. Petersburg–Riga" (see p. 32)

Prof. Viktors Hausmanis: "Theatre and Drama: Our Confreres Through the Years" (see p. 34)

3 April 2008 Spring General Meeting

Presentation of the Academy Awards

Reelection speech by President Juris Ekmanis (see condensed text at p. 15)

Report of the LAS activities in 2007 by Secretary General Raimonds Valters

Amendments to the LAS Statutes: discussion and voting

Election of President, officers, members of the Senate and the Supervisory Council

20 November 2008

Autumn General Meeting

Presentation of the 2008 Grand Medals to Corresponding Member of the LAS Ēriks Kupče and Full Member of the LAS Vitauts Tamužs, followed by recipients' academic lectures

Dr. Ēriks Kupče: "Hyperdimensional NMR Spectros-

copy" (see p. 37)

Prof. Vitauts Tamužs: "More than Just Glorification of

Mechanics" (see p. 35)

Election of new members to the LAS

2 April 2009 Spring General Meeting Corresponding Member of the LAS Uldis Osis: "Eco-

nomic Crisis - an Upward Fall"

Discussion about Latvia's national development and

science

Presentation of the Academy Awards

Report on the LAS activities in 2008 by Secretary Gen-

eral Valdis Kampars (see p. 25)

Spring General Meeting, 2 April 2009

Opening address by President Juris Ekmanis

Honourable members of the Latvian Academy of Sciences! Dear colleagues! Ladies and gentlemen!

Traditionally, with the approach of Easter, we gather for our Spring General Meeting. This year weather forecasters promise a warm spring, but economics — a rough winter with an enormous drop of the GDP and severe austerities concerning not only science. Of course, we remember well the springs in science in the preceding years, when many optimistic forecasts came true and young researchers joined our community more actively.

For three years (from 2005 to 2007), Latvian science experienced an uplift. Several talented young researchers returned from a beneficial work abroad. In fact, Latvia (admittedly – following an example set by Finland 20 years ago) was the only country of Europe, which had set by law an annual increase of science funding — 0.15% of the GDP right until the Lisbon goal would be achieved — 1% of the GDP (reaching 0.7% in 2006). In 2007, the statistics showed a decrease to 0.59%. In 2008, the increase was insignificant, but in 2009 a substantial drop is planned.

The campaign of financial austerity affects also the Latvian Academy of Sciences, yet the policy of thrift must not affect our thinking and analytical ability. Therefore, this time we have also changed the traditional agenda of our General Meeting.

In the first part of today's General Meeting, instead of discussing the scientific activities of the past year, we will speak about issues that unsettle the country and the society — the economic crisis and its effect on the country and science, and what science can offer dealing with the problems of the crisis period.

Only in the second part of the General Meeting we shall turn to the traditional items of the Spring General Meeting.

The democratization of science and its management are increasing by taking place in the world and in Europe, as the active enterpreneurs — not only the parliament, the government, the corresponding ministry — are involved with an increasing intensity into the discussion of science-related issues. The situation is similar in Latvia. The question still is: if some years ago, in 2004, when we joined the EU, we could talk about significantly rising society's interest in the development of science, has not the uncertainty of the economic situation currently exerted negative influence on this interest?

Today we will discuss the development of country and science. However, it is actually not the well-known question about the relatonship between science and society.

I have attempted to explain in mass media the large science potential, the application of which is to a great extent put off by unarranged legislation, and now an unexpectedly large number of small entrepreneurs have started to visit the Academy, who actively search for contacts with science. Unfortunately, if Latvia does not announce an "emergency state in legislation", a legitimate, active cooperation between a scientist and an entrepreneur and mastering of the EU Structural Funds will remain but our dream.

Presently we explain to the society (and, of course, to the politicians) that an actual and dangerous threat (and not only to science) is the departure of young people from Latvia. The responsibility of the country at the present circumstances is to acknowledge the actuality of this threat and to prevent it; otherwise, the break in the exchange of generations of scientists will leave permanent and negative consequences. Also, we must not let down those who have made up their minds and returned to the Latvian science.

What can we do ourselves as a community of researchers? First of all, we ought to convince our young colleagues and to support their efforts in implementing such reforms of mobility that offer possibilities of short-term in-service training. As a result, the Latvian science in whole, as well as individual researchers, would make gains.

Second, we must, together with our colleagues of the universities, support the attempts not to give away, and to attract to Latvia young talents who are still studying. To show them the possibilities we have! Students also can take part in exchange programmes, thus starting to make contacts with foreign colleagues already at the early stage of their career and at the same time continuing the development of their career full-fledgedly here in Latvia.

The main threat for the Latvian science is brain drain. A strategy is needed immediately, as well as its implementation, to prevent this irreversible outflow of Latvia's best gene pool to other countries. I appeal to the Saeima, the government and the society to take action in order to prevent this threat.

Latvian science is changing. The Academy of Sciences is also changing. Let us look into the future, ten years from now. Into that future which is being designed now for the year 2020 by the member of our Academy Vaira Vīķe-Freiberga together with her European colleagues. What will happen in our Academy? Apparently, in the Academy and in Latvian science actions will be taken mainly by the generation of people who are now under 50 — at present, out of 200 elected academy members and corresponding members we have only 15 such members. Let us think about this already at the current election of new members.

Conclusions made at the Spring General Meeting

(after the report by the LAS Secretary General Valdis Kampars)

During the first half of year 2008, all fields of science saw rapid development, by consolidating the staff and infrastructure of science, wherewith the role of science increased in education and in national economy in general.

At the end of 2008, the economic crisis caused a significant decrease of science and higher education funding, which may bring about drastic negative consequences for the development of education, science, and national economy unless an effective middle-term crisis-suppression mechanism ensuring the development of science is drawn up.

A further proportional decrease in all fields of science can be particularly risky for the support of national economy, which causes uncertainty concerning the chances of coordinated and synergetic use of all planned resources (research institutes, higher education institutions, technology transfer points of contact, competence centres, business incubators, entrepreneurs). For the development of science potential and acquired intellectual property as well as for an accelerated implementation of results, it is necessary to accomplish an urgent alignment of the Latvian legislation, relieving science from inadequate bureaucratic functions. It would stimulate the contribution of Latvian science to Latvia's budget, and a well-timed and maximum use of EU Structural Funds for the purposes of national economy.

Under the economic recession, it is particularly important to orient the research towards practical application and to receive state support for the innovations in national economy. At the same time the utmost care should be taken of maintaining and providing an continuous advancement of humanitarian studies, recognizing that carrying out the investigations in Lettonics (Latvian Studies) is a national responsibility and a question of national identity.

The obligation of the Latvian Academy of Sciences is to continue fulfilling the basic tasks of the LAS 2008–2012: to facilitate an active cooperation of universities, higher education institutions, research institutes, and the industry with an aim to achieve the most efficient use of the existing resources and to provide applicable results that could be rapidly transfered to national economy, at the same time providing expertise in the development and planning of Latvian science and national economy.

ACADEMIC LECTURES

Lexicographer Liborius Depkin's Latvian-German Dictionary

Trevor Garth Fennell

Abstract of the lecture given at the Senate Meeting on 15 January 2007



Professor Trevor Garth Fennell is Emeritus Professor at Flinders University of South Australia. His interests are in grammar (modern and historical) and in historical lexicography. He is foreign member of the Latvian Academy of Sciences. In childhood he learned Latvian language from the children of Latvian immigrants. From the start of his academic career, Fennell selected Latvian language as the subject of his research. To fully master the language and to teach it as an academic subject at the Universities of Australia, Fennell has written "The Grammar of Modern Latvian" in three volumes (1980, together with Henry Gelsen). Fennell has seriously focused on systematic study of histori-

cal monuments of Latvian language — from the first Latvian grammar and other grammars of the 17th century to the development of indexes for dictionaries of the 16th and 17th centuries, and first publications of the manuscripts of unpublished dictionaries. Trevor Garth Fennell has published 18 books and more than 50 linguistics-oriented articles about Latvian language. Fennell is the bearer of the Order of the Three Stars, the winner of 1996 Jānis Endzelīns Prize, and the 2006 Grand Medal of the LAS.

The theme of the lecture by the LAS Grand Medal winner was the manuscript of Latvian–German dictionary by Liborius Depkin. To quote from the article of Professor Fennell in the *Journal of Baltic Linguistics* (2004): "Any discussion of the unpublished dictionary by Liborius Depkin must be prefaced with the observation that the manuscript as we have it is by no means ready for publication, not only because the material is largely unordered, but also, and more pertinently, because Depkin has accumulated a very large number of examples from various sources which are often inconsistent with one another."

In his lecture Professor Fennell characterized the life of Liborius Depkin (1652–1708) — the Baltic German pastor, lexicographer and man of letters:

"Depkin was born in Madliena (Latvia). He studied theology in Leipzig and Rostock, was a pastor of Limbaži church and of St. John's church in Rīga; and

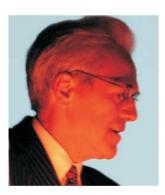
since 1690, the Rector of the Rīga Cathedral (Dome) School. He composed sacred songs and translated the then existing laws. He is the compiler of a very extensive Latvian–German dictionary manuscript, which runs 3,115 pages. It was the most comprehensive Latvian–German dictionary compiled until the 20th century."

Professor Fennell acknowledged that "The project has a historical purpose — to elucidate the former language structures, for in longer texts it is possible to find words and expressions that have not been known up to now and that would allow to understand the Latvian language of the 17th century more explicitly — how the actual Latvians spoke and how — the Baltic Germans. The objective is to perfect our historical knowledge and to help to preserve the Latvian cultural heritage."

Lithuanian Academy of Sciences: Integration Challenges

Zenonas Rokus Rudzikas

Condensed text of the academic lecture given at the General Meeting on 12 April, 2007



Professor Zenonas Rokus Rudzikas, Lithuanian theoretical physicist and President of the Lithuanian Academy of Sciences, was elected foreign member of the LAS in 2005. A highly regarded scientist in his own right, he has nearly 300 scientific publications in physics to his credit, and has travelled far and wide to present his ideas to his peers around the globe. Rudzikas has spent over a decade as the director of the Institute of Theoretical Physics and Astronomy of Vilnius University, and holds various awards and degrees recognising his achievements.

The speaker started his lecture with thanks to the members of the Latvian Academy of Sciences for the honour bestowed upon him by electing the member of

the LAS and then commemorated his teacher and supervisor of doctoral dissertation Professor Adolfas Jucys (1904–1974), the founder of the scientific school of the contemporary theoretical physics in Lithuania. Touching upon his field of research — atomic spectroscopy of chemical elements — Professor Rudzikas noted with pleasure his monograph *Theoretical Atomic Spectroscopy* published by Cambridge University Press in July 2007.

Taking office as President of the Lithuanian Academy of Sciences, Professor Rudzikas devoted his lecture to the role of the Academy in Lithuania and expounded on Lithuania's research priorities, the higher education system and the activities taken by the Academy to facilitate international research cooperation.

Professor Rudzikas concluded his speech by pledging that he will do his utmost to consolidate the cooperation between the Latvian and Lithuanian researchers and to sustain the contacts and good mutual relationships between the two academies.

He also reminded the audience that the European geographic centre is located in Lithuania — in the North from Vilnius (26 km), near Purnuskes village — that has been determined in 1989 by scientists of National Geographic Institute of France who gave the description of the European geographic centre and, applying the scientific method of gravitation centres, detected the central point. Moreover, 2009 will be a very special year not only for Vilnius but also for the rest of the country: Lithuania will celebrate its millenium anniversary, as the name Lithuania was first mentioned in the monastic annals *Annales Quedlinburgensis* in 1009.

Haploid Genomics: Revolution in Spatial and Temporal Reconstruction of the Peopling of the World by Modern Humans

Richard Villems

Abstract of the lecture given at the XI Baltic Conference on Intellectual Cooperation on 9 October 2007



Professor Richard Villems, Estonian archaeogeneticist and President of the Estonian Academy of Sciences, was elected foreign member of the LAS in 2005. After having received his PhD in biochemistry, he focused on molecular biology and genetics. Since the mid-1990s, Villems' main scientific interest is an interdisciplinary field of archaeogenetics — the reconstruction of human demographic history by analysing global variations of genetic diversity of human populations, in particular gender-specific genetic systems — mitochondrial DNA and the Y-chromosome. Professor Villems holds various awards and degrees recognising his achievements.

Professor Villems delivered a lecture at the Latvian Academy of Sciences, before an international audience, on the occasion of receiving the LAS foreign member's diploma. In the extract below, Professor Villems considers the interdisciplinary nature of archaeogenetics.

"Speciation event in the evolutionary history of *Homo sapiens* (*sapiens*) is not a date — it is a process, covering a certain period of time. Palaeoanthropologists together with archaeologists suggest that first signs of behavioural modernization of humans can be dated around 300,000 years ago.

On the other hand, we have a term "anatomically modern human", hence one can rightfully ask, when did AMH (Anti-Müllerian hormone) arise? Again, we do not have a date, but by reformulating this question a bit and specifying that we keep in mind "modern in terms of cranial morphology", we can already give a more precise date — the earliest of such findings from Ethiopia indicate a time window almost 200,000 years ago. Now this date is not arbitrary any longer. Yet, it is not a "scientific truth" either — it is just the age of the oldest fossil, classified as AMH that has been found so far.

Just by coincidence, the very first DNA-based evidence publicized by Alan Wilson's group in 1987, already found that the present-day divergence of exclusively matrilineally inherited mitochondrial DNA (mtDNA) coalesced at time depth 150,000–250,000 years.

From here, "Mitochondrial Eve" was born — a concept claiming that all present-day people descend, as far as their mtDNA is concerned, from a woman who lived around 200,000 years ago in sub-Saharan Africa.

This study, from the present-day point of view, was technically primitive. However, it was a trigger. A trigger not just for genetic research, but for an ever expanding inter- and multidisciplinary effort to synthesise the "descent of mankind"."

The Human Genome: Deadlock of Evolution, the Next Round of Spiral or Only a New Challenge?

Elmārs Grēns

Abstract of the lecture given at the Meeting of the LAS on 7 December 2007



Elmārs Grēns is a full member of the LAS, a member of Academia Europaea, corresponding member of the Russian Academy of Sciences, Habilitated Doctor of Biology, Professor of the University of Latvia (UL). He is the establisher of Rīga school of molecular biology and genetic engineering that is well known all over the world.

Elmārs Grēns started his scientific career at the Institute of Organic Synthesis (IOS) of LAS. In 1964, he founded a work group of Nucleic Acids Chemistry which soon gained international authority turning into the Laboratory of Nucleic Acids Chemistry of IOS of LAS, Institute of Molecular Biology of LAS and of the

UL (1991–1993), Biomedical Research and Study Centre of the UL (1993–2007), and now — Latvian Biomedical Research and Study Centre. In 1998, with the support of UNESCO, Grēns founded an international centre for research in molecular biology and biotechnology.

"The beginning of year 2001 was marked in the history of world science by the first serious results regarding the structure of human genome, followed by the clarification of the so-called complete nucleotide sequence already in 2004, providing scientists with informative material for functional research. At the very beginning and further on these findings carried with them the most unexpected surprises, and today scientists still discuss, what is the distinct thing about the organization of genome, for what reason we seemingly stand out so much among other species of mammals.

It has been elucidated that the genome of any organism undergoes continuous changes during the evolution process as new and modified genes and gene combinations originate. Human genome is overfull of remnants of inactive transposons and other "genetic fossils". Also, genome rearrangements of other kind, the so-called segment duplications that occur in a peculiarly active manner in particular regions of genome — the pericentromeres, are not much represented in the human genome.

Does this indicate that evolution is slowing down in the line of human and its ancestry, that perhaps in future this branch of evolution is leading to a deadlock

and that henceforth other branches of the tree of life will be subject to evolution? There is no answer to this question. The research of human genome has also brought along a certain confusion to the seemingly clear definition of "gene". In fact, the classical thesis: one gene — one protein, does not correspond with reality any more and requires new formulation.

The structure of human genome or the nucleotide sequence has been clarified, but the study of information encoded within the genome is at its very outset. Research of human genome in connection with the information on genome of other organisms allows to specify the principles of genetic evolution and the role of selection in the evolution of species. As Fred Sanger, author of the DNA sequencing method and twice Nobel Laureate, has said about the human genome: "It is like a book in a foreign language that you don't understand. That's the first job, working the language out". For a long time we will yet learn to read this book of life, and even when it will seem to us that we have come to understand everything, we will always find something new in it… The future will certainly amaze us with new affirmations regarding the possibilities of human evolution today and in future."

Solid State Quantum Chemistry: St. Petersburg-Rīga

Robert Evarestov

Condensed version of 2007 Grand Medal recipient's lecture given at the Autumn General Meeting on 22 November 2007



Professor Robert Evarestov, Head of the Department of Quantum Chemistry of St. Petersburg State University, was elected foreign member of the LAS in 2003. Professor Evarestov has worked out several modern courses in theoretical physics and quantum chemistry and has worked as a guest professor at the leading universities, including the University of Latvia, of more than ten countries of the world

Professor Evarestov has given a significant contribution to the solid state quantum chemistry, which combines the ideas of solid state physics,

quantum chemistry and theory of symmetry (an interdisciplinary science). Author of 200 scientific publications on the theory of symmetry and electronic structure of crystals,

including six books. Professor Evarestov holds various awards and degrees recognising his achievements

Professor Evarestov commenced his lecture in perfectly pronounced Latvian. He confessed, "I have known Latvian language since my early childhood thanks to my grandmother on my mother's side — born in Latvia, she arrived in St. Petersburg together with my grandfather in 1905 in search of a better work and remained to live in Russia."

Professor Evarestov retrospected the 35 years of friendly and fruitful collaboration between the researchers of St. Petersburg and Rīga in the field of quantum chemistry and physics, and described the results of this research collaboration. A course of lectures on quantum chemistry that were delivered by Professor Evarestov at the University of Latvia in 1972, inspired enduring collaboration. Professor took the opportunity to mention many Latvian researchers, presently members of the Latvian Academy of Sciences — Juris Zaķis, Andrejs Siliņš, Ivars Tāle, Andris Šternbergs and Andris Krūmiņš, whose support helped to develop this collaboration. He remembered professors Ilmārs Vītols, Irēna Pļaviņa, and Juris Tiliks, who were pioneering the process 35 years ago and have passed away.

Professor Evarestov recalled that back then, in 1972, he had enjoyed seeing the enthusiasm of his young students who acquired the field of knowledge that was completely new to them. He was proud of those who have became recognized scientists in Latvia, as Professor Eugene Kotomin, and abroad, as professors Alexander Shluger and Lev Kantorovich.

Up to 1991, active collaboration was going on: joint conferences and schools for young researchers were held both in St. Petersburg and Rīga; the results of research were described in scientific papers and books. After 1991, collaboration faced various difficulties that lasted for almost a decade. Happily, at present, joint research in the field of quantum chemistry is going on even on a higher scientific level. The contemporary progress in information technologies has given an opportunity to create sufficiently powerful computer clusters. In the recent years, scientific papers are co-authored by American, German, Spanish researchers, and also some other nationalities. Thus, former bilateral collaboration has grown into multilateral, global one, which makes it even more efficient.

