

## The Top ten scientific developments in Latvia in 2006

- Introduction of a new technology into haematology patient care that will remarkably improve the possibilities of treating the patients with acute and chronic leukaemia. The new technology involves allogeneic peripheral blood stem cell transplantation (Dr. Sandra Lejniece, Dr. Viesturs Boka, Ilze Puga, Riga Stradins University; Riga Austrumu Hospital, clinic "Linezers")
- Development of new optical methods for the diagnosis of skin and blood vessel disorders (Dr. Janis Spigulis, Institute of Atomic Physics and Spectroscopy, University of Latvia, in collaboration with the Faculty of Biology and Institute of Cardiology, University of Latvia)
- Cloning of the genomes of plant viruses and its further applications in biotechnology – in creation of vaccines and diagnostics. (Dr. Andris Zeltins, Latvian Biomedical Research and Study Centre)
- Determination of new spatial structures of large molecular weight proteins, using the method of multi-dimensional nuclear magnetic resonance spectroscopy. It allows to better understand the mechanism of protein biological activity (full member LAS Edvards Liepins, Latvian Institute of Organics Synthesis)
- Creation of effective luminescent detector materials of a new type that are used for the measurement of the oxygen quantity (Dr. Larisa Grigorjeva, Dr. Donats Millers, Mag. Krisjanis Smits, Institute of Solid State Physics, University of Latvia in collaboration with the Institute of High Pressure Physics of the Polish Academy of Sciences)
- Elaboration of a new, more capacious optical storage device, consisting of several layers of thin wolframates (corresponding member of the Latvian Academy of Sciences Aleksejs Kuzmins, Dr. Roberts Kalendarevs, Institute of Solid State Physics of the University of Latvia )
- Elaboration of a new technology for soil agrochemical investigation using the Global Positioning System (GPS). By applying the GPS technology the first digital agrochemical map of soils in Latvia (Bauska district Code parish) was prepared and published (Dr. Regina Timbare, Skaidrite Poriete, Aija Mikelsone, Agrochemical Research Centre)
- Accomplishment and publication of a study in regional economics: a case study of the economics and analysis of increasing economic competitiveness of the Latgale Region (Dr. Viktors Voronovs, Irina Petrova, Edgars Racko, Daugavpils University )
- Summarization and monographic publication of the affluent materials, which characterise the spiritual and material culture of the Livs and have been gathered during archaeological excavations in the populous area and burial grounds of 10-13th centuries in the lower reaches of the river Daugava – Country School of Salaspils (under the leadership of Dr. Anna Zarina, Institute of History of Latvia, University of Latvia)
- Accomplishment of a significant study in cultural history "Anthology of Latvian Choral Music in 12 volumes: unaccompanied music for mixed, male and female choirs *a capella*". For the first time in music history the "golden collection" of Latvian choral songs, starting from the 1st All Latvian Song Festival (1873) up to the works of contemporary artists, has been systematized and complemented with scientific comments (honorary member of the Latvian Academy of Sciences Imants Kokars, Dr. Arnolds Klotins, Arvids Bomiks, Dr. Oļģerts Gravitis, Janis Lindenbergs, Peteris Plakidis). The 12 volumes have been illustrated by performance of the chamber choir *Ave Sol* in 12 CD's (conducted by Uldis Kokars).