

The Top ten scientific developments in Latvia in 2007

Elaboration and introduction of a complex clinical-genetic investigation method to identify the risk factors of chronic diseases in children (corresponding member of the LAS Ingrida Rumba, Dr. Liene Nikitina-Zaķe, Dr. Tatjana Sjakste, Ieva Saulīte, Irēna Rinkuža, Dr. 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 Gaīlezers).

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 analog signals that can be converted and processed in a digital format. (Dr. Ivars Biļinskis, full mem. LAS, 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. Valdis Kokars, corresponding member of the LAS Andris Ozols, MS Dmitrijs Saharovs, full mem. LAS Valdis Kampars, MS Ansis Maļeckis, Dr. Gundars Mežinskis, MS Artūrs Plūdons, Faculty of Material Sciences and Applied Chemistry, Riga Technical University).

Detection of the surface properties of strontium titanate that are potential for remarkable improvement of operation of information processing devices (Dr. Jurijs Kotomins, Dr. Sergejs Piskunovs, Dr. Jurijs Žukovskis, Institute of Solid State Physics, 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 (full mem. LAS Vija Kluša, full mem. LAS Ivars Kalviņš, Faculty of Medicine, University of Latvia, Latvian Institute of Organic Synthesis).

Publishing the monograph Burried 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.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 (corr. mem. LAS Arnis Treimanis, MS Uldis Grīnfelds, Māriete Škute, Latvian State Institute of Wood Chemistry).

Publishing of the last volume "Small towns and country of Latvia" in the four-volume series of drawings and descriptions by J. K. Brotze „Monumente" marks the conclusion of scholarly processing and publishing of a significant source of Latvia's history and ethnology of the 18th century (Institute of History of Latvia of 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 entitled „Selected Works" by the Publishing House of the Latvian Language Institute, University of Latvia (Latvian Language Institute of the University of Latvia, Daugavpils University).

Publishing of a scholarly edition of A. Pumpurs' epos „Lāčplēsis" in English language („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 Kroplis (Australia) and scholarly reviews and commentaries written by corr. mem. LAS Ausma Cimdiņa, full mem. LAS Vaira Vīķe-Freiberga, Dr. Ojārs Lāms, full mem. LAS Janīna Kursīte, Dr. Kaspars Kļaviņš. (Faculty of Philology, University of Latvia).