Professor Evarestov devoted the central part of his lecture to quantum chemistry (see http://www.lza.lv/LZA-prezent/index.htm).

In the conclusion, Professor Evarestov spoke about future plans. A special mention was given to scientific discussions with research associates of Professor

Eugene Kotomin, with doctoral students and other researchers. Efforts are underway to write a monograph on theoretical modelling of nanostructures together with *Dr. phys.* Aleksejs Kuzmins, corresponding member of the LAS, and Jurijs Žukovskis, leading researcher of the Institute of Solid State Physics, University of Latvia. The book will be published in English by the "Zinātne" Publishers. Professor Eugene Kotomin has agreed to be the scientific editor. Professor expressed deep gratitude to the LAS for financing this monograph.

Theatre and Drama — Our Confreres through the Years

Viktors Hausmanis

Abstract of the lecture given at the Autumn General Meeting on 22 November 2007



Viktors Hausmanis, full member of the LAS, main area of study has been on the processes in Latvian literature and theatre. He has also greatly contributed to the research of Latvian literature and theatre in exile. Viktors Hausmanis is an acknowledged researcher of the writings of Rainis; he is the author of four monographs about Rainis and participated at the preparatory work of the academic edition of the collected works of Rainis (in 30 volumes). Hausmanis has also studied works of other Latvian writers — Harijs Gulbis, Rūdolfs Blaumanis, Ādolfs Alunāns, Mārtiņš Zīverts, and Anšlavs Eglītis.

The edition *History of Latvian Literature* (1–3, 1998–2001) has been prepared under the guidance of Viktors Hausmanis. He has written a research work on Latvian drama in exile, *Who Are They — Exile Playwrights*, monographs *Latvian Drama. The 1st Half of the 20th Century* and *Latvian Drama: 2nd Half of the 20th Century* (together with Benedikts Kalnačs), a research *Latvian Theatre in USA and Canada.* Viktors Hausmanis's research about Latvian theatre includes the monographs about the theatre director Felicita Ertnere, about actresses Lilija Ērika, Lilita Bērziņa, Alma Ābele, Velta Līne, as well as the work *Actors of Olden Jelgava* and encyclopaedia *Latvian Actors in Exile*.

The 2007 Grand Medal recipient Viktors Hausmanis presented a retrospective lecture of his studies in the history of Latvian theatre and drama. In the extract below, Hausmanis considers the role and various aspects of the theme.

"Theatre can be a place for entertainment, and can be an interlocutor. Latvian drama has grown and developed understanding theatre as the presenter of public ideas. The one-act play by Ādolfs Alunāns, *Self tutored* (1869), already states the

verity that education, but not fortune, is the basis for the progression of the society. As the economic and political situation changes at the end of the 19th/beginning of the 20th century, general problems of human nature are set in the centre of Latvian drama. This is indicated in plays by Rūdolfs Blaumanis and Aspazija, however, in the play *Daugava* by Rainis the idea of the Latvian country is stated: "Land — that is country". During the years of the Second World War and the German occupation, theatre was the provider of spiritual encouragement, it is confirmed by Mārtiņš Zīverts's plays Marriage of Munchausen and Power. In the post-war period, a crisis prevailed in playwriting for more than ten years, as the authors were forced to drastically propagate the Soviet ideology. A turning-point commenced along with the plays of Gunārs Priede, Harijs Gulbis, Pēteris Pētersons, Pauls Putniņš, Māra Zālīte, which spread the truth about the Soviet system, often expressing the ideas with the help of subtext, and the audience could well perceive what was hidden between the lines. After the restoration of the independence of Latvia, there are no more forbidden themes for theatre, however, the seeking of new modes of expression and form are sometimes unsuccessful and exaggerated. We can well feel the reality of life in the performances staged by Alvis Hermanis. They are about ourselves — the way we are, the way we live, and — where we are going."

More than just Glorification of Mechanics

Vitauts Tamužs

Abstract of the lecture given at the Autumn General Meeting on 22 November 2008



Professor Vitauts Tamužs, full member of the Latvian Academy of Sciences, is the chairman of the Scientific Council of the Institute of Polymer Mechanics, University of Latvia. He graduated from the Moscow State University in 1959 and continued his postgraduate studies at the same university. Tamužs is a lecturer at the University of Latvia and the permanent chairman of the traditional International Conferences on Mechanics of Composite Materials, held in Rīga since 1965. He is also editor-in-chief of the journal *Mechanics of Composite Materials* and president of the Latvian National Committee of Theoretical and Applied Mechanics.

In his scientific studies, Vitauts Tamužs has formulated the fundamentals of the micromechanics, of failure of polymer composite materials under complex stress states and complex loading. He has also elaborated a fracture theory for structurally inhomogeneous materials. This theory, which takes into account the dispersed accumulation of damages and the statistical distribution of strength properties of composite components, has been validated experimentally. The Latvian school of mechanics is well-known all over the world and occupies a reputable position in international scientific circles, and Professor Tamužs is a universally recognized authority in the field of fracture mechanics of materials. Author of more than 200 scientific papers, including ten monographs, which have gained general recognition and have been published abroad (translated into English and German).

The 2008 Grand Medal winner Vitauts Tamužs shared his wealth of knowledge about mechanics that has been his field of interest since the late 1950s.

"The main peculiarity of the solid state mechanics is that in order to study and describe the deformation and motion of substances it is necessary to substitute the actual materials with idealized models. Such models are an excellent field for applications of mathematics, development and creation of beautiful theories. The elegance of a fundamental theory of mechanics can even indicate its verity and correspondence to the inquiry of the real world. The development of such models and theories is caused by the necessity of practical calculations that are used in engineering sciences. The development of technology is unimaginable without the knowledge, models and theories of mechanics. Research in mechanics stimulates development of new materials which, in its turn, causes a fast development of particular fields of mechanics."

To quote Professor Tamužs: "If we take a closer look at the development of mechanics in Latvia, we should agree that, in fact, it started only after the Second World War. Full Member of the LAS Aleksandrs Mālmeisters and Professor Yakov Panovko should be mentioned as the persons who have had the greatest influence upon the research in mechanics. At the same time, several scientists of Latvian origin achieved worldwide recognition in mechanics. In the first place we should talk about professors Jānis Dundurs (USA) and Ralejs Tepfers (Sweden). An upsurge in many exact sciences and, specifically mechanics, occurred in the 1970s and 1980s. As a result, quite a lot of professors that are well-known to the world scientific community, have graduated from the University of Latvia, Faculty of Physics and Mathematics."

Professor regretted that after the restoration of independence the well-established system of education of exact sciences was destroyed. Nevertheless, he ended the lecture on an optimistic note by saying that "Knowledge is per-

haps the main stimulus for the advancement of humanity, the flame of knowledge cannot be extinguished. It always emerges anew in the young. There will always be young people with glinting eyes who will follow the edification of the great scientist David Hilbert: "We must know. We will know."

Hyperdimensional NMR Spectroscopy

Ēriks Kupče

Extract of 2008 Grand Medal recipient's lecture given at the General Meeting on 22 November 2008



Ēriks Kupče, *Dr.habil.chem.*, corresponding member of LAS (since 1992), is an internationally acknowledged scientist in the field of Nuclear Magnetic Resonance (NMR) Spectroscopy.

Ēriks Kupče, after graduating from the University of Latvia, Faculty of Chemistry (1978), began to work at the Institute of Organic Synthesis. In 1990, he received the Alexander von Humboldt's Fellowship that gave him an opportunity to carry out research work at the University of Bayreuth. In 1991, Kupče worked in the team of Professor R. Freeman at the University of Cambridge, in 1993 — in the team of I. Campbell, FRS, as a postdoc, simultaneously collaborated with *Varian* — one of the greatest companies manufacturing medi-

cal and scientific equipment in the world. In 2006, Kupče received the prestigious Günther Laukien Prize, which recognizes cutting edge experimental NMR research with a high probability of enabling beneficial new applications. Presently, Ēriks Kupče is a Principal Scientist and *Varian* Fellow at the company *Varian* Inc. (United Kingdom).

The theme of 2008 Grand Medal winner's lecture was hyperdimensional NMR spectroscopy — a principally new way of acquiring multidimensional spectra that allow overcome the barriers of traditional multidimensional NMR spectroscopy. In the extract below he considers the new perspectives that open with applying this technique.

"We have developed an entire armoury of new techniques to address the problem of time expenditure. First we abandon the idea of indirect evolution of nuclear spins, replacing this with multiple selective excitation at frequencies measured from prior one-dimensional spectra. The key is to encode the multiple excitations according to a Hadamard matrix, employing the same matrix to decode the responses. This affords a time-saving of about an order of magnitude for each new frequency dimension. It also has the useful advantage of effectively converting a globally isotopically enriched protein sample into specifically enriched case.

Less dramatic improvements stem from innovations that set out to share polarization from adjacent protons (ASAP, Acceleration by Sharing Adjacent Polarization) or spectrometer developments that permit spectra from several nuclear species to be recorded simultaneously (PANSY, Parallel Acquisition NMR Spectroscopy). This technology is more to be used for spectroscopy of small molecules and nature substances and it has allowed to create principally new, information rich experiments that resolve molecule structure in one single run, thus providing the possibility to analyse the samples automatically. The method has been denominated PANACEA.

Perhaps the most promising is the recent suggestion that the accepted dogma of the Nyquist sampling condition can be challenged when prior information about the NMR frequences is available. This allows the evolution dimension to be explored at just a single point, rather than the conventional systematic step-wise examination. This has been called SPEED and is presently being extended to multidimensional situations."



Building of the Latvian Academy of Sciences is not only architectural monument (recently given official recognition), but also a monument of science and engineering. For almost half a century this building personalizes Latvia's science with its fortunes and failures, it accommodates the Latvian Academy of Sciences, other scientific institutions and research centers. On 16 December 2008, the Senate of the LAS marked the 50th anniversary of the Academy building. *Photo: Jānis Brencis*



The Assembly Hall of the Latvian Academy of Sciences. *Photo: Jānis Brencis*



The Small Hall of the Latvian Academy of Sciences. *Photo: Jānis Brencis*

MEETINGS OF THE LATVIAN ACADEMY OF SCIENCES

2007

Meeting of 23 February, "Mineral Deposits of Latvia and Their Use in the National Economy"

Meeting of 15 March, "Popularization of Science in Society"

Meeting of 26 April, "On the Present Demographic Situation in Latvia"

Meeting of 7 December, "The Human Genome: Deadlock of Evolution, the Next Round of Spiral or Only a New Challenge"

2008

Meeting of 24 April, "Popularization of Science in Society"

Meeting of 16 May, the 50th International Scientific Conference of Daugavpils University and the Visiting Meeting of the LAS

Meeting of 8 August, "The 5th Congress of Selonia"

Meeting of 25 September "On Global Change and Global Warming. Necessity of a Well-balanced Development"

Meeting of 28 November, "Climate Change and Its Impacts"

Scientific lectures and reports delivered at the meetings of the Latvian Academy of Sciences

2007

- Lexicographer Liborius Depkin's Latvian-German dictionary" (Professor Trevor Garth Fennell, LAS Senate meeting, 16 January)
- Code of Conduct for the Recruitment of Researchers (European Charter for Researchers)" (full members of the LAS Vija Kluša, Jānis Priedkalns, LAS Senate meeting, 20 February)

- "Plans of the International Radio Astronomy Centre in the field of space research"
 (Corresponding Member of the LAS Juris Žagars, LAS Senate meeting, 10 April)
- "Perspectives of Alternative Energy Exploitation in Latvia" (Full Member of the LAS Juris Ekmanis, LAS Senate meeting, 8 May)
- "Research in energetics at the Rīga Technical University, and preparation of specialists in this field" (Full Member of the LAS Leonīds Ribickis, LAS Senate meeting, 8 May)
- "The present state of the establishment of National Cyclotrone Centre" (Full Member of the LAS Jānis Bērziņš, joint meeting of the Division of Physical and Technical Sciences, and the Division of Chemical, Biological, and Medical Sciences of the LAS, 9 May)
- "Nontraditional methods in organic synthesis"(Full Member of the LAS Andris Zicmanis, LAS Senate meeting, 12 June)
- "Latvian Studies (Lettonics) and research in Latvian linguistics" (Full Member of the LAS Ilga Jansone, LAS Senate meeting, 4 September)
- "Degradation of proteins destroy for survival" (Corresponding Member of the LAS Anatolijs Šaripo, LAS Senate meeting, 16 October)
- "Scientific and practical aspects of recycling of paper and other materials" (Full Member of the LAS Andris Treimanis, LAS Senate meeting, 16 October)
- "Population life span: differentiation and challenges" (Full Member of the LAS Juris Krūminš, LAS Senate meeting, 6 November)
- "Quantum computing: between computer science and physics" (Full Member of the LAS Andris Ambainis, LAS Senate meeting, 6 November)
- "Research conducted by the Latvian scientific expedition to Egypt" (*Dr.arch*.
 B. Deslandes, LAS Senate meeting, 11 December)
- "Spirituality and practicality in the composition of the pyramid of Joser" (Doctor honoris causa of the LAS Jānis Klētnieks, LAS Senate meeting, 11 December)
- "Development and introduction of sustainable, environment-sparing cultivation and processing technologies for fruits and berries in Latvia" (Corresponding Member of the LAS Edīte Kaufmane, LAS Senate meeting, 11 December)

2008

• "Scientific view on the possibilities of alternative energy exploitation in Latvia" (full members of the LAS Juris Ekmanis and Valdis Kampars, LAS Senate meeting, 12 February)

- "The Lisbon Agreement and the constitutional fundamentals of the EU" (Full Member of the LAS Tālavs Jundzis, LAS Senate meeting, 12 February)
- "The possibilities of industrial heritage preservation in Latvia, and problems regarding this issue" (Honorary Member of the LAS Jāzeps Ločmelis, Meeting of the Division of Physical and Technical Sciences of the LAS, 20 February)
- "The scientific activity of the Institute of Solid State Physics, University of Latvia"
 (Full Member of the LAS Andris Šternbergs, LAS Senate meeting, 15 April)
- "Reflections on the essence of poet, poetry and artistic creation" (Professor Raul Chilachava, Ambassador of Ukraine in Latvia, poet, poetry translator, literature researcher, Meeting of the Division of Social Sciences and Humanities of the LAS, 17 April)
- "Hidden symmetry of the 2D genetic code, and quantization of the parameters of genes: the beginning of life in multi-step replication and duplication reactions of oligonucleotides" (Full Member of the LAS Gunārs Čipēns, meeting of the Division of Chemical, Biological, and Medical Sciences of the LAS, 18 April)
- "Experience of the magazine Zvaigžņotā Debess [The Starry Sky]. Stories in Latvian about the starry sky." (Doctor honoris causa of the LAS Andrejs Alksnis, Meeting of the LAS, 24 April)
- "Azo compounds with intramolecular charge transfer as chromophores of universal
 activity" (Full Member of the LAS Valdis Kampars, joint meeting of the Division
 of Physical and Technical Sciences, and the Division of Chemical, Biological and
 Medical Sciences of the LAS, "New materials of holographic records", 9 May)
- "From investigations of photosensitive arene disonium derivatives to organic materials for direct holographic recording of surface relief in the red part of the spectrum" (Professor Valdis Kokars, joint meeting of the Division of Physical and Technical Sciences, and the Division of Chemical, Biological, and Medical Sciences of the LAS, "New materials of holographic records", 9 May)
- "The direct holographic recording of surface relief in stilbene azo-compounds"
 (Corresponding Member of the LAS Andris Ozols, joint meeting of the Division of
 Physical and Technical Sciences, and the Division of Chemical, Biological, and
 Medical Sciences of the LAS, "New materials of holographic records", 9 May)
- On the implementation of the state research programme "New medicines and biocorrection tools design, transport forms and mechanisms of action" (Full Member of the LAS Ivars Kalviņš, LAS Senate meeting, 17 June)
- "Let us add years to the life, and life to the years!" (Full Member of the LAS Juris Krūmiņš, LAS Senate meeting, 16 September)

- "Vision of the future development of the Daugavpils University" (Corresponding Member of the LAS Arvīds Barševskis, LAS Senate meeting, 16 September)
- "Multivalent mathematical structures and their application" (Corresponding Member of the LAS Aleksandrs Šostaks, LAS Senate meeting, 28 October)
- "Topicality of the art of life" (Corresponding Member of the LAS Igors Šuvajevs, LAS Senate meeting, 28 October)
- "On the scientific activity and the current events concerning it" (Full Member of the LAS Inta Muzikante, LAS Senate meeting, 4 November)
- "Global change on Earth and the concept of a well-balanced development" (Dr. Arnolds Übelis, Meeting of the LAS "On global change and global warming. Necessity of a well-balanced development", 25 September)
- "The nature and impacts of the climate change" (Dr. Agita Briede and Full Member of the LAS Māris Kļaviņš, Meeting of the LAS, "Climate change and its impacts", 28 November)
- "What are the VLP? Virus-like-particles" (Full Member of the LAS Pauls Pumpēns, Meeting of the Division of Chemical, Biological, and Medical Sciences, 12 December)

THE 2nd CONGRESS OF LETTONICS (LATVIAN STUDIES) 30–31 October 2007

In the past few years (since 2006), the LAS has continously managed and coordinated the National Research Programme *Lettonics* dedicated to the study of Latvian history, language, and culture. Thus, the LAS has been the focal point in the organization of regular congresses in *Lettonics*.

The 2007 Congress was very well received with close to 480 reports and was also well attended by young scientists — almost 23% of the participants were baccalaureate, Master degree and doctoral students. The central theme of the congress was subdivided into 13 sections that operated not only in Rīga, but also in Liepāja and in Daugavpils. The section *The Cultural Historical Heritage of the Region of Courland, Its Research and Preservation* took place at the Liepāja Pedagogical Academy on 25–26 October and the section *Society of Latgale in the Circles of Development: Linguistic, Political, Legal, Sociological, Historical Aspects* was held at the Daugavpils University on 12–13 November.

The 2007 Congress announced the year 2008 as the Year of *Lettonics* in Latvia to commemorate the 90th anniversary of the proclamation of the Republic of Latvia and the centennial of the modern Latvian orthography.

The 2007 Congress adopted a Resolution that focused on the future work to facilitate Latvian studies along with emergence of new ideas and integration in the society (see also http://cordis.europa.eu/erawatch/index/).

Congratulatory addresses by Valdis Zatlers, President of the Republic of Latvia, and Valdas Adamkus, President of the Republic of Lithuania, to the 2nd Congress of Latvian Studies (Lettonics)

Honourable participants and organizers of the Congress!

Opening the 2nd Congress of Latvian Studies, we, who represent the Lithuanian and Latvian peoples, which are the only two extant Baltic peoples in the world and are united by their kindred languages and cultural roots, wish to congratulate you upon this significant event! The main mission of research in Latvian Studies is the preservation and collection, investigation and interpretation of Latvian national values. Lettonics is an identity that manifests itself in the folklore, language, literature, history, ethnography, philosophy of the inhabitants of Latvia, which makes them different from others and interesting to others through this difference. This work also

facilitates deeper research in Baltic Studies, and this is important not only to Latvian, but also to Lithuanian people.

