

## Conclusions

### Natural Sciences

1. To introduce international criteria to evaluate projects and scientists and to introduce prioritised topics within each science field. Evaluation in natural sciences is to be conducted through reviews by foreign critics (Croatian scientists from abroad and foreign scientists) with the use of bibliometric indicators. The co-ordination of evaluation procedures will be conducted by a special commission consisting of renown scientists from Croatia who are beyond any conflict of interest.

2. Suitable criteria need to be set for each science field for evaluation based on the opinion of Croatia's exceptional scientists for each relevant field, keeping in mind evaluation methods practised around the world. In order for evaluation of science projects to have any sense and affect, the number of projects to be approved for financing in a determined interval should be much less than the number of projects proposed. Only in this way can selectivity be achieved and increased financing for those projects considered by exceptional experts as the best.

3. To call on the public media, particularly Croatian Radio Television (HRT) to pay more attention directed towards creating a positive social climate, which is vital for development, based on science, education and culture. Without these, transition would continue much longer and would not succeed.

4. To open possibilities for Croatian scientists from abroad to participate in combined science projects in Croatia, to participate as mentors for doctoral dissertations in Croatia and to participate in commissions to deliberate on doctoral dissertations.

5. To support the initiative for young scientists to be granted appropriate start up funding for science research after post-graduate studies.

6. To advance the participation of Croatian scientists from abroad to include Croatian scientists in international projects and to lobby around the world. This includes systematic lobbying in the homeland so that funding comes closer to EU standards (expressed in percentages of the state budget) and that political support from parties do not remain merely as declarations.

7. In a small country with modest funding like Croatia, strategy defining should be divided into two levels: on the one hand compatibility with research fields that are current focal points to be included into combined projects with the European Union and on the other, a wider spectre of research with a decreased intensity on a world level.

8. We wish to leave available space for continued expansion of these initiatives following additional proposals from Croatian scientists in the country and abroad.

Professor Davor Pavuna, Ph.D.  
Professor Vladimir Paar, Ph.D.

### Technical Sciences

Technical sciences include a large number of science fields and branches that have a diverse tradition, methods and objectives but they have a common direct connection with the economy and largely influence everyday life.

Our fundamental objective is to achieve stimulative results in science and education and to realise the presumptions that will influence economic growth and an improved standard of living in Croatia.

Our efforts will be directed to building a scientific and economic infrastructure and atmosphere that will enable Croatia's equal and active participation in world processes of exchanging knowledge and scientists.

In order to achieve these objectives, common tasks for scientists in Croatia and abroad to co-operate with state and economic structures in the Republic of Croatia are:

- To define strategic priorities, fields of research and technology that are of vital significance for an all round development of the economy and the quality of life in Croatia and a fundamental and balanced development of Croatia's visions.
- To intensify and advance the system of technical education including education throughout life.
- To develop an award system for scientists to motivate research and excellence.
- To systematically support Croatia's integration with world science in the EU, through "sustainable integration", with the achievement of new values and preservation of our specificity and advantages. To form expert negotiating teams consisting of scientists in the country and abroad and to include scientists from abroad as bridges of co-operation on combined projects with the EU.
- To promote applied, multi-disciplinary research and to enable effective commercialisation of scientific results with systematic co-operation with the economy, particularly in promoting technological projects and to set up new companies based on knowledge, innovative solutions and modern technology.

We scientists from Croatia and abroad experienced this Congress as a sign of support to realise these objectives, as the start of intensive and continual work with concrete tasks and focus groups where the first evident results can be presented at the following Congress.

Professor Ivica Crnković, Ph.D.  
Professor Darko Stipančević, Ph.D.

### Bio-technical Sciences

1. Scientists from the Homeland presented their own achievements in agriculture and forestry technology and the

production of medicine while participants from abroad presented their experiences in medical and environmental technology and the development of production in these fields.

