

Bionics Innovation Center under construction

- **Bionics – Industry of the Future in Hungary, Press conference, March 18, 2014**

The Hungarian Government has decided about the subvention of the Bionics Innovation Center (BIC) established in cooperation by Pázmány Péter Catholic University and Semmelweis University. The subvention of 5 billion Forints is granted by the Research Technology and Innovation Fund. The aim of the subvention is to ensure that the newly developing Bionics Innovation Center creates, directs and catalyzes the development and successful cooperation of the Hungarian bionics innovation network.

The press conference about the institution of the Bionics Innovation Center has been organized at the Faculty of Information Technology and Bionics of Pázmány Péter Catholic University on March 18, 2014 with the participation of Deputy Prime Minister, Dr. Zsolt Semjén and Minister of State for National Economy, dr. Zoltán Cséfalvay.

The initiator of the Bionics Innovation Center (BIC), Professor Dr. Tamás Roska, Member of the Hungarian Academy of Sciences, President of the Scientific Committee of BIC has pointed out in his introductory talk that we are at the beginning of the third state-of-the-art technology revolution of the past 50 years. After the formation of information technology and biotechnologies based on integrated circuit techniques, there is a new science emerging: bionics. Bionics is a specific new engineering science at the level of biomolecules and cells.

- The word itself originates from the interconnection of the basics of biology and electronics. This is the area where molecular biology and neuroscience meets theoretical electricity, quantum electrodynamics and the engineering basics of computer science. As the result new products and services emerge, such as:
 - Biochips: disposable devices, "point-of-care"(POC), etc.
 - sensing, maneuvering, and perceiving prostheses
 - new quantitative imaging techniques
 - permanent symbioses, e.g. neural pacemaker, implanted drug-dosing device
 - radiofrequency diagnostics and therapy
 - diagnosis and therapy based on genetics

These innovations will transform the technologies of medicine, food safety, environmental protection, and security. One of the key items in achieving success is education of bionics, which is already under way in Hungary. The molecular bionics program, developed by Pázmány and Semmelweis Universities, ensures supply of specially trained professionals, uniquely in Europe. Engineers graduating here are capable of inventing tools and devices that have been unimaginable before.

- A country of middle size and of modest GDP and investable capital can succeed in a state-of-the-art technology if
 - research fundamentals and organized educational frameworks are already given at the beginning stage of the development of this technology;
 - both development and production technology are of low demand of investment;
 - everyday operation of the county in question can utilize these products and services;
 - personal and institutional conditions of international cooperation are available;

- Organized strategies are developed for education, research, development, innovation, and marketing.

All but the last link in the chain are given in Hungary at present; it is the aim of the current project to supply this missing link.