Looking at the programme of this year's 2nd Congress of Latvian Studies, we can see how much has been accomplished regarding the research in Latvian Studies since 2005. However, research should be carried on henceforth: both in the specific research fields of humanities, and in the so-called interdisciplinary research, when, e.g., one province, district, region, ethnographic area is being studied both by linguists — dialectologists, sociolinguists, and by historians — archaeologists, ethnographers, ethnologists, and also by scholars and professionals in folklore and oral history, etc.

Let us be aware of the fact that such fields of study can be fully developed only in their own national country. Therefore, it is important now, when a part of our people is leaving their homeland in search of a better life, to raise our self-confidence through such events, and to acknowledge anew our place and significance in the world.

We very much hope that what has been accomplished will make a contribution to the research in all Baltic Studies, and wish you success in your work!

Valdis Zatlers,
President of the Republic of Latvia
Valdas Adamkus,
President of the Republic of Lithuania

LATVIA'S SCIENCE AND HIGHER EDUCATION HIGHLIGHTS 2007 AND 2008

2007

- The financing of Latvian science from the state budget kept increasing in 2007 and reached 41 million lats. Two new funding mechanisms: base funding (14.8 million LVL) and funding of National Research Programmes (6.3 million lats) were fully implemented. Financing for the Latvian science provided by the EU Structural Funds, Framework Programme, etc. was also of great mportance.
- In January, new members were elected to the Latvian Council of Science. Elmärs Grens, full member of LAS, was elected and approved the Chairman of the Council.
- On 22 February, Janez Potočnik, European Commissioner for Science and Research, paid a working visit to Latvia. He met with Prime Minister of the Republic of Latvia Aigars Kalvītis, President of the LAS Juris Ekmanis, Minister of Education and Science Baiba Rivža. Janez Potočnik participated in the discussion with representatives of Latvian science and business enterprises.
- The Latvian Union of Scientists (LUS) held its 7th Congress on 25 May. During the first post-congress Council meeting (on 21 June) Professor Ivars Kalviņš was elected the Chairman of the Council.
- On February 21, multi-lingual terminology portal EuroTermBank was launched in Latvia, the Rīga Latvian Society House. In 2005–2006, the Latvian Academy of Sciences participated in the EC eCONTENT project EuroTermBank devoted to the collection of European terminological resources. The project was jointly implemented by terminological institutions of Latvia, Lithuania, Estonia, Hungary, Poland, Germany, and Denmark. The Project resulted in a terminology portal in eight languages (www.eurotermbank.com). It is a European term bank linked to other resources of terms.
- Full Member of the LAS Professor Mārcis Auziņš was elected the Rector of the University of Latvia on 16 May, Corresponding Member of the LAS Professor Arvīds Barševskis was elected the Rector of the Daugavpils University on 6 June.
 Full Member of the LAS Professor Jānis Gardovskis was elected the Rector of the Rīga Stradiņš University on 3 October.
- On 3 July, Full Member of the LAS Jānis Stradiņš presented the Cicero Prize to the
 three Presidents of the Baltic States: Toomas Hendrik Ilves, Valdas Adamkus, and
 Vaira Vīķe-Freiberga, for facilitating opportunities and achievements of the Baltic
 States on national and international scale.

- 10-15 September. For popularization of science, along with the Science Café and Researchers' Night, the Innovation Week was held in Kronvalds Park in Rīga: the innovation tent, set up for this special purpose, was attended by families with children and people of all ages.
- On 2–3 May, EU Director General for Research José Manuel Silva Rodriguez visited Latvia in order to discuss the application of the European Commission 7th Framework Programme for Research and Technology Development in Latvia with representatives of the Latvian science and education and to get acquainted with the research and education projects, financially supported by EU.
- On 2 October, a discussion on the Green Paper, "European Research Space: New Perspectives", developed by the European Commission, was held at the Latvian Academy of Sciences. The discussion was chaired by Director of the Department of Ministry of Education and Science *Dr.biol.* Maija Bundule.
- In 2007, the following significant scientific editions were published:
 - Climate Change in Latvia. Ed. Māris Kļaviņš. Rīga: Academic Publishers of the University of Latvia, 2007, 268 pp.
 - Caune, A. Pētījumi Rīgas arheoloģijā [Investigations of the Archeology of Rīga]. Rīga: Institute of the History of Latvia Publishers, 2007, 572 pp.
 - Rīgas dievnami. Arhitektūra un māksla [Churches of Riga. Architecture and Art]. O. Spārītis, J. Zilgalvis, A. Tipāne a.o. Rīga: Zinātne; Mantojums, 2007, 748 pp.
- In 2007, the following prestigious conferences were held in Latvia:
 - International Baltic Sea Region Conference "Functional Materials and Nanotechnologies" (Rīga, 2–4 April 2007)
 - International Conference *Baltic Dynamics* (Rīga, 13–15 September 2007)
 - Second Congress of Lettonics (Latvian Studies) (Rīga, 30–31 October 2007; Liepāja, 26–27 October 2007; Daugavpils, 12–13 November 2007)

2008

- The year 2008 was announced as the Year of Lettonics in Latvia to commemorate
 the 90th anniversary of the proclamation of the Republic of Latvia and the centennial of the modern Latvian orthography.
- The Latvian Government took a decision to decrease the financing for science in 2009. Among other arguments, the Latvian National Development Plan, which states that "Science is one of the preconditions to provide Latvia with a modern path of development already in the nearest future", was quoted by scientists and the

Academy members when they opposed to that decision. The year-round activities gave a promising signal: in November, the 2009 state budget was approved, keeping science funding level flat. However, in December, approving the adjusted budget, science funding was reduced on average by 30% and funding of science in higher education institutions was completely removed.

- On 4 March, a joint meeting of the LAS Senate and the Scientific Council of the Latvian Institute of Organic Synthesis was held. The meeting entitled "The development of innovative science in Latvia" was attended by the President of Latvia Valdis Zatlers. Director of the Institute and Full Member of the LAS Ivars Kalvinš, focused his report on the achievements and problems of the institute. Since its establishment in 1957, the Institute has created 17 original preparations and developed 65 new approaches for the synthesis of active pharmaceutical substances. More than 190 patents have been obtained during the last five years. In 2007, the export of the best-selling drug Mildronate reached 69 million US dollars.
- On 15 May, the Latvian Council of Science held a meeting to discuss the basic principles for submission and evaluation of research projects. It was agreed that among the quality criteria particular importance shall be attached to publications in prestigious international journals.
- On 26 June, the journal *Nature* published an article "Ventastega curonica and the origin of tetrapod morphology" by researchers from Sweden, England, and Latvia about the discovery of remains of a 365 million years old tetrapod Ventastega curonia in Latvia.
- On 8 August, the 5th Congress of Selonia was held in Viesīte. The Congress was
 dedicated to the 800th anniversary of Sēlija and the 80th anniversary of the town of
 Viesīte.
- On 2 September, the Cabinet of Ministers approved the Regulations concerning
 the financing of support to attract young researchers to research institutes and to facilitate the repatriation process of Latvian researchers. An additional 37 million lats
 of the EU Social Fund have become available to co-financing the support to at least
 1000 young Latvian PhD and MA students, and medical postgraduates' specialized
 applied studies.
- In 2008, three laureates of the Nobel Prize visited Latvia:
 - On 26 May, **Professor Kurt Wüthrich** was awarded Paul Walden's Medal at a Special Meeting of the Senate of the Rīga Technical University. Professor in biophysics Kurt Wüthrich, 2002 recipient of the Nobel Prize, who was elected foreign member of the LAS in 2004, received also the LAS member diploma from the hands of the LAS president Juris Ekmanis. After the ceremony, Professor Wüthrich delivered a lecture "Fifty years in Natural Sciences a Learning Experience".

On 30 June, **Professor Jean-Marie Pierre Lehn,** French chemist, visited the Latvian Institute of Organic Synthesis. The 1987 Nobel Prize Winner in Chemistry had several meetings with the staff of the Institute.

On 9 September, **Professor Rolf Martin Zinkernagel**, University of Zürich, gave a lecture "A Comparison of Immunology with Immunity" in the lecture hall named after Paul Walden, in the Faculty of Biology, University of Latvia.

- On 9-10 October, the XXIII International Baltic Conference on the History of Science was held in Rīga. The conference was dedicated to the establishment of state-hood of the Baltic countries 90 years ago, the 50th anniversary of the Association of the History of Science and Technology of the Baltic States and the 50th anniversary of the Museum of the History of Medicine founded by Academician Pauls Stradiņš, who was also the initiator of the first one of these conference.
- On 27 October, the LAS and six Latvian higher education institutions signed a
 Protocol of Intention on the development of a unified data transmission network of
 the next generation the fundamental Latvian Academic Network.
- In 2007, the following significant scientific editions were published:
 - Boiko, M. Lietuviešu sutartines un to Baltijas konteksti [Lithuanian Sutartines and Their Baltic Contexts]. Rīga: Musica Baltica, 2008, 388 pp.
 - Ivbulis, V. Pagātne un tagadne neatkarīgajā Indijā (1947–2007) [The Past and Present of the Independent India (1947–2007)]. Rīga: Academic Publishers of the University of Latvia, 2008, 231 pp.
 - Latviešu tautasdziesmas. 9. sējums [Latvian Folk Songs. Volume 9]. Scient. ed. Baiba Krogzeme-Mosgorda, ed. Elga Melne. Rīga: Zinātne, 2008, 866 pp.
- In 2007, the following prestigious conferences were held in Latvia:
 - International Conference "Functional Materials and Nanotechnologies" (Rīga, 1–4 April 2008)
 - The 15th International Conference "Mechanics of Composite Materials" (Rīga, 26–30 May 2008)
 - International Conference "Progress of Atomic and Molecular Physics" (Līgatne, 16–18 June 2008)
 - The 6th International Conference "Advanced Optical Materials and Devices" (Rīga, 24–27 July 2008)
 - International Conference "Latvian National Independence: The Idea and Its Realization" (Rīga, 13–14 November 2008)

INTERNATIONAL CO-OPERATION

The Latvian Academy of Sciences (LAS) is continuously contributing to research cooperation. Cooperation with learned societies, scientific unions and associations and representation of science of Latvia in international scientific organizations that support and contribute to scientific research and development of science belong to statutory tasks of the LAS.

Representation of Latvia's science within EU structures and international inter-governmental organizations

Carrying out a commission of the Government, the LAS represents Latvia in the following EU structures:

- EU Scientific and Technical Research Committee (CREST), an advisory body
 whose function is to assist the European Commission and the Council of the EU
 in performing the tasks incumbent on these Institutions in the sphere of research
 and technological development (http://consilium.europa.eu)
- Joint Research Centre (JRC) Board of Governors (http://www.jrc.ec.europa.eu)

The LAS became eligible for the membership of European Academies Scientific Advisory Council (EASAC) in 2004. Latvian member of EASAC is the LAS Foreign secretary Andrejs Siliņš. The 2008–2009 EASAC reports, as *Impact of Migration on Infectious Diseases in Europe, Combating the Threat of Zoonotic Infections* and *Ecosystems and Biodiversity in Europe* were disseminated to specialists and experts of the field and to the corresponding parliamentary commissions (http://www.easac.org).

The LAS has entered into agreement on scientific cooperation with UNESCO and apart from this continually cooperates with the Latvian National Commission (LNC) for the UNESCO (http://www.unesco.lv). The LAS, the Latvian National Commission for the UNESCO and L'Oreal Baltic jointly launched the fellowships *For Women in Science*, which are granted annually.

The LAS holds the status of observer at the Federation of the European Academies of Medicine (FEAM) since 2006. The aim of FEAM, founded in 1993, is to promote cooperation between the national Academies of Medicine or those having the medical division; and to extend to the political and administrative authorities of the EU the advisory role that the Academies exercise in their own countries on matters concerning medicine and public health (http://www.feam.eu.com).

In 2008, the Ministry of Education and Science of Latvia has delegated to LAS the functions of the national funding agency for several European science programmes

and projects, and of providing national representation of Latvian scientists in the relevant EU research programme committees and working groups. Thus, the LAS has undertaken the functions of coordinating and implementing EUREKA and COST programmes, the Joint Baltic Sea research programme BONUS, Joint Technology Initiatives and the functions of national funding agency for ERA-NET and ERA-NET Plus projects.

Representation of Latvia's science in international non-governmental organizations and networks

The science of Latvia is continuously represented by the LAS in non-governmental international organizations, which deal with strategic problems of science development. These include:

- International Council for Science (ICSU) an international nongovernmental organisation uniting both national members (mainly academies of sciences) and disciplinary unions (http://www.icsu.org). In the 2008 General Assembly, which was mainly devoted to reviews of the large research programmes, the LAS was represented by Professor Kari Raivio (Finland);
- International Union of Academies of Humanities and Social Sciences (UAI) an international union of humanitarian academies (http://www.uai-iua.org);
- European Federation of National Academies of Sciences and Humanities (ALLEA), which associates 53 Academies of Sciences in 40 European countries, whose member academies are self-governing communities of scientists and scholars. ALLEA seeks to promote the exchange of information and experience between Academies, offers European science and society advice from its Member Academies, and strives for excellence in science and scholarship, high ethical standards and independence from political, commercial and ideological interests (http://www.allea.org).

The LAS participate in the following regional and global networks of academies of sciences:

The LAS is a member in the InterAcademy Panel on International Issues (IAP) since 2000. IAP is an informal network, which spans 100 academies of sciences (2008) and its core function is to strengthen the capabilities of science academies in all countries, but especially in the developing world. To pursue this goal the IAP besides other activities is mounting international programmes on issues that can be used by member academies at a local level. The LAS has joined the IAP Water Programme and in this regard was represented at the 2nd European Regional Workshop of the IAP Water Programme and International Conference "Ecohydrological Processes and Sus-

tainable Floodplain Management" in Lodz in May 2008 (http://www.interacademies.net).

The LAS is a member of the InterAcademy Medical Panel on Global Health Issues (IAMP), which is a network covering Academies of Medicine and Academies of Sciences, holding departments of Medical Sciences (64 in total) since 2006 (http://www.iamp-online.org).

The LAS is involved in the structure of the Central-and-Eastern European Network of Academies of Science (CEEN). The standing network, established in 2003, is a platform for dialogue among the presidents of national academies of sciences in connection with the then upcoming EU enlargement. The scientific secretariat of CEEN is ensured by the European Academy of Sciences and Arts (http://www.euro-acad.eu). The network members meet twice a year at the invitation of its members. In October 2008, in cooperation with the Montenegrin Academy of Sciences and Arts and other multinational scientific networks, CEEN organized an international conference "Role of National Science Academies in the 21st Century" in Podgorica, where a Universal Declaration was issued. The LAS Foreign Secretary Andreis Silinš attended the event.

The LAS is the Affiliated Organization of International Foundation for Science (IFS), the mission of which is to contribute to strengthening the capacity of developing countries to conduct relevant and high quality research on the sustainable management of biological and water resources (http://www.ifs.se). The LAS members are involved in the grant proposal evaluation process.

Multilateral cooperation among the academies of sciences of the Baltic States and the Baltic-Nordic academies of sciences

The LAS continually maintains friendly cooperation with the Estonian Academy of Sciences and the Lithuanian Academy of Sciences. Regular collaboration is also being kept with the Nordic Academies of Sciences.

The years 2008–2009 are the interim between the 2007 Baltic Conference on Intellectual Cooperation (BCIC) and today. In October 2008, upon an invitation of the Lithuanian Academy of Sciences, the delegations of the Secretariats of the three academies of sciences met in Vilnius to discuss the issues related to the next BCIC. The latest 11th Baltic Conference on Intellectual Cooperation, "Academic Views on the National Development Strategies of the Baltic States", was held in Rīga in October 2007. It was attended by the participants from five Baltic Sea countries. The Conference plenary speakers highlighted all dimensions of sustainable development: environmental, social and economic, whereas the latter was primarily related to the energy sector, which is vitally essential for the three Baltic States. Further, the conference discussed the ways how *academia* could contribute to closer collaboration between scien-

tists of our countries within the frames of European Commission research programmes and to collaborative research within the programmes realized by various European research organizations. The 11th BCIC (2007) passed two significant documents dealing with the advancement of science and scientific cooperation: (1) Resolution on Baltic Energy Issues, (2) Resolution on the Advancement of Science and the Humanities in the Baltic Countries.

It is customary that the Baltic Conference on Intellectual Cooperation also distributes the Medals of the Baltic Academies of Sciences. This award was established in 1999 and hitherto the award ceremonies of this special international award of the Baltic academies of sciences have taken place five times and nineteen medals have been awarded. The Medals of the Baltic academies of sciences 2007 were presented to Dr. Olof G. Tandberg (Sweden) and professors Matti Saarnisto (Finland), Raimo Pullat (Estonia), Andrejs Siliņš (Latvia) and Zenonas R. Rudzikas (Lithuania). Although the wording on each Medal diploma is different, one feature they all have in common is the great contribution to fostering cooperation among the scientists in the Baltic region and to carrying out joint research.

In 2008, the LAS in collaboration with several other institutions, including the Baltic Association of the History and Philosophy of Science, organized the XXIII Baltic Conference on the History of Science that was held in Rīga on 9–10 October. The Conference was dedicated to the establishment of national science centres and national universities in the Baltic.

The LAS officers willingly visited important celebrations of the friendly academies of sciences: in April 2008, the Finnish Academy of Sciences and Letters celebrated the 100th anniversary that was attended by Foreign Secretary of the LAS Andrejs Siliņš; in October 2008, the Estonian Academy of Sciences celebrated the 70th anniversary that was attended by President of the LAS Juris Ekmanis and Secretary General of the LAS Valdis Kampars.

Bilateral scientific cooperation

The LAS cooperates with the academies of sciences of other, mainly European, countries within the frames of bilateral agreements (29 altogether). Alongside with maintaining regular exchange of information and sharing experience with partner academies, the bilateral agreements stipulate scientific exchange visits, and thus, the LAS supports groups of researchers to carry out smaller joint projects and individual scholars in performing work in the archives and libraries, and attending scientific events.

As of 1 May 2009, the LAS has made 29 bilateral agreements on scientific cooperation with the following foreign scientific institutions: Austrian Academy of Sciences,

Bulgarian Academy of Sciences, the British Academy, Academy of Sciences of the Czech Republic, European Academy of Sciences and Arts, French Academy of Sciences, Estonian Academy of Sciences, Israel Ministry of Science and Technology, Royal Society of Canada, Russian Academy of Sciences, Lithuanian Academy of Sciences, Royal Society of London, Montenegrin Academy of Sciences and Arts, Norwegian Academy of Science and Letters, Polish Academy of Sciences, Slovak Academy of Sciences, Slovenian Academy of Sciences, Academy of Finland, Hungarian Academy of Sciences, Royal Swedish Academy of Letters, History and Antiquities, National Science Council of the Republic of China (Taiwan), National Academy of Sciences of Ukraine, Israel Academy of Sciences and Humanities, Finnish Academy of Science and Letters, Italian National Academy of Sciences (*Accademia Nazionale dei Lincei*), Swiss Academy of Sciences, National Academy of Sciences of Belarus, the Berlin–Brandenburg Academy of Sciences, and Saxonian Academy of Sciences.