2. Participants from the Homeland and abroad support the development of bio-technology as a vital precondition:

- To revitalise agriculture, food production and to render abandoned agricultural land ready for production;
- For the rational management of forests and to preserve natural forests which render; Croatia as a forerunner in excellence compared to other European countries;
- For the production of biological molecules used to produce medicine;
- To advance mariculture and reasonable management of the sea;
- To preserve and revitalise the environment.

3. Croatia possesses good conditions to develop the *production of "healthy" (organic) food* that can be a highly valued product adding a new aspect to Croatia's tourist offer and as a form of export.

4. As a maritime country, Croatia excels with its favourable conditions to produce *seafood*, keeping in mind:

- The development of mariculture while preserving the environment and the biodiversity with the application of exceptional technology and the latest methods of production which is largely based on genetic research;
- The preservation and protection of good quality autochthonous Adriatic breeds using the strictest genetic control measures (selection) of organisms during production, monitoring interactions between natural populations and those produced with supervision of the effects of genetic engineering;
- The development of bio-technical methods to produce food for fish that satisfies the food needs of organisms and is degradable with the least amount of damage to the environment;
- The development of methods to measure the toxic level of shellfish which is one of the most significant problems of contemporary mariculture.

5. It is necessary to promote multi-disciplinary research directed towards the further development of sustainable agricultural productivity in keeping with good agricultural practise (EU CAP & the Agenda 2000). That productivity must be based on:

- The demands of producers and consumers for high quality products;
- Environment protection standards implemented through agro-environmental programmes;
- Increased employment and an improved standard of living, particularly in rural and protected areas.

6. The development of *industrial bio-technology* (recyclable fuel and raw materials) should be given the highest priority.

7. Participants stress the *great potential in forestry* due to the unique large areas of natural forests that are managed

on the principle of achieving sustainable development and biodiversity.

8. Participants support the intention of Croatian forestry scientist to utilise their experiences in *artificially raising forests in natural forest systems* and to offer these to the international community.

9. It is vital that Croatia once again establishes a rational system of managing forests and to *minimise the effects of politics on managing forest land*.

10. Foundations exist in Croatia for *biotechnical production for health* (PLIVA, Institute of Immunology), environment protection (biologically degradable polymers) etc. The development of these activities can support the development of other production branches.

11. It is necessary to develop *contract research organisations* that will secure significant resources for the domestic bio-technical industry (e.g. PLIVA) that are currently consumed abroad, to be kept in the country. Services offered by newly founded contract research organisations can be offered to the foreign market.

12. With appropriate taxes and other alleviations, it is necessary to increase private venture capital investments into newly founded bio-technical companies. The State needs to continue to increase resources invested for this purpose.

13. *Education of excellence* of young professional in domestic and foreign science milieus is a *conditio sine qua non* for the development of modern bio-technology as a means of adding value to traditional bio-technical disciplines.

14. Training in the area of *protecting patents* is vital to formulating patents and commercialising bio-technical discoveries.

15. It is important to *continually educate the public* about the meaning and significance of bio-technology. It is vital that the public understands the process from discovery to the production of bio-technical products, requires a significant period (up to 15 years) and that products are quickly outdated. It is vital to use scientific facts to remove any misunderstanding in the public about genetically modified organisms.

16. It is vital to found a *co-ordinating body* that will accelerate the defining of strategic interests and capabilities of Croatia, recommend priority projects, connect academic communities and industry and optimally utilise available resources. Professional and scientific societies are the best possible focal points for support for these activities.

17. It is vital to set up a body that will motivate development and the implementation of standards such as current Good Laboratory Practises and to issue relevant attest certificates. A consortium of professional societies is the best focal point for support for these activities.

It is necessary to continually research and advance the education of experts in bio-sciences and to motivate the industry to employ highly qualified experts.

Professor Slavko Matić, Ph.D.  
Professor Stanimir Vuk-Pavlović, Ph.D.

