



The Croatian Academy of Engineering (HATZ) is a Member of the International Council of Academies of Engineering and Technological Sciences, Inc. (CAETS), Washington DC, USA since 2000., and, starting with 2005, an Associated Member of the European Council for Applied Sciences and Engineering (Euro-CASE), Paris, France, EU

Review of the Colloquium

Development of New Technologies and Products in Croatia

Croatian Academy of Engineering, Zagreb, February 26, 2005

The Croatian economy is coming to a turning point regarding its profiling and survival on the global market. Since there have been no major investments into new technologies and the development of new products over the last 10 to 15 years, it is necessary to consider jointly the Croatian strategically important fields. Defining of the situation in the world as well as in Croatia is the basis for a directed and faster transfer of knowledge, processes and equipment and a more intensive development of Croatian own manufacturing procedures and products.

Within our scientific and university community, researches are being carried out and their results are mainly not applicable enough or not used to the full advantage of the Croatian economy. On the other hand, by the integration into the European research area we are facing the need to focus our own scientific and professional potentials, especially the research objectives, so that in the oncoming period we could make optimal and well-planned use of the EU funds, aimed also at our own economic benefit. Croatia still lacks a well-developed system for monitoring and motivating innovations, which is in all the industrially developed countries the basis for competitive viability on the market. Efficient transfer of results from scientific



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research into the economy is determined, among other things, by the level of organization of the system (infrastructure) for the support and implementation of innovations, as well as for the application of results from the development and applied projects. The introductory lectures at the Conference presented the experiences of the functioning of the innovation systems in Austria, as well as the concepts, organizational structure and results of activities performed by the Croatian innovation system – HITRA. The main objective of this Conference was to show the realized projects related to the development of products and procedures regarding technical and biotechnical areas. A large number of these projects have been financed by the MZOŠ (Ministry of Science, Education and Sports) within the HITRA system – programs TEST and RAZUM started 4 years ago.

Some of the most propulsive areas of research and development in the world are e.g.: genetic engineering and biotechnology, communication technologies and software engineering, new materials and production procedures, biomedical technology, environmental protection technologies, nanotechnologies, production for the usage of alternative energy sources, production of new food, production of new medicines, automation and robotization of manufacture, etc. Almost in every of the mentioned areas several papers were presented by the Croatian experts indicating that at least we are following and trying to adopt the advanced knowledge.

INSIDE

Development of New Technologies and Products in Croatia	1
Report from the 20 th Assembly (Elective) of the Croatian Academy of Engineering.....	3
Programme of Activities of the HATZ in 2005	4
The HATZ Programme for Life-Long Learning	5
Standing Committees of the HATZ	5
Election of the President, Two Vice-Presidents and the Secretary-General of the HATZ (2005-2009)....	6
Presidency of the Croatian Academy of Engineering (2005-2009)	7
The European Information Society Technologies Prize	8
16 th Convocation of the International Council of Academies of Engineering and Technological Sciences (CAETS) and International Symposium "Oceans and the World's Future"	9
Report from the Euro-CASE Board Meeting.....	10
Ethics in Application and Development of the Engineering Sciences.....	12
HATZ provides Auspices upon the Ceremony of Presentation of the "Hrvoje Požar" Annual Awards and Scholarships	18
The Awards of HAZU Granted to HATZ Full Members Prof. Zijad Haznadar, Ph. D. and Prof. Mladen Šćitaroci-Obad, Ph. D. .	18



Branka Magdalenic, Dipl. Oec., Representative of "Vindija", Inc., Varaždin, Croatia, Supporting Member of the HATZ

The information exchange of experts has indicated the possible directions of faster and well-planned development of the Croatian economy based on new knowledge, innovations, new products and procedures. The atmosphere among the participants was very optimistic, which, with the number and quality of contributions shows that critical awareness is being created and that there is an increasing number of scientists and experts who have recognized and who have the willingness and knowledge to strengthen the innovation and entrepreneurial

movement as function of the economic development. Due to the great interest and the topical issues, and on the initiative of the participants, the HATZ Presidency has decided to organize a Conference of similar form every two years.