A narrow majority of cooperation agreements (17) stipulate support to short-term scientific visits, irrespective of the scientific discipline. These visits are carried out according to the *Regulations of short-term visits of Latvian scientists and receiving of foreign scientists under bilateral cooperation agreements*, approved by the LAS Board.

In the frames of the bilateral agreements with Polish Academy of Sciences (PAS) and the Bulgarian Academy of Sciences (BAS) reciprocal visits of researchers collaborating within joint research projects are encouraged as a priority. For the years 2009–2011, the following joint research projects have been agreed upon:

- Bulgaria and Latvia: Problems of Immaterial Cultural Heritage (*Dr.hist*. Aija Jansone, Institute of History of Latvia, University of Latvia, and Prof. Mila Santova, BAS Institute of Folklore)
- Preparation and Investigation of Novel Inorganic Materials (*Dr.* Slavcho Rakovsky, BAS Institute of Catalysis and *Dr.habil.sc.ing*. Jānis Grabis, RTU Institute of Inorganic Chemistry)
- Investigation of hydroapatite-nanodiamond composite coating (*Dr.* Emilia Pecheva, BAS Institute of Solid State Physics and *Dr.* Ēriks Palčevskis, RTU Institute of Inorganic Chemistry)
- Biological aspects of blood-borne viral infections (Dr. Russy Russev, BAS Institute of Experimental Pathology and Parasitology and Dr.med. Modra Murovska, RSU Augusts Kirhenšteins Institute of Microbiology and Virology)
- Livonia and the Polish-Lithuanian Republic from the Sixteenth to the Eighteenth Century (Prof. Boguslaw Dybas, PAS Institute of History and *Dr.hist*. Mārīte Jakovļeva, Institute of History of Latvia, University of Latvia)

- Latvian-Slavonic Linguistic and Cultural Borderland (Dr. Malgorzata Ostrowka, PAS Institute of Slavic Studies and Dr. Ilga Jansone, Latvian Language Institute, University of Latvia)
- Relations in Art between Latvia and Poland. 16th–20th Century (*Dr.art*. Ruta Kaminska, Institute of Art History, Latvian Academy of Art and *Dr*. Malgorzata Omilanowska, PAS Institute of Art)
- Structural Investigations in Solid State New Compounds, New Methods (*Dr.phys*. Anatolijs Mišņevs, Latvian Institute of Organic Synthesis, and Prof. Zofia Lipkowska, PAS Institute of Organic Chemistry)
- Abundances in AGB and post-AGB stars (*Dr.* Miroslaw Schmidt, PAS Nicolaus Copernicus Astronomical Center, and *Dr.phys.* Laimons Začs, Institute of Atomic Physics and Spectroscopy, University of Latvia).

In the frames of Latvian and Czech interacademy collaboration, the Institute of Philosophy and Sociology of the University of Latvia has signed inter-institute agreements with the Institute of Contemporary History and the Institute of Philosophy of the Academy of Sciences of the Czech Republic (2007).

Within the past ten years, the average annual number of Latvian and foreign scientists who have used the opportunities offered by the exchange programmes to carry out joint research, consultations or to participate in scientific conferences, seminars was 50–60 persons from each side. The LAS and its partner academies support also the visits of young scientists: annually about ten doctoral students of Latvia and 3–5 doctoral students nominated by the LAS partner academies use the opportunities offered by the bilateral exchange programmes.

Although various types of changes have taken place in Europe in recent years in connection with the EU enlargement and the creation of the European Research Area has given rise to different funding streams becoming available, the academies recognize the continuing importance of Agreements, but acknowledge that some revision should be necessary. Several partner academies have started to reconsider the role of collaboration agreements. At the very end of 2008, the Academy of Finland reported that it has started the process of terminating the bilateral agreements with its European cooperating academies of sciences, trusting that the good contacts created during long-lasting cooperation would continue within the European Research Area. However, with reference to the valid Memorandum of Understanding (MoU) among the Academy of Finland, the Latvian Academy of Sciences and the Latvian Council of Science, the Academy of Finland informed about continuing in 2009 to support the mobility of Latvian and Finnish researchers within the framework of the MoU between the two Academies.

Prominent among the LAS activities within the frames of bilateral agreements on scientific cooperation between the LAS and its partner academies in the past two years were the following.

In March 2007, meeting dedicated to the first decade of the cooperation between the LAS and the National Science Council of the Republic of China (Taiwan) was held in the LAS. The meeting concluded with a ceremonial donation of Taiwan textbooks to the Faculty of Modern Languages (University of Latvia).

Two Latvian–Czech workshops jointly organised by the Institute of Contemporary History of the Academy of Sciences of the Czech Republic (ASCR), the Institute of Philosophy of the ASCR and the Institute of Philosophy and Sociology of the University of Latvia have taken place in Prague (May 2007 and November 2008).

From 31 October to 1 November 2007, Vice president Andrejs Siliņš, upon invitation of the National Academy of Sciences of Belarus, participated in the First Congress of Belarusian Scientists in Minsk.

In November 2007, Full Member of the LAS Ilga Jansone represented the academy in the opening of exhibition by the Latvian Academic Library, "Latvia — Georgia. Yesterday. Today. Tomorrow". During the visit to Tbilisi, Ilga Jansone met President of the Georgian Academy of Sciences Tamaz Gamkrelidze and *inter alia* discussed the possibilities of developing cooperation between both academies in future.

In June 2008, a bilateral Latvian–Russian workshop dealing with topical social and economic problems and ways of their solution was held at the Latvian Academy of Sciences. The LAS received the delegation of five Russian leading scientists in sociology and economics headed by Professor Alexander Nekipelov, vicepresident of the Russian Academy of Sciences. The plenary meeting and roundtable discussion brought together the LAS members (Raita Karnīte, Tālavs Jundzis, Juris Krūmiņš, Tālis Tisenkopfs), the lecturers of the University of Latvia and their Russian counterparts: Professor Alexander Nekipelov, vicepresident of the RAS in social sciences, Prof. Ruslan Grinberg, director of the RAS Institute of Economics, Valerii Mansurov, deputy director of the RAS Institute of Sociology, R. Simonian, head of the Russian–Baltic Center at the RAS Institute of Sociology, Alexei Gromyko, deputy director of the RAS Institute of Europe RAS, and Zhan Toschenko, editor-in-chief of the RAS journal *Sociological Researches*.

On 29 November 2008, the LAS sent a congratulatory letter to the National Academy of Sciences of Ukraine on the occassion of its 90th anniversary and personally to President Borys Paton who celebrated his 90th birthday on the same day.

Other international activities and events

During the past couple of years, the LAS has been receiving the ambassadors of the countries whose academies of sciences have entered into collaborative partnership with the LAS: H.E. A. Vinkus, Ambassador of Lithuania to Latvia, Jean-Louis Lepretre, Counsellor for Culture and Cooperation in the Embassy of France in Latvia, H.E. A. Vesnyakov, Ambassador of Russian Federation to Latvia, H.E. M. Serenius, Ambassador of Finland to Latvia, as well as the head of the Taipei Mission in Rīga Mr. D.Wang. H.E. E.Melnic, Ambassador of the Republic of Moldova and H.E. R. Eslami, Ambassador of the Islamic Republic of Iran, also visited the LAS.

From 28 to 31 May 2008, the LAS hosted the 5th General Assembly of the Union of European Academies for Science Applied to Agriculture, Food and Nature (UEAA) and the associated workshop "Renewable Energy Resources, Production and Technologies". For the years 2008–2010, the rotating UEAA presidentship is held by Latvia and Full Member of the LAS Professor Baiba Rivža holds the office of the UEAA President in charge (http://www.euracadagri.com).

On 14 July 2008, the LAS sent a congratulatory letter to the German Academy of Sciences *Leopoldina* on the occassion of its solemn designation as Germany's national academy of sciences and taking on new responsibilities.

On 5–7 October 2008, the LAS Vicepresident Tālavs Jundzis attended the Fifth Annual Meeting of the Science and Technology in Society forum in Kyoto. Over 750 leading scientists, policy-makers, business executives and media leaders gathered from 91 countries, regions and international organizations. The 2008 STS forum discussed science and technology under the main theme "Harmony with Nature".

In January 2009, the LAS vicepresident Tālavs Jundzis visited the celebration of 80th anniversary of the national Academy of Sciences of Belarus and attended the scientific conference dedicated to the Day of Belarusian Science (celebrated on the last Sunday of January).

The LAS members elected to leading learned societies and international institutions, honours

Full Members of the LAS, Elmārs Grēns, Vitauts Tamužs and Andrejs Cēbers have been elected Full Members of *Academia Europaea* — international, non-governmental association of outstanding individual scientists (founded in 1988). Full Member of the LAS Andris Ambainis and Corresponding Member of the LAS Aleksejs Kuzmins have formerly received the Baltic *Academia Europaea* Award for Young Scientists (1996).

Full members of the LAS Vitauts Tamužs, Uldis Viesturs, Andris Krūmiņš and Corresponding Member of the LAS Aleksandrs Šostaks have been elected members of

the European Academy of Sciences in Support of Excellence in Science and Technology (founded in 1999).

Full members of the LAS Elmārs Blūms, Andris Caune, Juris Ekmanis, Vija Kluša, Ivars Knēts, Rihards Kondratovičs, Maija Kūle, Jānis Lielpēters, Tālis Millers, Jānis Stradiņš, Uldis Viesturs, Jānis Volkolākovs, Pēteris Zvidriņš, and the LAS *Dr.h.c.* Jānis Vētra have been elected full members of the European Academy of Sciences and Arts (*Academia Scientiarum et Artium Europaea*).

Full Member of the LAS Juris Ekmanis has been elected Foreign Member of the Lithuanian Academy of Sciences.

Full Member of the LAS Elmārs Grēns has been elected Corresponding Member of the Russian Academy of Sciences.

Full Member of the LAS Baiba Rivža has been elected Corresponding Member of the Russian Academy of Agricultural Sciences, Foreign Member of the Royal Swedish Academy of Agriculture and Forestry and of the Lithuanian Academy of Sciences.

Full Member of the LAS Jānis Stradiņš has been elected member of the German Academy of Sciences *Leopoldina*, the Corresponding Member of the Saxonian Academy of Sciences and Foreign Member of the Academies of Sciences in Estonia, Lithuania and Georgia.

The LAS *Dr.h.c.* Voldemārs Strīķis has been elected Foreign Member of the Lithuanian Academy of Sciences.

Full Member of the LAS Arnis Treimanis has been elected Foreign Member of the Royal Swedish Academy of Engineering Sciences.

Full Member of the LAS Ivars Kalviņš has been awarded WIPO Gold Medal *Outstanding Inventor*, 2005, and elected Honorary Academician of the Ukrainian Medical Stomatological Academy.

Full Member of the LAS Gunārs Duburs has been awarded WIPO Gold Medal *Outstanding Inventor*, 2006.

Corresponding member of the LAS Maija Dambrova has received a Medal at the Korea International Women's Inventor Exposition KIWIE-2009.

Foreign Member of the LAS Jüri Engelbrecht has been elected the President of the European Federation of National Academies of Sciences and Humanities, ALLEA (since 2005).

Full Member of the LAS Baiba Rivža is the President in charge of the Union of European Academies for Science Applied to Agriculture Food and Nature (UEAA), 2008–2010.

XI BALTIC CONFERENCE ON INTELLECTUAL COOPERATION IN RĪGA

On 9–10 October 2007, the XI Baltic Conference on Intellectual Cooperation (BCIC) was held in Rīga, at the Latvian Academy of Sciences. The conference theme was "Academic Views on the National Development Strategies of the Baltic States" and it assembled the delegations of the traditional partners of the Latvian Academy of Sciences (LAS), namely the Estonian Academy of Sciences and the Lithuanian Academy of Sciences, as well as the Finnish Academy of Science and Letters, the Delegation of the Finnish Academies of Science and Letters and the Royal Swedish Academy of Sciences. The Baltic conferences on intellectual cooperation always include the meeting of the presidents of the Baltic academies of sciences, too, and it has been eight years since the LAS had the privilege to organize such an event in Rīga.

After the opening addresses, the three conference co-chairmen, namely, President of the Latvian Academy of Sciences Juris Ekmanis, President of the Estonian Academy of Sciences Richard Villems, and President of the Lithuanian Academy of Sciences Zenonas R. Rudzikas, presented this year's recipients with the Medals of the Baltic academies of sciences: Olof G. Tandberg (Sweden), Matti Saarnisto (Finland), Raimo Pullat (Estonia), Andrejs Siliņš (Latvia), and Zenonas R. Rudzikas (Lithuania). Although the wording on each Medal diploma was different, one feature they all had in common was the great contribution to fostering cooperation among the scientists in the Baltic region and to carrying out joint research.

The Conference plenary speakers highlighted all dimensions of sustainable development: environmental, social and economic, whereat the latter was primarily related to the energy sector, which is vitally essential for the three Baltic States. On the second day, the conference discussed the ways how *academia* could contribute to closer collaboration between scientists of our countries within the frames of European Commission research programmes and to collaborative research within the programmes realized by various European research organizations, and the presidents of the Latvian, Estonian and Lithuanian academies of sciences signed a renewed Protocol (2008–2010) to the Agreement on Scientific Cooperation among the Estonian, Latvian, and Lithuanian academies of sciences.

It has to be noted that, since their revival in 1999, the Baltic Conferences on Intellectual Cooperation have taken place every second year alternately in Rīga (1999), Tallinn (2001), Vilnius (2003), and Helsinki (2005), but more importantly, nowadays these conferences are organized by the academies of sciences. The first six of the Conferences on Intellectual Cooperation in the 1930s were held under the auspices of the International Institute on Intellectual Cooperation (replaced by UNESCO) at the

League of Nations. However, the tradition of these international conferences that were revived upon the initiative of Professor Jānis Stradiņš, is being successfully continued.

The XI Baltic Conference on Intellectual Cooperation passed two resolutions dealing with the advancement of science and scientific cooperation:

- Resolution on the advancement of science and the humanities in the Baltic countries;
 - Resolution on Baltic Energy Issues.

RESOLUTION ON THE ADVANCEMENT OF SCIENCE AND THE HUMANITIES IN THE BALTIC COUNTRIES

The XI Baltic Conference on Intellectual Cooperation that brings together the academies of sciences of the Baltic States, the Royal Swedish Academy of Sciences, the Finnish Academy of Science and Letters, and the Delegation of the Finnish Academies of Science and Letters note with satisfaction that research and development funding, after the accession to the European Union, has considerably increased in the new member states both through the EU funding and the financing provided from the government R&D budget, and national research programmes have been launched. In regard to the field of research and development, the Conference participants acknowledge that while the sciences facilitating progress in introducing modern technologies in the Baltic countries and new competitive high added value product industries should be funded primarily, it is necessary also to provide adequate financing for basic research in natural, as well as social sciences and the humanities.

The Baltic States' government support appears to be particularly essential to the humanities, which deal with investigation of history, languages, ethnology and culture of the Baltic nations, since these are not directly financed from the EU funds and funding of the humanities should remain a national responsibility. These sciences lay the foundation of national identity and development of distinctive culture, being of particular importance, in the frames of the EU, to developing and underlining the originality of small countries and nations. Hence, such branches of the humanities as Baltistics (Lithuanistics, Lettonistics) and Finno-Ugristics should receive a particular support, both moral and financial, through earmarked funding from the corresponding government R&D budget and through upholding the prestige of the humanities and educating the younger generation of scholars.

Not only the gross domestic product reflects the nation's standard of living, but also the human development index, which is closely related to the development of the humanities and social sciences, and therefore, each country shall find the necessary funds for support of these branches. Great attention is traditionally being paid to the humanities in Finland. In Lithuania, the Lithuanistics state programme is being carried out successfully and in Estonia there are three programmes in the humanities, including the programme *Estonian mentality and language*. In Latvia, a National research programme *Lettonics* (Latvian Studies) has been established and carried out. The programme is being coordinated by the Latvian Academy of Sciences. The conference highly appreciates the hitherto achieved results and welcomes the intention to announce 2008 as the Year of Lettonics in Latvia.

These programmes and activities are important for studying the problems of identity of small countries and to facilitate the preservation and improvement of the cultural heritage.

The Conference considers it necessary to foster wide international, primarily a Baltic-wide, cooperation among scholars through initiating joint projects and outlining common problems with the purpose to step beyond national framework.

The Baltic Conference on Intellectual Cooperation urges the parliaments and governments of their respective countries that the strategic documents shall emphasize the role of research and higher education with particular attention paid to the humanities.

RESOLUTION ON BALTIC ENERGY ISSUES

Recent and not too distant future events related to Baltic States energy industries will have substantial influence on the development of this so important for our countries branch of economy, its efficiency, security and reliability of energy supply. The forced closure of Ignalina Nuclear Power Plant in 2009, the obligatory implementation of very strict environmental regulations from 2008, full dependence on a single supplier of natural gas, not adequate interconnections of Baltic high voltage networks with the grids of Western countries, very limited local energy resources make the energy supply of our states vulnerable to various shocks caused by technological, economic and political factors both in short and long term perspective. It is evident that arising threats should be eliminated or neutralized more efficiently by joint actions and coordination of the Baltic States energy policies and strategies.

The results and conclusions of several studies clearly show that joint and coordinated planning and development of the energy sectors may provide very substantial

economical benefits to all three countries. It is also evident that only joint efforts will bring to efficient solution of the set of problems related to the strategic reliability and security of energy supply.

The past experience in cooperation on energy related research, the needs arising from agreement to jointly build new nuclear plant and other potential joint projects (LNG terminal, underground gas storage) are requesting initiation and coordination of research activities in those areas.

The Conference acknowledges that:

- 1. The governments of the three Baltic States should be strongly urged to approve without further delay the Baltic Energy Strategy, which is at the finalizing stage, and notes that working out of a Common Energy Strategy was initiated by Presidents of the Baltic States' academies of sciences:
- 2. Action plan for implementation of main goals should follow the approval of Common Strategy;
- 3. The energy industry is very complex, very capital intensive, long-lasting and expensive in research and development process. Small countries must concentrate only on some very specific activities corresponding to intellectual and financial capacities. Therefore, the coordination of future energy research programmes of three countries is needed:
- 4. The basic changes in future energy technologies, particularly large scale utilization of renewable energy resources, rehabilitation of nuclear energy on sustainable development path and timely implementation of those technologies require urgent increase in research activities both in universities and research centres with corresponding financial support for modernization of needed infrastructure;
 - 5. Coordination of university study programmes in energy is highly recommended.

GRAND MEDAL, PRIZES, AND AWARDS OF THE LATVIAN ACADEMY OF SCIENCES

GRAND MEDAL OF THE LATVIAN ACADEMY OF SCIENCES

The Grand Medal of the Latvian Academy of Sciences is the highest reward which is awarded by the LAS to scientists of Latvia and of foreign countries for their outstanding creative contribution.