## Biomedicine & Health

1. In an organised and systematic manner and with the assistance of the Croatian Diaspora, strategically plan the development of Croatian science, tertiary and health institutions.

2. To include the Croatian Diaspora in the preparation and implementation of study programmes at Croatian universities, particularly doctorate and post-graduate studies.

3. To include the Croatian Diaspora in ensuring the quality of tertiary education, science and professional work, particularly with regard to evaluation procedures in institutions and of science projects.

4. To initiate development programmes for young Croatian scientists and professionals in foreign institutions guaranteeing their return to the homeland via conditions and infrastructures that will secure them appropriate working conditions.

5. To ensure the integrity of qualifications, education and science in Croatian clinical and university hospitals so that academic criteria does not conflict with routine standards.

6. To initiate collaborative research and qualified development programmes with the aim of promoting Croatian science, tertiary and health institutions utilising resources and excellence in the Croatian Diaspora.

7. With the assistance of the Croatian Diaspora, develop a national network of science, educational and professional centres of excellence.

8. To formalise co-operation between Croatian and foreign institutions to alleviate the utilisation of resources, setting up combined studies and include the Croatian Diaspora in developing a science and health system.

9. To remove the barriers and ensure financial resources to include the Croatian Diaspora in all activities recommended to date.

10. To set up a system of communications between the Croatian Diaspora and Croatian tertiary, science and health institutions, particularly Internet portals enabling *on line* communications.

### Recommendations

#### For institutions

1. To strategically plan their own development, particularly human resources and to utilise resources and the strength of the Croatian Diaspora.

2. To develop study programmes with the assistance of the Croatian Diaspora.

3. To include the Croatian Diaspora to secure the quality of education, science and professional work.

4. To include the Croatian Diaspora in collaborative research work and development of expertise.

#### For the Ministry of Science, Education and Sports and the Ministry of Health and Social Welfare

1. To organise communications between Croatian institutions and the Croatian Diaspora.

2. To set up funds and programmes to finance the participation of the Croatian Diaspora in the development of science, professional and educational programmes.

3. Through foundations and programmes, support partnerships between Croatian tertiary institutions and the industrial and private sectors.

4. To promote programmes to motivate ex-patriotism from the Croatian Diaspora to Croatian institutions as well as exchange programmes for the Croatian Diaspora with Croatian institutions.

5. To develop procedures of evaluation with the assistance of the Croatian Diaspora.

#### For the National Science Council and the National Council for Tertiary Education

1. To include the Croatian Diaspora in external evaluation programmes in science and tertiary institutions.

2. To include the Croatian Diaspora in other evaluation procedures.

#### For National foundations for science, tertiary education and technological development in the Republic of Croatia

1. To initiate programmes to include the Croatian Diaspora to develop strategic fields based on the principle of excellence and competency.

2. To include the Croatian Diaspora in evaluation procedures.

Professor Željko Bošnjak, Ph.D.  
Professor Daniel Rukavina, Ph.D.

## Social Sciences

Accepting the Declaration and the attitudes contained within, particularly those relating to co-operation between Croatian sciences in the homeland and abroad, in its conclusions, the Social Science Section emphasises the following specificities in social sciences:

1. General, social sciences in the Republic of Croatia, regardless of the fact that they produced renowned scientists and scientific results, indicate a falling behind in relation to social sciences in the world. A certain level of neglect exists towards social sciences in the Republic of Croatia.

2. The reasons for the backwardness are objective (specificity that thwarts comparison). Systematic reasons exist too. Political (state, regional or local) criteria have not always allowed the optimal utilisation of the network of science organisations.

3. The national character of social sciences is its wealth and advantage but also their problem. This in particular relates to value criteria. It is necessary to identify value criteria that will respect the specificity of social sciences, enable international comparison and the application of the criteria of excellence.

4. We stress the need for social research both fundamental and applied. Distinct from other disciplines where we can wait for others to solve certain problems and then just apply these solutions, in the field of social sciences this is not possible.