The majority of authors of the presented papers are members of the Croatian Academy of Engineering (HATZ), which means that HATZ is ready to give incentive and to take very active part in directing the economic activities and that it is capable of assisting the economy in various ways in its high-quality development.

List of presented lectures:

- K. Richter (Austria, EU): Industrial Centres and Networks of Competence in Austria
- J. Božičević: Development of the Croatian innovation system
- H. Zorc: Program HITRA, subprogram TEST
- H. Prpić: Program HITRA, subprogram RAZUM
- M. Andrašec: Institutions of the Croatian innovation system derived from State office for standardization and metrology
- A. Carić: Program HITRA – From Ideas to Commercialization
- S. Pegan: Contemporary forms of spacial organization of the industrial locations
- N. Majdandžić: Centres for developing and applying of new production and information technologies – generator of production enterprises concurrence
- S. Car: Research and development of business activity
- N. Duić: Croatia as a knowledge exporter-drivers and barriers
- S. Risović: Technology project-from the idea to realisation
- J. Sečen: How to maintain production of the oil – domestic and international experiences
- Z. Haznadar: Technological challenges at the beginning of the 3rd Millennium
- Ž. Ilijevski: Eney and ground vehicles in the near and distant future
- V. Čorić: Maritime technique – new challenge for the Croatian oil and shipp-building industry
- K. Žiha, N. Ružinski, D. Bandula: Building of a prototype of a multipurpose vessel of a generic hull form
- V. Ferdelji: Practical experience of development new products and technologies in “Elektrokontakt”
- M. Šerčer: Development of one-fold CD-box
- T. Filetin, G. Marić, I. Kramer: Implementation of technology and application of the metal foams
- K. Čosić, M. Slamić: Applications of dual used technologies
- Z. Terze: Dynamic simulator for numeric analysis of landing of large transport aircraft
- M. Essert, B. Mauser, A. Magdić, I. Nakić: Live internet documents
- B. Salopek, G. Bedeković, I. Sobota: Solid waste comminution
- M. Kljajin: Recycling of waste from electrical and electronic equipment
- D. Katović, S. Bischof-Vukušić, J. Bartolić, S. Hrabar: Microwave device for thermal treatment of cellulose materials
- N. Frančula, M. Lapaine: Cartography and new technologies
- M. Skazlić, D. Bjegović: Perspectives of designing with new concrete types
- Ž. Skazlić, M. S. Kovačević, A. Szavits – Nossan: Soil improvement by beep vibro compaction
- V. Rajčić, I. Plavec: Project and prototype of the modern wooden family house
- J. Božičević, A. Caharija, G. Galinec, D. S. Vedrina: Assortment of the knowledge-based product developed by the researchers of the Department for measure and automatisisation process control of the Faculty of chemical engineering and technology
- V. Žiljak: Portraits on single-layer documents with 3D display
- Z. Kniewald: Genetic engineering in the food production – Croatia – “GMO-free”?
- Đ. Vasić-Rački: The novel technologies for the use of biocatalyst and biotransformations
- I. Grbac, D. Domljan: Furniture development in Croatia
- V. Živković, H. Turkulin: Improvements of surface layer by wood modification
- S. Klak, V. Koroman, B. Milković, S. Krivičić, S. Puljak, S. Sever: Third generation of medium – size forest skidder tibotrac FM 03
- J. Borošić, B. Benko: Research and development of tomato soilless culture in Croatia
- B. Novak: Sweetpotato – New vegetable in Croatia
- Ž. Nožica: A model for attracting foreign investments in system level integration in Croatia
- T. Drk Vojnović, B. Magdalenic: “Vindija” – Way to European Union
- T. Krička, Ž. Jukić, N. Voća, V. Janušić, A. Matin: Biofuels in a system of sustainable agriculture

The summaries of the papers in Croatian and English have been published in the Book of Abstracts and almost all presentations (PowerPoint) can be found on the HATZ web pages. Full papers in English will be published in the HATZ annual (“Annual 2005 of the HATZ”). Authors, but also all those interested in presenting similar topics, are kindly requested to send full papers to the HATZ Secretariat by June 25, 2005.

Prof. Tomislav Filetin, Ph. D.