The Grand Medal of the LAS is cast in bronze. The LAS emblem with an inscription "Academia Scientiarum Latviensis" is depicted on its front and the name and family name of the person awarded and the date of awarding are engraved on the reverse side.

Candidates for the above reward may be recommended by the LAS full, honorary, and foreign members, the LAS Divisions, by submitting in a written form a motivated proposal and a brief reference on the candidate recommended. The LAS Senate takes a decision about awarding.

So far, the LAS Grand Medal has been awarded to J. Graudonis (1993), J. Stradiņš (1993), E. Dunsdorfs (1994), E. Lavendelis (1994), E. Grēns (1995), D. A. Loeber (1995), M. Staudinger-Woit (1996), E. Lukevics (1996), E. Siliņš (1997), V. Vīķe-Freiberga (1997), D. Draviņš (1998), J. Krastiņš (1998), O. Lielausis (1999), J. Upatnieks (1999), G. Birkerts (2000), M. Beķers (2000), A. Caune (2001), J. Hartmanis (2001), T. Millers (2002), V. Toporovs (2002), R. M. Freivalds (2003), I. Šterns (2003), I. Lancmanis (2004), A. Padegs (2004), E. Blūms (2005), E. Vedējs (2005), R. Kondratovičs, T. Fennels (2006), V. Hausmanis (2007), R. Evarestovs (2007), V. Tamužs (2008), Ē. Kupče (2008), I. Kalviņš (2009, and K. Zariņš (2009).

PRIZES OF THE LATVIAN ACADEMY OF SCIENCES

For the best scientific contribution in certain branches of science, the LAS awards prizes which are named after prominent Latvian scientists. Each prize is announced biennially or triennially.

A prize is awarded for individual scientific contribution, discoveries, inventions, as well as for a series of scientific works (devoted to a common subject). Only an individual candidate may be nominated to contest for the prize and the main author from a

group of authors. Scientists of Latvia and those scientists living abroad, whose research subject is connected with Latvia, may stand for a prize.

The fund of the LAS prizes is formed of the LAS monetary resources and of supporters' donations.

The Latvian Academy of Sciences awards the following prizes:

The Rainis Prize for outstanding contribution in science or culture

IN PHYSICAL AND TECHNICAL SCIENCES

The Eižens Āriņš Prize in computer sciences and their applications

(together with the joint stock company "Dati" and Latvian Education

Foundation)

The Arturs Balklavs Prize for outstanding achievements in popularization

of science

The Pirss Bols Prize in mathematics

The Fridrihs Canders Prize in mechanics and astronomy

The Walter Zapp Prize to the best inventor

(together with the Patent Office of the Republic of Latvia)

The Edgars Siliņš Prize in physics

The Alfrēds Vītols Prize in engineering sciences and energetics

(together with the joint stock company "Latvenergo")

IN CHEMICAL, BIOLOGICAL, MEDICAL, AND AGRICULTURAL SCIENCES

The Arvīds Kalniņš Prize in forestry, wood research, and technology (together with the Latvian Academy of

Agriculture and Forestry)

The Paulis Lejiņš Prize in agricultural sciences
The Heinrichs Skuja Prize in biological sciences

The Pauls Stradiņš Prize in science of medicine and its history, for outstanding scientific contribution in practical medi-

Museum of the History of Medicine) cir.

The Gustavs Vanags Prize in chemical sciences

The Solomons Hillers Prize for outstanding achievements in biomedicine and (together with the joint stock company the design of new medications

"Grindex," Latvian Institute of Organic Synthesis, Biomedical Research and Study Centre, University of Latvia)

IN SOCIAL SCIENCES AND HUMANITIES

The Jānis Endzelīns Prize in Latvian linguistics, Baltic Studies

The Kārlis Balodis Prize in national economy

The Fricis Brīvzemnieks Prize in Latvian folklore studies

The Teodors Celms Prize in philosophy

Dītrihs Andrejs Lēbers Prize in jurisprudence or political science

The Arveds Švābe Prize in history of Latvia
The Vilis Plūdonis Prize in literary criticism

The Tālivaldis Vilciņš Prize in sociology

The Kārlis Mīlenbahs Prize in applied Latvian linguistics

(together with the Rīga Latvian Society)

The Margers Skujenieks Prize in statistics

The Kārlis Ulmanis Prize for research in and solutions for the national

economy of Latvia and study of the problems of

the history of the State

Four to six LAS prizes are granted every year. The list of prizes is published in June in the newspapers *Latvijas Vēstnesis* and *Zinātnes Vēstnesis*, as well as in the homepage of the LAS (http://www.lza.lv). The submission deadline for applications is 30 September 2009.

THE OUTSTANDING SCIENTISTS WHOSE NAMES HAVE BEEN ATTRIBUTED TO THE LATVIAN ACADEMY OF SCIENCES PRIZES

Eižens Ā**RIŅŠ** (1911–1987) — mathematician; in the 1950s, he was one of the first scientists in Latvia to go in for computer technology. In 1959, he established the first Computing Centre in Latvia (now the Institute of Mathematics and Computer Sciences at the University of Latvia).

The winners of Eižens Āriņš prize are R. M. Freivalds (2000), V. Detlovs (2002), J. Osis (2004), J. Bārzdiņš (2006), and L. Kacnelsons (2008).

Kārlis BALODIS (1864–1931) — a wide-profile specialist in national economy who has substantiated many new economic ideas, particularly focusing on "the state capitalism."

The Kārlis Balodis Prize has been awarded to N. Balabkins (1994), P. Zvidriņš (1996), O. Krastiņš (1998), J. Krūmiņš (2004), and R. Karnīte (2007).

Arturs BALKLAVS-GRĪNHOFS (1933–2005) — radioastronomer, outstanding popularizer of sciences. Since 1969, director of Radioastrophysical Observatory (uniting observatories of the LAS and LU). From 1997, Director of the Institute of Astronomy of LU. Member of the European Astronomical Society (EAS, 1967), Editor-in-Chief of the magazine *Zvaigžņotā Debess* (1969–2005).

The winners of the prize are V. Grabovskis, I. Vilks (2007), A. Alksnis, I. Pundure (2008), and A. Vēriņš (2009).

Pīrss BOLS (1865–1921) — the most outstanding mathematician who has ever lived and worked in Latvia. In 1887, he graduated from the University of Tartu. Since 1895, professor at Rīga Polytechnic School and Rīga Politechnic Institute, in 1919–1921 — at the University of Latvia. Remarkable studies in the theory of stability of differential equations and invariants, as well as in celestial mechanics. Founder of the theory of quasiperiodical functions, recognised as one of the authors of the principle of motionless point.

The winners of the prize are A. Buikis (2005) and A. Reinfelds (2009).

Fricis BRĪVZEMNIEKS (1846–1907) — a student of folklore, writer, one of the first collectors, classifiers, and publishers of the Latvian ethnography and folklore materials.

The Fricis Brīvzemnieks Prize was awarded to J. Rozenbergs (1996), M. Vīksna (1999), and A. Alsupe (2005).

Frīdrihs CANDERS (1887–1933) — one of the first pioneers of rocket construction in the world. He was born in Rīga, studied at the Rīga Polytechnic Institute from which he graduated in 1914. As a refugee, he went to Russia, when the First World War broke out. Ideas of "the sun sail," "the cosmic hot-house," and "the cruise missile" belong to him, Frīdrihs Canders' name is given to a crater on the Moon and to one of the small planets.

The Frīdrihs Canders Prize follows up the best traditions of the Frīdrihs Canders Award established on 7 December 1967. It has been awarded to E. Blūms and J. Mihailovs (1971),

G. Teters (1972), J. Uržumcevs and R. Maksimovs (1976), E. Lavendelis (1978), A. Mālmeisters, V. Tamužs, and G. Teters (1981), E. Jakubaitis (1985), A. Bogdanovičs (1989), E. Ščerbiņins and J. Geļfgats (1991), A. Gailītis (1994), P. Prokofjevs, R. Rikards (1996), J. Kotomins, J. Tarnopoļskis (1998), M. Ābele, A. Skudra (2000), J. Žagars, V. Poļakovs (2002), A. Balklavs-Grīnhofs, and J. Vība (2004), K. Lapuška, and K. Rocēns (2007), A. Lagzdiņš (2009).

Walter ZAPP (1905–2003) — an outstanding inventor, with his wold-famous photo camera *VEF-Minox* has promoted the name of Latvia to the world. The prize was established in 2004 together with the Patent Office of the Republic of Latvia.

The winners of prize are B. Joffe and R. Kalninš (2005), and J. Upatnieks (2007).

Teodors CELMS (1893–1989) — an outstanding philosopher. He studied economy and philosophy in Moscow, obtained a doctoral degree in philosophy. Being a widely profiled specialist he has presented lectures in philosophy, cultural philosophy, philosophy of science and technology, as well as in history of technology. From 1944, he lived and worked abroad.

The winners of prize are M. Kūle (2006) and E. Buceniece (2009).

Jānis ENDZELĪNS (1883–1961) — an outstanding Latvian linguist. His scientific studies have influenced the development of the Latvian linguistics and the Baltic Studies in general, which cannot be overestimated; he discussed the historical development of the Latvian language, its present structure, and allied connections.

The Jānis Endzelīns Prize follows up the best traditions of the Jānis Endzelīns Award established on 7 December 1967. It has been attributed to A. Laua (1970), B. Laumane (1974), L. Ceplītis (1976), A. Reķēna (1978), D. Nītiņa (1980), T. Jakubaite (1982), E. Kagaine and S. Raģe (1984), J. Rozenbergs (1986), B. Bušmane (1990), K. Karulis (1994), T. Fennell (1996), V. Rūķe-Draviņa (1998), V. Skujiņa (2001), I. Jansone (2004), and D. Markus (2007).

Emīlija GUDRINIECE (1929–2004) — academician of the LAS, professor of the Rīga Technical University — outstanding chemist and teacher, founder of the Chair of Organic Synthesis and Biotechnology (1963–1989). Under her leadership the Chair prepared more than 800 specialists of biologically active compounds chemistry, 28 specialists have worked out doctoral thesis. The scientific work of E. Gudriniece was dedicated to heterocyclic compounds, to the investigation of their biological activity, as well as to the possibility of practical usage of the oil from plants in fuel production.

The laureate of the grant are A. Kotova (2007) and D. Lubriks (2008), K. Jaundzems (2009).

Solomons HILLERS (1915–1975) — professor, full member of the LAS, founder and long-standing director of the Latvian Institute of Organic Synthesis, excellent organiser of Latvia's chemical and pharmaceutical science and industry.

The prize was established in 2004 together with the public joint stock company "Grindex," Latvian Institute of Organic Synthesis, and the Biomedical Research and Study Centre of the University of Latvia. The winners of the prize are I. Kalviņš (2004), E. Grēns (2006), and V. Kluša (2008).

Kārlis IRBĪTIS (1904–1997) — aviation constructor and designer. Since 1947, he was working in Canada and has received patents of Canada and USA for his inventions. Honorary doctor of the LAS.

Since 2003, the Kārlis Irbītis Grant has been given to 85 scientists and students.

LUDVIGS and MĀRIS JANSONS — Ludvigs Jansons (1909–1958) and his son Māris Jansons (1936–1997) — Latvian physicists and pedagogues.

Ludvigs Jansons worked at the Chair of Physics, University of Latvia, from 1934 till the end of his life, performing the duties of Vice-Dean and Dean of the Faculty at various periods. After the war, he established faculties of physics both at the University of Latvia and at the Pedagogical Institute. His study-book for students titled *Practical Studies of Physics* (1947) has been republished in 1954, 1961, 1971, and 1979.

Māris Jansons — full member of the LAS, professor. After graduation from the University of Latvia, he worked there all his life. Head of the Department of Spectroscopy (1979–1993), and also Head of the Chair of the Experimental Physics (1989–1993). Since 1994 — Director of the Institute of Nuclear Physics and Spectroscopy.

The Ludvigs and Māris Jansons Prize has been awarded to H. Rjabovs (1999), A. Kuļšs (2000), O Nikolajeva (2001), J. Alnis (2002), O. Docenko (2003), O. Starkova (2004), K. Blušs (2005), Z. Gavare (2006), B. Poļakovs (2007), A. Vembris (2008), and E. Laizāne (2009).

Arvīds KALNIŅŠ (1894–1981) — a prominent Latvian scientist, founder of wood chemistry and wood chemical technology in Latvia. Professor, full member of the LAS (from 1946), founder and director (1946–1976) of the LAS Institute of Forestry Problems (later, the Institute of Wood Chemistry).

The winners of Arvīds Kalniņš prize are P. Eriņš (2000), M. Daugavietis (2002), Ģ. Zaķis (2003), I. Liepa (2004), J. Zandersons (2005), A. Priedītis (2006), and N. Vederņikovs (2008).

Jānis LABSVĪRS (1907–2002) — economist, historian and publicist, Dr.h.c. of the LAS.

Since 2004 the Janis Labsvirs Grant has been given to five students.

Dītrihs Andrejs LĒBERS (1923–2004) — lawyer, honorary patron, foreign member of the LAS, laureate of the Grand Medal of the LAS.

Since 2002, Dītrihs Andrejs Lēbers Grant has been given to 23 students. The winners of the prize are T. Jundzis (2008) and K. Torgāns (2009).

Paulis LEJIŅŠ (1883–1959) — a prominent Latvian scientist of agriculture, one of the organisers of the University of Latvia and its Faculty of Agriculture; since 1932, a professor of agriculture at institutions of higher education in Latvia. The scientific contribution: basic research on the selection of Latvian herds and rational development of forage. The first President of the Latvian Academy of Sciences (1946–1951).

The Paulis Lejiņš Prize has been awarded to J. Latvietis (1994), J. Neilands (1995), A. Boruks (1996), C. Šķiņķis (1997), S. Timšāns (1999), M. Skrīvele (2002), R. Baltakmens, A. Jemeļjanovs (2003), U. Osītis (2006), A. Adamovičs (2007), and A. Ruža (2009).

Zenta MAURIŅA (1897–1978) — specialist in literature, cultural philosopher, writer, internationally recognised lecturer, one of the brightest and most tragic personalities in the cultural history of Latvia.

The LAS Zenta Mauriņa Prize has been awarded to Z. Šiliņa (1999), I. Zepa (2001), D. Balode (2002), D. Oļukalne (2003), R. Ceplis (2004), S. Stepena (2005), A. Gaigala (2006), P. Daija (2007), D. Ratinīka (2008), and K. Šlihta (2009).

Kārlis MĪLENBAHS (1853–1916) — an outstanding Latvian linguist who has studied syntax, vocabulary, and orthography of the Latvian language. The founder of the Romanized Latvian orthography (1908).

The Kārlis Mīlenbahs Prize has been awarded to linguist J. Kušķis (1999), Dz. Hirša (2002), M. Stengrevica (2004), A. Blinkena (2007), and O. Bušs (2009).

Vilis PLŪDONIS (1874–1940) — a prominent Latvian poet. Worked as a literary critic, compiler of anthologies of poetry and literary readers, publicist, playwright, and teacher.

The Vilis Plūdonis Prize has been awarded to V. Hausmanis (1996), J. Kursīte-Pakule (1998), B. Kalnačs (2000), I. Daukste-Silasproģe (2003), Z. Frīde (2005), and A. Cimdiņa (2008).

Konstantīns POČS (1912–1994) — physicist, one of the outstanding scientists and innovators of Latvian origin, *Dr.h.c.* of the LAS. For more than 30 years has worked at the Laboratory of Air Forces and World Space of USA (Boston, USA), participated in realizing of the USA Moon Research Programme and development of the famous AWACS system.

Since 2002, Konstantīns Počs Grant has been given to 17 students.

RAINIS (1865–1929) — an outstanding Latvian poet, philosopher, and public figure. The first poet to express the 20th century trends. His monumental plays had a strong impact on the development of Latvian dramatic art.

By his activities in the Constituent Assembly and in three convocations of Saeima (Parliament) of the independent Latvia, and also as director of the National Theatre and the Minister of Education (1926–1927), Rainis developed the idea of loyalty to Latvia and presented the people's aspirations towards an ideal progress of society. He also supported the idea of forming an academy of sciences.

A broad philosophical, humanist outlook, lack of any kind of chauvinism or national isolation, and deep respect for the identity of his own and other nationalities form the greatness and imperishability of Rainis.

The LAS considers the Rainis Prize to be the second most prestigious award of the LAS after the LAS Grand Medal.

The Rainis Prize has been awarded to sculptor I. Ranka (1998), poet I. Ziedonis (2001), poet A. Eglītis (2006), and J. Streičs (2008).

Edgars SILIŅŠ (1927–1998) — one of the most outstanding Latvian physicists, full member of the LAS. In collaboration with the leading chemists of Rīga, he established and developed the school of organic solid state physics. During the seven last years of his life, he became interested in the basic principles of the world cognition. In 1998, his fundamental monograph "Searches of the Great Truths — Essays on History of Ideas and Paradigms" was completed.

The winners of the Edgars Siliņš Prize are I. Muzikante (1999), A. Gailītis, P. Prokofjevs (2001), L. Skuja (2003), A. Cēbers (2006), and J. Purāns (2008).

Heinrichs SKUJA (1892–1972) — an outstanding Latvian biologist, investigator of flora. In 1944, he emigrated to Sweden, *Doctor honoris causa* of the Uppsala University (1958). He has carried out wide-scale studies of the

algae flora in the Baltic Sea, lakes of Latvia and Sweden, etc., discovering and giving scientific descriptions of more than 700 new varieties. A member of the Uppsala Royal Learned Society. Has been awarded the Grand Berkjen's Prize (1961).

The Heinrichs Skuja Prize has been awarded to M. Selga (1994), A. Piterāns (1996), M. Beķers (1998), A. Āboliņa (2001), M. Balode (2004), E. Parele (2007), and A. Barševskis (2009).

Margers SKUJENIEKS (1886–1941) — a scientist and politician, Prime Minister, minister, organiser, and director of the State Board of Statistics (1919–1940).

The winners of Margers Skujenieks Prize are P. Zvidriņš (2004), and O. Krastiņš (2008).

Pauls STRADIŅŠ (1896–1958) — a prominent Latvian surgeon, oncologist, and historian of medicine. Has carried out remarkable studies on peripheral nerve surgery, early diagnostics of cancer, and on history of medicine of Latvia. Has organised, formed, and headed the Pauls Stradiņš Clinical University Hospital. On the basis of his private collection, under his leadership, the Museum of History of Medicine was formed in Rīga (1957).

The Pauls Stradiņš Prize follows up the traditions of the Museum of History of Medicine (MHM) Pauls Stradiņš Prize, established in 1993. Since November 1991, the Prize is awarded jointly by the LAS and the MHM.

The Pauls Stradiņš Prize in medicine has been awarded to V. Rudzīte and V. Utkins (1992), K. J. Keggi (1994), J. O. Ērenpreiss (1996), I. Lazovskis and K. Zariņš (1998), J. Kļaviņš (2000), J. Volkolākovs (2002), A. Bļugers (2004), A. Skaģers (2006), and B. Zariņš (2008). During 1983–1998, the prize in the history of medicine was awarded to V. Kaņeps, J. Stradiņš (1983), P. Gerke, B. Petrov (1984), V. Derums and A. Georgiyevsky (1985), Ņ. Stradiņa and P. Zabludovsky (1986), K. Ārons and J. Lisitsin (1987), K. Vasiljev and A. Vīksna (1988), A. Kaikaris and V. Kalniņš (1989), H. Millers-Dics, I. Krūmals, and J. Krūmals (1990), J. Āboliņš and A. Alksnis (1991), Dz. Alks (1993), A. Dirbe (1995), J. Strupulis (1997), Z. Čerfass and E. Larsens (1999), J. Salaks, V. Kalnbērzs (2001), J. Vētra (2003), K. Habriha, V. Jākobsons (2005), E. Platkājs (2007), and J. Gaujēns (2009).

Mārtiņš STRAUMANIS and Alfrēds IEVIŅŠ — prominent Latvian chemists, authors of the fundamentally new and widely used in due course roentgenographic (asymmetric) method for determination of crystal lattice parameters (1935).

Mārtiņš Eduards Straumanis (1898–1973) — graduate from the University of Latvia (1925), lecturer at the University of Latvia (1927–1944), pro-

fessor of the University of Missouri (USA). Well-known investigator of the metal corrosion, of complex compound chemistry and electrochemistry. M. Straumanis studied also the properties of metals applied in the novel technologies, his achievements in this field being recognised internationally.

Alfrēds Ieviņš (1897–1975) — graduate from the University of Latvia (1924), Doctor of Chemical Sciences (1938), full member of the LAS (1960). His scientific and pedagogical activities were connected with the University of Latvia (till 1958) and the Rīga Politechnic Institute. Scientific interests of A. Ieviņš have been very wide — he has worked in roentgenography, in analytic chemistry, in chemistry of boron compounds. A. Ieviņš has paid great attention to work with young chemists; during nineteen years (1956–1974) he headed the organisation of the contests on chemistry for pupils, lectured for the teachers of chemistry. He was one of the founders of the LAS Institute of Chemistry being also the first Director of the Institute (1946–1953, 1959–1962).

The Mārtiņš Straumanis—Alfrēds Ieviņš Prize has been awarded to M. Turks (1999), T. Ivanova (2000), V. Mihailovs (2001), R. M. Meri (2002), K. Zihmane (2003), I. Juhņeviča (2004), K. Edolfa (2005), L. Černova (2006), E. Erdmane (2007), E. Kolodinska (2008), J. Petuškova (2009).

Arveds ŠVĀBE (1888–1959) — a historian, lawyer, and writer. Has written on folklore, literary criticism, history of literature, has prepared biographical reviews (essays). Also a poet, prosaist, publicist, and translator.

The Arveds Švābe Prize has been awarded to A. Zeids (1996), J. Bērziņš (1998), I. Šterns (2000), I. Šneidere (2003), A. Zariņa (2007), and A. Varslavāns (2009).

Kārlis ULMANIS (1877–1942) — an economist and statesman, the first Prime Minister of the Republic of Latvia. The prize was established in 2003 at the initiative of Professor J. Labsvīrs, *Doctor honoris causa* of the LAS.

The first winners of the prize were V. Bērziņš and V. Strīķis (2004), A. Boruks (2006) and A. Caune (2008).

Gustavs VANAGS (1891–1965) — an outstanding Latvian scientist of organic chemistry. He has created the Latvian school of organic chemistry in chemistry of cyclic beta-diketones. He was among the founders of the Institute of Organic Synthesis, and has developed several preparations and reagents used in medicine, agriculture, and analytical chemistry.

The Gustavs Vanags Prize follows up the best traditions of the Gustavs Vanags Award, established on 7 December 1967. It has been awarded to A. Ārens (1971), E. Gudriniece and

A. Strakovs (1972), V. Oškāja (1974), J. Freimanis (1976), O. Neilands (1978), J. Bankovskis (1980), R. Valters (1982), G. Duburs and E. Stankeviča (1984), E. Lukevics (1986), B. Puriņš (1988), M. Līdaka (1990), G. Čipēns (1992), J. Stradiņš (1994), F. Avotiņš and M. Šimanska (1996), T. Millers (1998), M. Kalniņš (2000), I. Kalviņš (2003), E. Liepiņš (2005), A. Zicmanis (2007), and G. Veinbergs (2009).

Tālivaldis VILCIŅŠ (1922–1997) — historian and sociologist, professor of history. He graduated from the Faculty of History of the University of Latvia as a correspondence student (1953). Beginning with 1963, he had worked at the Institute of History of the LAS, was the first one to introduce sociological methods in the humanities in Latvia (monograph *The Prestige of Occupations and the Choice of Occupations nowadays*, 1968). He gave a lecture course, "The Mathematical Methods in Sociology," published more than 60 scientific works including several books.

The winners of Tālivaldis Vilcinš Prize are B. Zepa (2002) and A. Tabuns (2007).

Alfrēds VĪTOLS (1878–1945) — an expert in hydromechanics, the first doctor of engineering sciences in Latvia (1923). From 1919 to 1944, associate professor and professor (from 1924) at the University of Latvia. He has taken part in the development of projects for Ķegums and Dole power plants, for Rīga–Liepāja railway, as well as in a number of other technical projects, intertwining the theoretical foundations of engineering sciences (hydraulics) with practice. In 1944, he emigrated to Sweden; he died in Uppsala.

The winners of Alfrēds Vītols Prize are J. Ekmanis (1999), V. Zēbergs (2002), N. Zeltiņš (2003), J. Barkāns (2004), K. Timermanis (2005), L. Ribickis (2006), J. Gerhards (2007), and J. Dirba (2008).

PRIZES AND GRANTS OF THE LATVIAN ACADEMY OF SCIENCES AWARDED IN SPONSORSHIP

Sponsor

Prizes

European Academy of Sciences and Arts

The European Prize of the European Academy of Sciences and Arts (Felix Prize) and 2 incentive prizes for remarkable achievements in the humanities.

The Prize has been awarded since 2001. The first winner is V. Vīķe-Freiberga, incentive prizes — I. Ose and I. Šuvajevs. In 2003 — M. Kūle, supporting prizes D. Baltaiskalna and $\bar{\rm E}$. Jēkabsons, in 2006 — V. Zariņš, supporting prizes — R. Blumberga and A. Sprūds.

Joint stock company "Grindex"

3 annual prizes to the most prominent scientists for outstanding achievements or life-long contribution

The winners are: M. Līdaka, U. Ulmanis, S. Cimermanis (1998), E. Lukevics, O. Lielausis, K. Arājs (1999), O. Neilands, V. Tamužs, V. Bērziņš (2000), V. Kluša, E. Blūms, A. Caune (2001), T. Millers, J. Kristapsons, O. Spārītis (2002), R. M. Freivalds, E. Gudriniece, P. Guļāns (2003), G. Čipēns, I. Knēts, Ē. Mugurēvičs (2004), J. G. Bērziņš, E. Kagaine, A. Strakovs (2005), V. Baumanis, P. Eglīte, J. Dehtjars (2006), V. Kauss, V. Skujiņa, J. Spigulis (2007), G. Duburs, J. Stradiņš, I. Lācis (2008).

Joint stock company "Aldaris" (1999–2004)

2 annual prizes for the most prominent scientists for outstanding achievements or life-long contribution

The winners are: U. Viesturs, P. Zariņš (1999), M. Beķers, B. Laumane (2000), D. Kārkliņa, M. Poiša (2001), M. Rukliša, V. Hausmanis (2002), I. Apine, Ī. Rašals (2003), Dz. Ērglis, U. Sedmalis (2004). Since 2005, awarding has been interrupted.

Public joint stock company "Latvenergo"

2 annual prizes to remarkable scientists for outstanding achievements or life-long contribution in engineering sciences and energetics and

The winners are: Z. Krišāns, I. Staltmanis (1999), K. Briņķis, A. Grundulis (2002), A. S. Sauhats, P. Šipkovs (2003), E. Tomsons, J. Dirba, J. Rozenkrons (2004), D. Blumberga, V. Pugačevs (2005), V. Čuvičins, A. Šnīders (2006), G. Šlihta (2007).

Joint-stock company "Exigen Services Latvia" and the Education Foundation of Latvia 2 annual prizes to remarkable scientists for outstanding achievements or life-long contribution in computer sciences and informatics are granted.

The winners are: J. Bārzdiņš, A. Anspoks (1999), J. Osis, M. Treimanis (2000), L. Niceckis, A. Vasiljevs (2001), I. Kabaškins, A. Brūvelis (2002), J. Bičevskis, E. Karnītis (2003), P. Rivža, A. Virtmanis (2005), I. Ilzina (2007).

(until 2005 JST "RD Alfa")

"RD Electronics," Ltd. A yearly prize in physics and its applications.

The winners are: K. Švarcs (2000), J. Gelfgats (2001), A. Cēbers (2002), D. Millers (2003), A. Truhins (2004), J. Jolins (2005), I. Bērsons (2006), L. Skuja (2007), J. Lielpēters (2008).

Joint stock company "ITERA Latvija" and Rīga Technical Fund

2 annual prizes to remarkable scientists and specialists — practitioners of Latvia for outstanding achievements or life-long contribution in environ-University Development mental sciences, earth sciences, and geography or for the advancement of significant systems of environmental development are granted.

> The winners are: G. Andrušaitis, A. Melluma (2001), G. Eberhards, R. Kondratovičs (2002), A. Andrušaitis, M. Kļaviņš (2003), E. Kaufmane, J. Vīksne (2004), V. Jansons, V. Melecis (2005), G. Pētersons, P. Zālītis (2006), O. Āboltiņš, D. Blumberga (2007), O. Nikodemus, I. Veidenbergs (2008).

"Lattelekom," Ltd., and the Education Foundation of Latvia 2 annual prizes to remarkable Latvian scientists and creative practitioners in the field of telecommunications and in social humanitarian sciences for outstanding contribution or life-long work.

The winners are: J. Ločmelis, Dz. Ozoliņa (2002), T. Galdiņš, T. Tisenkopfs (2003), I. Biļinskis, I. Loze (2004), J. Busarovs, J. Rubīns (2005), A. Dimants, J. Merkurjevs, G. Rankis (2006). Since 2007, awarding has been interrupted.

Joint stock company
"Latvijas Gaisa
satiksme" and
the Education
Foundation of Latvia

2 annual prizes to remarkable Latvian scientists and practitioners for outstanding results or life-long work in space information technology and engineering developments in aero-navigation communications and radiolocation technologies are granted.

The winners are: E. Bervalds, I. Kabaškins (2001), J. Kopitovs, M. Ābele, K. Lapuška (2003), J. Artjuhs, J. Žagars (2005). Awarding has been interrupted.

Joint stock company "Latvijas gāze" and Rīga Technical University Development Fund 2 annual prizes to remarkable scientists and practitioners for outstanding series of papers or life achievement in gas and heat technologies, and the related fields, and in the sciences of cardiac surgery and cardiology, and organ transplantation.

The winners are: R. Lācis, A. Krēsliņš (2002), J. Anšelevičs. E. Dzelzītis (2003), J. Volkolakovs, V. Zēbergs (2004), I. Siliņš, N. Zeltiņš (2005), V. Rudzīte, D. Turlajs (2006), A. Kalvelis, I. Platais (2007), R. Rozentāls, P. Graudiņš (2009).

and the Rīga Prize Society

The Rīga City Council Annual "Rīga Prize" for the most significant scientific study in the history, history of culture, history of architecture and art, in ethnography, demography and ethnic relations, geography, ecology, and in other fields related with the development of Rīga.

> The Prize has been awarded to J. Krastiņš, K. Radziņa, A. Celminš, incentive prize — V. Bebre, R. Spirģis (2002), A. Caune, O. Spārītis, O. Zanders (2003), L. Balodis, J. Stradinš, M. Zunde (2004), J. Bērziņš, V. Vīķe-Freiberga, A. Holcmanis, J. Vīksne, J. Savickis (2005), V. Apsītis, J. Ekmanis, I. Knēts, V. Jākobsons (2006), Z. Gaile, V. Mihailovskis, I. Ose, J. Stabulnieks, A. Vārpa (2007), E. Grēns, I. Indāns, J. Gombergs, ISC "Sidrabe" (2009).

> D. A. Lēbers has been awarded Honorary Diploma "Rīga Prize" (post mortum).

Patent Office of the Republic of Latvia

The Walter Zapp Prize — to the best inventor. The prize is awarded biennially

The winners are: B. Joffe and R. Kalnins (2005), J. Upatnieks (2007).

SIA "L'OREAL BALTIC," Latvian National Commission for UNESCO

3 years grant "To women in science" for carrying out scientific research in life sciences and materials sciences.

Grants have been given to R. Muceniece, A. Linē, A. Zajakina (2005), M. Dambrova, O. Starkova, M. Plotniece (2006), L. Grinberga, B. Jansone, A. Plotniece (2007), I. Aulika, J. Pupure, T. Voronkova (2008), K. Siliņa, T. Glaskova, L. Zvejniece (2009).

and Education Fundation of Latvia

S/C "Latvijas dzelzcelš" Yearly prize for outstandung merits or life-long work in Latvian Railway transport.

> The winners are: V. Junovičs (2007), M. Mezītis, B. Pernikis (2008)

PRIZES AND AWARDS TO YOUNG SCIENTISTS

LATVIAN ACADEMY OF SCIENCES PRIZES AND AWARDS TO YOUNG SCIENTISTS

Awards based on competition of works are granted to Master's degree students or post-graduate students, or young scientists who have defended their Master's or Doctoral thesis recently. Only papers written individually by scientists not older than 30 years at the moment of application are admissible. Nine awards are granted annually, including three in chemical, biological, agricultural, and medical sciences, three in physical, mathematical, engineering, and computer sciences, and three in the humanities and social sciences. Among them there are prizes dedicated to the continuity of Latvian science traditions and to the memory of outstanding personalities in science and culture:

Ludvigs and Māris Jansons Prize — for the best work in physics,

Mārtiņš Straumanis—Alfrēds Ieviņš Prize — for the best work in chemistry,

Zenta Mauriņa Prize — for the best work in literary studies and philosophy.

The papers for the young scientists' contest should be submitted by 30 September 2009 at the secretariat or scientific divisions of the LAS, Akadēmijas laukums 1, 2nd floor, Rīga, LV 1524. Tel.: (371) 67223931.

PRIZES AND GRANTS OF THE LATVIAN ACADEMY OF SCIENCES AWARDED IN SPONSORSHIP TO YOUNG SCIENTISTS AND STUDENTS

Sponsor Prizes

Emīlija Gudriniece To the best young scientist in chemistry or chemical technology

Emīlija Gudriniece Emīlija Gudriniece—Alfrēds Ieviņš annual grant to the students of Bachelor's, Master's degrees and engineering programmes in chemistry and chemical technology

4 annual prizes to the best young scientists S/c "Grindex" S/c "Latvenergo" 5 yearly prizes to the best young scientists for the works in energy sciences or respective engineering sciences "RD Electronics," Ltd. 1 annual prize to the students of physics and respective engineering applications for research work and (till 2005 S/c "RD original results Alfa") S/c "Latvija Gāze" and 2 fellowships to the Doctoral students of gas and thermo-technical technologies and coronal surthe Latvian Education Foundation gery — cardiology S/c "Latvijas Gaisa Kārlis Irbītis annual fellowship to the student of satiksme" and Doctoral, Master's, Bachelor's degree or the student the Latvian Education of cosmic information technology engineering applications in aeronavigation communications and Foundation radiolocation technique S/c "Latvijas Dzelzceļš" annual prize to the student of Master's, Doctoral degree, scientist for research work in the field of railand the Latvian

way transport

Education Foundation

WINNERS OF THE GRAND MEDAL, PRIZES, AND AWARDS OF THE LATVIAN ACADEMY OF SCIENCES

WINNERS OF THE GRAND MEDAL.

- **Vitauts Tamužs**, full member of the LAS (Institute of Polymer Mechanics, University of Latvia), for establishment of the school of mechanics of materials in Latvia (2008).
- **Ēriks Kupče**, corresponding member of the LAS (Latvian Institute of Organic Synthesis, Varian LTD, NMR Instruments, England), for development of principially new methodologies of nuclear magnetic resonance spectroscopy (2008).
- **Ivars Kalviņš**, full member of the LAS (Latvian Institute of Organic Synthesis), for creation of new competitive medicinal preparations and strenghtening of innovative orientation in the Latvian Institute of Organic Synthesis (2009).
- **Kristaps Zariņš**, foreign member of the LAS (USA), for outstanding achievements in the surgery of blood-vessels and for strenghtening unity of Latvian and foreign physicians (2009).

WINNERS OF THE LAS PRIZES 2008-2009

- **Jānis Streičs**, honorary member of the LAS *The Rainis Prize* for remarkable contribution to the development of Latvian culture.
- **Juris Purāns**, *Dr.habil.phys*. (Institute of Solid State Physics, University of Latvia) *The Edgars Siliņš Prize* for achievements in precise investigation of the structures of solids with synchrotron radiation.
- Andrejs Alksnis, *Dr.phys.*, member of the editorial board of the journal *Zvaigžņotā Debess* [The Starry Sky], and
- **Irēna Pundure**, executive secretary of the journal *Zvaigžņotā Debess The Arturs Balklavs* for successful and devoted popularization of science in Latvia, and due to the 50th anniversary of the journal *Zvaigžņotā Debess*.
- **Andris Caune,** full member of the LAS (Institute of History of Latvia, University of Latvia) *The Kārlis Ulmanis Prize* for outstanding contribution to the research of the problems of Latvian national history.

- **Tālavs Jundzis**, full member of the LAS (Latvian Academy of Sciences) *The Dītrihs Lēbers Prize* for research of the restoration of the Republic of Latvia and of processes of development of a law-governed state.
- Oļģerts Krastiņš, full member of the LAS (Institute of Statistics of Latvia) *The Marģers Skujenieks Prize* for a lifelong contribution to statistics.
- **Ausma Cimdiņa**, corresponding member of the LAS (Faculty of Philology, University of Latvia) *The Vilis Plūdonis Prize* for research of topical issues of the history and theory of literature.
- **Nikolajs Vederņikovs**, full member of the LAS (Latvian State Institute of Wood Chemistry) *The Arvīds Kalniņš Prize* for development of a tehnology for simultaneous obtaining of furfurol and methanol.
- **Bertrams Zariņš**, foreign member of the LAS (Harvard University) *The Pauls Stradiņš Prize* for significant contribution to the introduction of advanced little-invasive orthopaedic technologies in Latvian medical institutions.
- **Alberts Varslavāns**, corresponding member of the LAS (University of Latvia) *The Arveds Švābe Prize* for a monograph *Latvijas republika starpvalstu attiecību sistēmā*. *Pirmā desmitgade*. *1919–1929* [Republic of Latvia Within the System of International Relations. First Decade (1919–1929)].
- **Grigorijs Veinbergs**, corresponding member of the LAS (Latvian Institute of Organic Synthesis) *The Gustavs Vanags Prize* for a series of works "Synthesis of Biologically Active Compounds on the Basis of Beta- and Gamma-Amino Acids".
- **Aldonis Vēriņš**, *Doctor honoris causa* of the LAS *The Arturs Balklavs Prize* for outstanding contribution to the popularization of achievements of floriculture and landscape gardening in Latvia and abroad.
- **Aivars Lagzdiņš**, *Doctor honoris causa* of the LAS (Institute of Polymer Mechanics, University of Latvia) *The Frīdrihs Canders Prize* for a series of works in theory of plasticity.
- **Andrejs Reinfelds**, corresponding member of the LAS (Faculty of Physics and Mathematics, University of Latvia) *The Pīrss Bols Prize* for a series of works "The Reduction Principle in Dynamical Systems".
- **Arvīds Barševskis**, corresponding member of the LAS (Daugavpils University) *The Heinrichs Skuja Prize* for the set of publications on the Latvian and world fauna, taxonomy and spreading of the order of Adephaga beetles (2001–2007).
- **Ella Buceniece**, *Dr.phil*. (Institute of Philosophy and Sociology, University of Latvia) *The Teodors Celms Prize* for investigations in the history of ideas and phenomenology in Latvia.

- **Kalvis Torgāns**, full member of the LAS (University of Latvia) *The Dītrihs Lēbers Prize* for significant contribution to the establishment of Latvian legislation and further development of laws in the European Union.
- Antons Ruža, *Dr.agr*. (Latvia University of Agriculture) *The Paulis Lejiņš Prize* for the set of works "Investigation of Regularities in the Development of Crop Harvest and Quality".
- **Ojārs Bušs**, *Dr.habil.philol*. (Latvian Language Institute, University of Latvia) *The Kārlis Mīlenbahs Prize* for contribution to research and standartization of Latvian toponyms, and refinement of language.
- **Vija Kluša**, full member of the LAS (Faculty of Medicine, University of Latvia) *The Solomons Hillers Prize* for the set of works "Pharmacological Investigations: Dioxonium, Peptides, Dihydropyridines, Mildronate".

WINNER OF THE THE WALTER ZAPP PRIZE OF THE LAS AND THE PATENT BOARD OF THE REPUBLIC OF LATVIA

Juris Upatnieks (USA), foreign member of the LAS — for outstanding inventions in holography.

WINNERS OF THE LAS AND PUBLIC JOINT STOCK COMPANY "GRINDEX" PRIZES

- **Valerjans Kauss,** *Dr.chem.* (Latvian Institute of Organic Synthesis) for significant contribution to the development of methodology of medicinal chemistry in Latvia and for development of new medicinal substances (2007).
- Valentīna Skujiņa, full member of the LAS (Latvian Language Institute, University of Latvia) for a monograph Salikteņi G. Manceļa vārdnīcā "Lettus" un krājumā "Phraseologia Lettica" [Compound Words in Georg Mancelius's Dictionary "Lettus" and in the Work "Phraseologia Lettica"] (2007).
- **Jānis Spīgulis**, *Dr.habil.phys*. (Institute of Atomic Physics and Spectroscopy, University of Latvia) for research in biomedical optics (2007).
- **Gunārs Duburs**, full member of the LAS (Latvian Institute of Organic Synthesis) for significant contribution to the chemistry of heterocompounds and for development of new medicinal substances (2008).

Jānis Stradiņš, full member of the LAS (Latvian Academy of Sciences) — for lasting and successful contribution to research and popularization of the history of Latvian, Baltic, and European science, especially, chemistry and pharmacy, for perpetuation of the memory of outstanding researchers (2008).

Ivars Lācis, full member of the LAS (University of Latvia) — for significant contribution to the vision science (2008).

WINNERS OF PRIZES JOINTLY AWARDED BY THE LAS, JOINT STOCK COMPANY "DATI EXIGEN GROUP", AND THE LATVIAN FOUNDATION OF EDUCATION

Ilze Irēna Ilziņa, *Dr.sc.ing*. (Rīga Information Technology Institute) — for development of terminology of information technology, telecommunication and electronics (2007).

Ļevs Kacnelsons (ASV) — *Eižens Āriņš Prize* for lifelong contribution to computer science and IT (2008).

WINNER OF THE LAS AND JOINT STOCK COMPANY "RD ELECTRONICS" PRIZES IN PHYSICS AND ITS APPLICATIONS

Jānis Lielpēters, full member of the LAS — for outstanding contribution to the development of applied magnetic hydrodynamics (2008).

WINNERS OF PRIZES JOINTLY AWARDED BY THE LAS, JOINT STOCK COMPANY "ITERA-LATVIJA" AND THE RĪGA TECHNICAL UNIVERSITY DEVELOPMENT FUND

Ojārs Āboltiņš, *Dr.habil.geol.* (University of Latvia) — for lifelong contribution to environmental, Earth and geographical sciences (2007).

Dagnija Blumberga, *Dr.habil.sc.ing*. (Rīga Technical University) — for series of scientific works "Investigations on the Utilization of Energy Resources. Environmental and Climatic Aspects" (2007).

- Olgerts Nikodemus, corresponding member of the LAS (University of Latvia) for the set of works "Changes and Development of Landscape in Latvia" (2008).
- **Ivars Veidenbergs**, *Dr.habil.sc.ing*. (Rīga Technical University) for lifelong contribution to the development of environmental science in Latvia.

WINNERS OF "THE RĪGA PRIZE" AWARDED BY THE LATVIAN ACADEMY OF SCIENCES AND OF THE FUND OF "THE RĪGA PRIZE"

- **Vilhelms Mihailovskis,** photo artist for portrayal of the creative personalities of Rīga in photographs (2007).
- **Jānis Stabulnieks**, *Dr.sc.ing*. (Latvian Technological Centre) for advancement of innovative activity in Rīga (2007).
- **Ieva Ose**, full member of the LAS, Institute of History of Latvia, University of Latvia for contribution to investigation of the archaeology of Rīga and the Daugavpils fortress (2007).
- **Andris Vārpa,** honorary member of the LAS for contribution to the development of the visual image of Rīga (2007).
- **Zaiga Gaile**, architect for a creative, innovative contribution to restoration of the cultural environment of Rīga and renovation of the architecture of Rīga (2007).
- Elmārs Grēns, full member of the LAS (Latvian Biomedical Research and Study Centre) for establishment of the Rīga school of molecular biology and genetic engineering (2008).
- **Juris Indāns**, for preservation and popularization of Latvian ethnographic image (2008).
- **Jevgenijs Gombergs**, entrepreneur for renovation of several historical sculptural works in Riga (2008).
- **Joint stock company "Sidrabe"** for development of original, innovative vacuum technologies (2008).
- **Institute of History of Latvia (University of Latvia)** and **Latvian Academic Library** *Honorary Diploma of the 'Rīga Prize' 2008* for preparation and publishing of the volume of Johann Christoph Brotze's drawings and descriptions "Monumente".

WINNERS OF PRIZES JOINTLY AWARDED BY THE LAS, JOINT STOCK COMPANY "LATVIJAS GĀZE", AND THE LATVIAN FOUNDATION OF EDUCATION

- Andrejs Kalvelis, Dr.med. (Rīga Stradiņš University) for lifelong contribution to cardiology (2007).
- **Ivars Platais,** *Dr.sc.ing.* (training centre of the joint stock company "Latvijas Gāze") for lifelong contribution to the science of methane economy and training of specialists (2007).
- **Pēteris Šipkovs,** corresponding member of the LAS (Institute of Physical Energetics) for the set of works "Investigations of Rational Utilization of Energy Resources in Latvia" (2008).
- **Aris Lācis,** *Dr.habil.med.* (Children's Clinical University Hospital) for development of surgical corrections and diagnostic methods of complex hereditary heart diseases (2008).

WINNERS OF THE LAS AND PUBLIC JOINT STOCK COMPANY "LATVENERGO" PRIZES

- **Jānis Gerhards**, *Dr.sc.ing*. (Rīga Technical University) *The Alfrēds Vītols Prize* for works and investigations advancing the development of energetics and for development of innovation environment in Latvia (2007).
- **Gunta Šlihta**, *Dr.phys*. (Institute of Physical Energetics) for a series of works "Scientific Analysis of the Development of Energy Sector of the Baltic States for the Time Period 1990–2007" (2007).
- **Jānis Dirba**, *Dr.habil.sc.ing*. (Rīga Technical University) *The Alfrēds Vītols Prize* for a series of works "Electrodynamic Processes in Electrotechnical Devices and Diagnostics of Electrical Machines".

WINNERS OF PRIZES JOINTLY AWARDED BY THE LAS, JOINT STOCK COMPANY "LATVIJAS GAISA SATIKSME", AND THE LATVIAN FOUNDATION OF EDUCATION

Alfrēds Miķelsons, state joint stock company "Latvijas Gaisa Satiksme", Head of the Air Traffic Department — for a lifelong contribution to development of technique and technologies of aeronavigation in Latvia (2007).

Jurijs Abuzjarovs, state joint-stock company "Latvijas Gaisa Satiksme", Head of the Department of Radiolocation — for a lifelong contribution to development of technique and technologies of aeronavigation in Latvia (2007).

WINNERS OF PRIZES JOINTLY AWARDED BY THE LAS, JOINT STOCK COMPANY "LATVIJAS DZELZCEĻŠ", AND THE LATVIAN FOUNDATION OF EDUCATION

Vladimirs Junovičs, joint stock company "Latvijas dzelzceļš", Head of the Department of Exploitation of Roads and Buildings — for a lifelong contribution to the Latvian railway transport (2007).

Mareks Mezītis, *Dr.sc.ing*. (Rīga Technical University) — for investigations in the field of railway transport (2008).

Boriss Pernikis, *Dr.sc.ing*. (Rīga Technical University, joint stock company "Latvijas dzelzceļš") — for a lifelong contribution to the Latvian railway transport (2008).

LAUREATES OF THE L'ORÉAL FELLOWSHIPS "FOR WOMEN IN SCIENCE"

(with the support of the UNESCO Latvian Commission and the Latvian Academy of Sciences)

Baiba Jansone, *Dr.med*. (Faculty of Medicine, University of Latvia) — for elaboration of the project "The Role of the Peptidergic and Nonpeptidergic Regulation in the Manifestations of Stress and Depression" (2007).

Līga Grīnberga, MS (doctoral student, Institute of Solid State Physics, University of Latvia) — for elaboration of the project "Preservation of Hydrogen in Lanthanum Nickel Alloys and Creation of Composite Materials, Improvement of Their Physical and Chemical Properties for the Increase of the Amount of Absorbed/Desorbed Hydrogen in Metalhydrid" (2007).

- **Aiva Plotniece**, *Dr.chem*. (Latvian Institute of Organic Synthesis) for elaboration of the project "Synthesis and Properties of the Potential Genetic Transfection Agents Self-Organizing Polifunctional Pyridinium Compounds" (2007).
- **Ilze Aulika**, *MS* (doctoral student, Institute of Solid State Physics, University of Latvia) for elaboration of the project "Fabrication and Characterization of Functional Nano-structured Polar Thin Films" (2008).
- **Jolanta Pupure**, *MS* (doctoral student, University of Latvia) for project "Studies of Mitochondria-targeted Substances in Parkinson's Disease Model" (2008).
- **Tatjana Voronkova,** *Dr.biol.* (Latvian Biomedical Research and Study Centre) for elaboration of the project "Designing of a Therapeutic Papillomavirus Vaccine on the Basis of the Hamster Polyomavirus-derived Virus-like Particles" (2008).
- **Tatjana Glaskova**, *MS* (Institute of Polymer Mechanics, University of Latvia) for the project "Experimental and Theoretical Investigation of Mechanical and Thermophysical Properties of Polymer Nanocomposites" (2009).
- **Karīna Siliņa**, *MS* (Latvian Biomedical Research and Study Centre) for the project "The Application of Autoantibodies in the Development of Cancer Serodiagnostic, Prognostic and Novel Therapeutic Approaches" (2009).
- **Līga Zvejniece**, *Dr.med*. (Latvian Institute of Organic Synthesis) for the project "Investigation of New Analgesic Drugs" (2009).

WINNERS OF THE AWARDS OF THE LATVIAN ACADEMY OF SCIENCES FOR YOUNG SCIENTISTS

- **Aivars Vembris,** *Bc.* (University of Latvia) 2008 Ludvigs and Māris Jansons Prize for work "Investigation of Optical Orientation and Disorientation of Chromofore Molecules in Guest-Host System-DMABI-PMMA" (supervisor *Dr.phys.* M. Rutkis).
- Elīna Kolodinska, MS (University of Latvia) 2008 Mārtiņš Straumanis Alfrēds Ieviņš Prize for work "Tritium Release from Fusion Reactor Beryllium Materials" (supervisors J. Tīliks, full member of the LAS, Dr.chem. G. Ķizāne).
- **Diāna Ratinīka**, MS (University of Latvia) 2008 Zenta Mauriņa Prize for work "G. Repšes un N. Ikstenas jaunāko romānu Sarkans, Īkstīte, Dzīves svinēšana, Jaunavas mācība prozas poētika" [The Poetics of Prose in the Latest Novels of G. Repše and N. Ikstena, Red, Thumbelina, Celebrating Life, The Virgin's Lesson] (supervisor A. Cimdiņa, corresponding member of the LAS).

Dmitrijs Lubriks, *Bc*. (Rīga Technical University) — *2008 Emīlija Gudriniece Prize* for work "Preparation of Functionalized Indolylmagnesium Reagents" (supervisor *Dr.chem.* E. Sūna).

Elīna Laizāne, MS (Institute of Solid State Physics, University of Latvia) — 2009 Ludvigs and Māris Jansons Prize for work "Optical Patterning of Azobenzene Containing Polimer Films" (supervisor I. Muzikante, full member of the LAS).

Jekaterina Petuškova, *MS* (Latvian Institute of Organic Synthesis) — 2009 Mārtiņš Straumanis — Alfrēds Ieviņš Prize for work "Synthesis and Reactions of Polycyclic 1,2,3,4-Tetrahydropyridines" (supervisor *Dr.chem.* V. Lūsis).

Kaspars Šlihta, *MS* (Faculty of Theology, University of Latvia) — 2009 Zenta Mauriņa Prize for work "Healing and its Meaning according to the Gospel of Mark" (supervisor PhD. D. Balode).

Kristaps Jaundzems, *MS* (Rīga Technical University) — 2009 *Emīlija Gudriniece Prize* for work "Protein NMR Spectroscopy and Spatial Structure: Examples on DNAI and Cyclic Sortase A" (supervisor E. Liepiņš, full member of the LAS).

WINNERS OF THE LAS PRIZES FOR YOUNG SCIENTISTS

Inese Indričane, MS, Latvian Language Institute, University of Latvia (2008)

Laura Mančinska, Bc., University of Latvia (2008)

Marija Mihailova, MS, Latvian Biomedical Research and Study Centre (2008)

Irina Potoročina, MS, Rīga Technical University (2008)

Aleksandrs Vališevskis, *Dr.sc.ing.*, Rīga Technical University (2008)

Agate Zaķe, MS, University of Latvia (2008)

Ilona Dzene, Bc., Latvian Language Institute, University of Latvia (2009)

Sergejs Gaidukovs, MS, Rīga Technical University (2009)

Inguna Goba, MS, University of Latvia, Latvian Institute of Organic Synthesis (2009)

Zilgma Irbe, MS, Rīga Technical University (2009)

Linda Piete, MS, University of Latvia (2009)

Natālija Sergejeva, MS, Daugavpils University (2009)

WINNERS OF THE LAS PRIZES FOR YOUNG SCIENTISTS AWARDED IN SPONSORSHIP

In sponsorship with the public joint stock company "Grindex":

Imanta Brūvere, MS, Rīga Technical University (2007)

Andrejs Krasikovs, MS, University of Latvia (2007)

Agnese Kukāre, *MS*, University of Latvia (2007)

Jolanta Pupure, MS, University of Latvia (2007)

Zanda Bluķe, *MS*, Rīga Technical University, Latvian Institute of Organic Synthesis (2008)

Andrejs Petuškovs, *MS*, Latvian Institute of Organic Synthesis (2008)

Kaspars Veldre, *MS*, University of Latvia (2008)

Reinis Vilšķērsts, MS, University of Latvia (2008)

In sponsorship with the public joint stock company "Latvijas Gāze" and the Latvian Foundation of Education:

Inga Narbute, doctoral student, University of Latvia (2007)

Andris Krūmiņš, MS, Rīga Technical University (2007)

Sanda Jēgere, internist and cardiologist, Institute of Cardiology, University of Latvia (2008)

Tatjana Odiņeca, MS, Rīga Technical University (2008)

In sponsorship with the public joint stock company "Latvijas Gāze" and the Rīga Technical University Development Fund

Aldis Greķis, Dr.sc.ing., public joint stock company "Latvijas Gāze" (2009)

Inese Folkmane, Dr.med., Pauls Stradiņš Clinical University Hospital (2009)

In sponsorship with the public joint stock company "Latvenergo"

Jānis Runčs, *Dr.sc.ing.*, Rīga Technical University (2007)

Inese Svalova, Dr.sc.ing., Rīga Technical University (2007)

Sandra Vītoliņa, Dr.sc.ing., Rīga Technical University (2007)

Gatis Junghāns, Dr.sc.ing., public joint stock company "Latvenergo" (2008)

Mārtiņš Kalniņš, Dr.sc.ing., joint stock company "Augstsprieguma tīkls" (2008)

Olegs Linkevičs, Dr.sc.ing., public joint stock company "Latvenergo" (2008)

Vadims Strelkovs, Dr.sc.ing., Rīga Technical University (2008)

Svetlana Orlova, *MS*, Rīga Technical University, Institute of Physical Energetics (2008)

In sponsorship with Ltd. "RD Electronics"

Juris Zavickis, MS, Rīga Technical University (2008)

In sponsorship with joint stock company "Latvijas Dzelzceļš" and the Latvian Foundation of Education

Fjodors Mihailovs, MS, Rīga Technical University (2007)

HOLDERS OF THE GRANTS AWARDED BY THE LATVIAN ACADEMY OF SCIENCES

(1.11.2007 - 31.08.2008)

Vadims Kolbjonoks (Daugavpils University) — Konstantīns Počs Grant in physics.

Ieva Bīdermane (University of Latvia) — Konstantīns Počs Grant in physics.

Ilona Vanaga (Rīga Technical University) — Emīlija Gudriniece - Alfrēds Ieviņš Grant in chemistry.

(1.11.2008 - 31.08.2009)

Inese Mieriņa (Rīga Technical University) — Emīlija Gudriniece – Alfrēds Ieviņš Grant in chemistry.

Aleksejs Smirnovs (Rīga Technical University) — Emīlija Gudriniece – Alfrēds Ieviņš Grant in chemistry.

OTHER SIGNIFICANT PRIZES IN SCIENCE TO MEMBERS OF THE ACADEMY

- **Ilze Loze,** corresponding member of the LAS the 2007 Prize of the Cabinet of Ministers of the Republic of Latvia for a lifelong contribution to Latvian archaeology research of the Stone Age in European context "Neolithic in the Territory of Latvia".
- **Zigmunds Skujiņš**, honorary member of the LAS the 2007 Prize of the Cabinet of Ministers of the Republic of Latvia for a lifelong contribution to Latvian literature.
- **Zenonas Rokus Rudzikas**, foreign member of the LAS *Medal of the Baltic Academies of Sciences* for advancing cooperation among the Baltic academies of sciences and joint activities in building the European Research Area (2007).
- **Andrejs Siliņš,** full member of the LAS *Medal of the Baltic Academies of Sciences* for upholding positions of the Baltic academies of sciences internationally and facilitating Baltic research collaboration (2007).
- **Raimo Pullat**, *Doctor honoris causa* of the LAS *Medal of the Baltic Academies of Sciences* for significant contribution to the studies of history and international relations in the Baltic area (2007).
- Vaira Vīķe-Freiberga, full member of the LAS *Spīdola Prize of the Latvian Culture Foundation* for persistent work promoting the identification of Latvia in the medium of potential investors, for facilitation of export capacity (2007).
- **Silvija Radzobe**, corresponding member of the LAS award of the Baltic Assembly for the monograph 20. gadsimta teātra režija pasaulē un Latvijā [Stage Direction of the 20th century in the world and in Latvia] (2007).
- **Mārtiņš Beķers**, full member of the LAS *Annual Prize in Science of the University of Latvia* for establishment of a scientific school (2007).
- **Alberts Varslavāns**, corresponding member of the LAS *Annual Prize in Science of the University of Latvia* for establishment of a scientific school (2007).
- **Andrejs Cēbers**, full member of the LAS *Annual Prize in Science of the University of Latvia* for the results of an original investigation (2007).
- **Janīna Kursīte-Pakule**, full member of the LAS *Annual Prize in Science of the University of Latvia* for results of an original investigation (2007).
- **Aleksandrs Jemeljanovs,** full member of the LAS award of the competition "Sējējs", organized by the Ministry of Agriculture, the Ministry of Environment and

- Regional Development for the work "Farm Animals and Their Products in Biological Farming" (2007).
- **Knuts Skujenieks**, honorary member of the LAS *Eduards Veidenbaums Prize* for the book *Mūsu dzīve nokalpotā* [Our Life Served] (2007).
- **Ivars Lācis**, full member of the LAS *Annual Prize of the Ministry of Education and Science of the Republic of Latvia* for successful and creative work on the reorganization of the educational system (2007).
- **Inta Muzikante**, corresponding member of the LAS Honorary Diploma of the *Ministry of Education and Science of the Republic of Latvia* for contribution to the education of young scientists (2007).
- Aldonis Vēriņš, Doctor honoris causa of the LAS chief editor of the magazine Dārzs un Drava [Garden and Apiary] the 2008 Prize of the Cabinet of Ministers of the Republic of Latvia for significant contribution to the development of floriculture in Latvia.
- **Edite Kaufmane,** corresponding member of the LAS the 2008 Prize of the Cabinet of Ministers of the Republic of Latvia for significant contribution to the development, introduction and popularization of gardening knowledge and innovative technologies in Latvia and abroad.
- **Jānis Polis**, *Doctor honoris causa* of the LAS Certificate and Golden Medal of World Intellectual Property Organisation (WIPO) "Outstanding inventor of 2008".
- **Nikolajs Vederņikovs**, full member of the LAS Certificate and Golden Medal of World Intellectual Property Organisation (WIPO) "Outstanding inventor of 2008".
- **Knuts Skujenieks**, honorary member of the LAS *award of the Baltic Assembly* in literature for articles published in 8 volumes (2008).
- **Jānis Bārzdiņš**, full member of the LAS *Annual Prize in Science of the University of Latvia* for establishment of a scientific school (2009).
- **Aina Blinkena**, full member of the LAS *Annual Prize in Science of the University of Latvia* for establishment of a scientific school (2009).
- **Ausma Cimdiņa,** corresponding member of the LAS *Annual Prize in Science of the University of Latvia* for the best original research (2009).
- **Ruta Muceniece**, full member of the LAS *Annual Prize in Science of the University of Latvia* for the best original research (2009).
- **Bruno Andersons**, full member of the LAS *Annual Prize in Forestry "Zelta čiekurs"* [Golden Cone] for contribution to science.

STRUCTURE AND GOVERNANCE OF THE LATVIAN ACADEMY OF SCIENCES

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Andrejs SILINŠ, Vice President of the Academy, Foreign Secretary

Valdis KAMPARS, Secretary General of the Academy

Juris JANSONS, Chair of the Division of Physical and Technical Sciences, Vice President of the Academy

Raimonds VALTERS, Chair of the Division of Chemical, Biological, and Medical Sciences, Deputy Secretary General, Vice President of the Academy

Ilga JANSONE, Chair of the Division of Social Sciences and Humanities, Vice President of the Academy

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SCIENTIFIC DIVISIONS

DIVISION OF PHYSICAL AND TECHNICAL SCIENCES

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Pēteris ŠIPKOVS

The Division unites 89 LAS members, among them 33 full, 3 honorary, 19 foreign, and 34 corresponding members.

The Division has awarded 15 scientists a degree of Dr. honoris causa.

Speciality	Number of members				
	full	corresponding	foreign	honorary	
Physics	18	6	11	_	
Mechanics	8	7	3	_	
Computer science	4	9	3	2	
Mathematics	2	6	1	_	
Astronomy	_	3	1	_	
Power engineering	1	3	_	1	

MEMBERS OF THE DIVISION AND THEIR FIELD OF SPECIALISATION

Astronomy

Māris Ābele, cor.mem Edgars Bervalds, cor.mem. Juris Žagars, cor.mem. Dainis Dravinš, for.mem.

Computer Science

Andris Ambainis, full mem. Jānis Bārzdiņš, full mem. Ivars Bilinskis, full mem. Jānis Grundspenkis, full mem. Juris Borzovs, cor.mem. Igors Kabaškins, cor.mem. Audris Kalniņš, cor.mem. Juriis Merkurievs, cor.mem. Leonīds Novickis, cor.mem. Vladimirs Pirogovs, cor.mem. Uldis Sukovskis, cor.mem. Pēteris Videnieks, cor.mem. Jāzeps Ločmelis, hon.mem. Jānis Osis, hon.mem. Gilles Brassard, for mem. Juris Hartmanis, for.mem. Andris Padegs, for.mem.

Informatics (Science of Science)

Jānis Kristapsons, cor.mem.

Mathematics

Andris Buiķis, full mem.
Rūsiņš Mārtiņš Freivalds, full mem.
Agnis Andžāns, cor.mem.
Uldis Raitums, cor.mem.
Andrejs Reinfelds, cor.mem.
Felikss Sadirbajevs, cor.mem.
Aleksandrs Šostaks, cor.mem.
Aivars Zemītis, cor.mem.
Raimondas Čiegis, for.mem.

Mechanics

Juris Jansons, full mem. Ivars Knēts, full mem. Egons Lavendelis, full mem. Imants Matīss, full mem.
Rolands Rikards, full mem.
Kārlis Rocēns, full mem.
Vitauts Tamužs, full mem.
Gundaris Teters, full mem.
Jānis Auziņš, cor.mem.
Andris Čate, cor.mem.
Vladimirs Kasjanovs, cor.mem.
Roberts Maksimovs, cor.mem.
Jānis Rudzītis, cor.mem.
Jānis Rudzītis, cor.mem.
Jānis Vība, cor.mem.
Jānis Dundurs, for.mem.
Jüri Engelbrecht, for.mem.
René Moreau, for.mem.

Physics

Mārcis Auziņš, full mem. Jānis Guntis Bērzinš, full mem. Elmārs Blūms, full mem. Andreis Cēbers, full mem. Jurijs Dehtjars, full mem. Juris Ekmanis, full mem. Ruvins Ferbers, full mem. Agris Gailītis, full mem. Andris Krūminš, full mem. Ivars Lācis, full mem. Olgerts Lielausis, full mem. Inta Muzikante, full mem. Andreis Silinš, full mem. Linards Skuja, full mem. Andris Šternbergs, full mem. Kurts Švarcs, full mem. Ivars Tāle, full mem. Juris Zakis, full mem. Imants Bērsons, cor.mem. Jevgeņijs Jolins, cor.mem. Māris Knite, cor.mem. Alekseis Kuzmins, cor.mem. Andris Ozols, cor.mem. Jānis Spīgulis, cor.mem.

SCIENTIFIC DIVISIONS

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Oļģerts Dumbrājs, for.mem.

Till von Egidy, for.mem.

Roberts Evarestovs, for.mem.

Paul Albert Janmey, for.mem.

Ivars Melngailis, for.mem.

Jānis Melngailis, for.mem.

Zenonas Rokus Rudzikas, for.mem.

Jacque Simon, for.mem.

Juris Pēteris Svenne, for.mem Juris Upatnieks, for.mem.

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DIVISION OF CHEMICAL, BIOLOGICAL, AND MEDICAL SCIENCES

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Uldis KALNENIEKS Jānis VOLKOLĀKOVS
Mārtinš KALNINŠ Henriks ZENKEVIČS

The Division unites 116 LAS members, among them 39 full, 6 honorary, 30 foreign, and 41 corresponding members.

The Division has awarded 32 scientists a degree of Dr. honoris causa.

	Number of members				
Speciality	full	correspond- ing	foreign	honorary	
Chemistry	15	7	9	_	
Medicine	9	11	9	4	
Biology	8	12	6	1	
Biotechnology	2	_	1	_	
Ecology, environmental science, and geography	2	3	1	_	
Geology and water management	_	2	2	_	
Agricultural sciences	1	3	_	1	
Forestry	_	1	_	_	
History of science	_	_	1	_	
Materials science	2	1	1	_	
Pharmacology	_	1	_	_	

MEMBERS OF THE DIVISION AND THEIR FIELD OF SPECIALISATION

Agricultural Sciences

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Biology

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Uldis Streips, for.mem. Richard Villems, for.mem. Kurt Wiithrich, for mem.

Biotechnology

Mārtiņš Beķers, full mem. Uldis Viesturs, full mem. Andreis Daugulis, for.mem.

Chemistry

Gunārs Čipēns, full mem. Gunārs Duburs, full mem. Mārtinš Kalninš, full mem. Ivars Kalviņš, full mem. Valdis Kampars, full mem. Edvards Liepinš, full mem. Edmunds Lukevics, full mem. Tālis Millers, full mem. Uldis Sedmalis, full mem. Jānis Stradinš, full mem. Andris Strakovs, full mem. Arnis Treimanis, full mem. Raimonds Valters, full mem. Nikolajs Vederņikovs, full mem. Andris Zicmanis, full mem. Māra Jure, cor.mem. Valerjans Kauss, cor.mem. Aivars Krauze, cor.mem. Ēriks Kupče, cor.mem. Edgars Sūna, cor.mem. Pēteris Trapencieris, cor.mem. Grigorijs Veinbergs, cor.mem. Pēteris Bolšaitis, for mem.

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Mikhail Voronkov, for.mem.

Regina Žuka, for.mem.

Ecology, Environmental Science

Pēteris Cimdiņš, full mem.

Māris Kļaviņš, full mem.

Aija Melluma, cor.mem.

Forestry

Pēteris Zālītis, cor.mem.

Geography

Guntis Eberhards, cor.mem.

Oļģerts Nikodemus, cor.mem.

Edmunds Bunkše, for.mem.

Geology and Water Management

Ervīns Lukševičs, cor.mem.

Vitāliis Zelčs, cor.mem.

Aleksis Dreimanis, for mem.

Henning Sørensen, for.mem.

History of Science

Yuri Solovyov, for.mem.

Materials Science

Bruno Andersons, full mem.

Jānis Grabis, full mem.

Jānis Grāvītis, cor.mem.

Elsa Reichmanis, for.mem.

Medicine

Georgs Andrejevs, full mem.

Jānis Gardovskis, full mem.

Viktors Kalnbērzs, full mem.

Vija Kluša, full mem.

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Jānis Priedkalns, full mem.

Rafails Rozentāls, full mem.

Arnis Vīksna, full mem.

Jānis Volkolākovs, full mem.

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Andrejs Ērglis, cor.mem.

Andris Ferdats, cor.mem.

Alfrēds Miltinš, cor.mem.

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Ludmila Vīksna, cor.mem.

Aija Žilēviča, cor.mem.

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Kristaps Juris Keggi, hon.mem.

Aina Muceniece, hon.mem.

Nikolajs Skuja, hon.mem.

Meinhard Classen, for.mem.

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Jānis Kļaviņš, for.mem.

Ruta Kundzina, for.mem.

Andreas Oksche, for.mem.

Felix Unger, for.mem.

Jarl Wikberg, for.mem.

Bertrams Zariņš, for.mem.

Kristaps Zariņš, for.mem.

Pharmacology

Maija Dambrova, cor.mem.

DIVISION OF SOCIAL SCIENCES AND HUMANITIES

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Dace MARKUS

Scientific Secretary Ilga TĀLBERGA

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Valentīna SKUJINA, Jānis STRADINŠ, Kalvis TORGĀNS

The Division unites 156 LAS members, among them 33 full, 45 honorary, 43 foreign, and 35 corresponding members.

The Division has awarded 30 scientists a degree of Dr. honoris causa.

	Number of members			
Speciality	full	correspond- ing	foreign	honorary
Literary criticism	5	2	7	_
Literature	_	_	1	13
Economics	6	7	3	2
Philosophy	3	4	1	_
Law	2	2 7	1	_
Linguistics	4		11	1
History	4	3	7	1
Anthropology	_	_	_	1
Archaeology	3	3	_	_
Architecture	1	_	2	2
Bibliography	_	_	1	_
Demography	1	1	_	_
Ethnography	1	_	_	_
Art Studies	1	1	_	1
Art	_	_	1	21
Pedagogics	_	1	_	_
Political Studies	1	1	4	_
Psychology, Folklore Studies	1	_	1	_
Sociology	_	2	1	_
Theology	_	_	_	1
History of culture	_	_	1	_
History of art	_	1	_	1
History of science	_	_	1	_
Journalistics	_	_	_	1

MEMBERS OF THE DIVISION AND THEIR FIELD OF SPECIALISATION

Anthropology

Raisa Denisova, hon.mem.

Archaeology

Andris Caune, full mem. Ēvalds Mugurēvičs, full mem. Ieva Ose, full mem. Ilze Biruta Loze, cor.mem. Andrejs Vasks, cor.mem. Guntis Zemītis, cor.mem.

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History of Culture

Vyacheslav Ivanov, for.mem.

History of Science

Anto Leikola, for.mem.

History, Philosophy

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Journalistics

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Law

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Fjodors Fjodorovs, cor.mem.

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Jana Tesařová, for.mem.

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Uldis Bērziņš, hon.mem.

Leons Briedis, hon.mem.

Roalds Dobrovenskis, hon.mem.

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Knuts Skujenieks, hon.mem.

Zigmunds Skujiņš, hon.mem.

Māra Zālīte, hon, mem.

Imants Ziedonis, hon.mem.

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Maija Kūle, full mem.

Valentīns Šteinbergs, full mem.

Andris Rubenis, cor.mem.

Igors Šuvajevs, cor.mem.

Ivans Vedins, cor.mem.

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Jānis Peniķis, for.mem.

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Psychology

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Psychology, Folklore Studies

Vaira Vīķe-Freiberga, full mem.

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DIVISION OF AGRICULTURE AND FORESTRY SCIENCES

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Acting Scientific Secretary Ieva BRENCE

Members of the Board:

Aleksandrs JEMEĻJANOVS

Uldis VIESTURS

The Division currently unites 21 LAS members, among them 9 full, 1 honorary, and 11 corresponding members. In its activities the Division has involved 3 Doctors *honoris causa*.

	Number of members			
Speciality	full	corre- sponding	foreign	honorary
Biology and Biotechnology	3	_	_	_
Economics	2	1	_	_
Agriculture and Processing Technologies	1	6	-	1
Forestry Science and Wood Technologies	3	4	_	_

MEMBERS OF THE DIVISION AND THEIR FIELD OF SPECIALISATION

Biology and Biotechnology

Mārtiņš Beķers, full mem. Īzaks Rašals, full mem. Uldis Viesturs, full mem.

Economics

Arnis Kalniņš, full mem. Baiba Rivža, full mem. Kazimirs Špoģis, cor.mem.

Agriculture and Processing Technologies

Aleksandrs Jemeljanovs, full mem. Edīte Birģele, cor.mem. Zinta Gaile, cor.mem. Edīte Kaufmane, cor.mem. Daina Kārkliņa, cor.mem. Aldis Kārkliņš, cor.mem. Juris Skujāns, cor.mem. Jānis Latvieties, hon.mem.

Forestry Science and Wood Technologies

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Arnis Treimanis, full mem.
Nikolajs Vederņikovs, full mem.
Tatjana Dižbite, cor.mem.
Imants Liepa, cor.mem.
Pēteris Zālītis, cor.mem.
Aivars Žūrinš, cor.mem.

OVERSEAS DIVISION

University of Latvia, Raiņa bulv. 19–248, Rīga, LV 1586, Latvia Tel.: (371) 26496128. Fax: (371) 67174758 E-mail: jpuika@chariot.net.au

Board of the Division:

Nikolajs BALABKINS, Juris DREIFELDS, Jānis KĻAVIŅŠ, Jānis KRĒSLIŅŠ, Jānis MELNGAILIS, Andris PADEGS, Andrejs PLAKANS, Jānis PRIEDKALNS, Edvīns VEDĒJS, Kristaps ZARIŅŠ

The Board of the Division is conducted by Janis PRIEDKALNS

The Overseas Division of the Latvian Academy of Sciences is formed in accordance with Article 3.5.2 of the LAS Statute and approved at the LAS General Meeting on 26 November 1993.

As provided by the decision of the General Meeting of the Latvian Academy of Sciences, adopted on 13 February 1998, members of the Board, when in Latvia, have full rights in the Senate of the LAS.

UNITS OF THE LATVIAN ACADEMY OF SCIENCES

Centre for Science and Technology Studies, Latvian Academy of Sciences

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Head of the Centre Janis KRISTAPSONS, cor.mem. LAS, Dr.phys.

Terminology Commission, Latvian Academy of Sciences

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Chair Valentīna SKUJIŅA, full mem. LAS, Dr.habil.philol.

Ethics Committee of the LAS and the Latvian Council of Science

Akadēmijas laukums 1, Rīga LV 1050, Latvia E-mail: lza@lza.lv

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Honorary members	40	55	51	52	54
Foreign members	57	88 (45)	92	92	92
Corresponding members	46	84	98 (85)	108 (90)	116 (85)
Total	211	318	339	352	367

The LAS has awarded 80 scientists a degree of Dr. honoris causa.

Note. Under the headings 01.01.2000 to 01.06.2009, the number of those members of the LAS is given in brackets, who are under the age of 70.

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