5. We draw attention to the poor perception of science in the wider public, particularly of social sciences. We call on public institutions to motivate the public media to popularise science and achievements in science.

6. We call on the economy when developing investment, to recognise the significance of social sciences in the economy.

7. The efficiency of science, particularly applied in real social relations is a value, but not the only one. Ethics, sociality and humanity are values that social sciences must promote in particular.

8. The education system, based on the autonomy of universities, other scientific organisations and scientists need to respect the specificity of social sciences. There can be no tertiary education without a good quality elementary and secondary education system. In addition to high technology and computerisation, we call for the revival of the book as the fundamental source of knowledge.

9. Participants involved in the Section proposed a series of conclusions directed to advancing social sciences. Some of these are highlighted:

- The need for better communication between scientists, particularly the Croatian Scientists' Portal;
- We stress the need for an inter-disciplinary approach, not just between social sciences but in relation to other science fields too;
- As part of the development of specific knowledge and its evaluation, we expect special attention for junior scientists. There has been thought to introducing a State Examination as a method of ensuring a higher standard of knowledge and advancement;
- The so-called 'brain drain' which we perceive as an incorrect form of co-operation between the homeland and immigration, needs to be replaced with so-called 'brain circulation', a process of interaction of domestic and foreign intelligence.

The Section paid particular attention to discussing VUKOVAR – the heroic city and surrounds, where the destruction of the war left the deepest trail. We call on the relevant state bodies to ensure the complete development of this region: economic, demographic and cultural. We expect the relevant state bodies to assist with the revival of institutions. We expect the Ministry of Science, Education and Sports to set up an appropriate network of educational and science organisation in that area.

Professor Stjepan G. Meštrović, Ph.D.  
Professor Ivo Josipović, Ph.D.

## Humanities

All science fields mutually supplement each other during man's realisation of the world and of himself and without anyone of them; this realisation would not be complete. A particular value of this Congress is that it connected all these fields. This is evident from the perspective of humanities sciences. All scientific thought emerged from them. Philosophy gave birth to all sciences. Today humanities sciences combine the most diverse science fields just like *spiritus movens* inspires new ideas and new realisations.

1. To motivate debates resulting from this Congress, about the role of humanities sciences amongst other sciences, of their role in society and their task to broaden knowledge about the Croatian culture and language must continue in the future with constant forms of co-operation.

2. We support co-operation between the homeland and immigration in the spirit of a "worldwide (global) Croatia", spiritual, intellectual and interest groups for all Croats around the world for everyone's well being.

3. We wish to motivate co-operation in networking Croatian humanities scientists from all continents with those in the homeland and with each other. We will create a Croatian information system across all borders.

4. We propose that our colleagues working in the field of the Croatian culture and art, seek foreign partners while co-operating with humanities scientists in the homeland; to initiate international projects and to assist in searching for foreign funding for such projects. We call on our colleagues abroad to co-operate as reviewers of university programmes, science projects and other work in Croatia. In this way, they could contribute to fortifying international standards in evaluating university and scientific work in the homeland as well as helping to achieve excellence in these fields.

5. We propose that a National Foundation for Humanities be founded which would be formed by delegates from the Diaspora and Croat immigrant communities to act as a liaison with possible sponsors.

6. We seek that the Croatian Sabor (Parliament) legislatively protects Croatia's cultural heritage and natural environment for the sake of national interest so that we can be all the more prepared to access the EU and so that culture and an untouched natural environment can become a registered trademark for our tourism and economy.

7. We ask that institutions in the Republic of Croatia work on founding and developing Croatian language, literature and editing studies, departments and faculties around the world.

8. We consider that it is our duty to work loyally towards spreading well founded and well thought out announcements about Croatia's Mediterranean and central-European culture within the framework of each humanities science in Europe and the world – within the framework of history and archaeology, the science of literature, history of art, anthropology and ethnology (with folklore studies), philology and linguistics, theology and philosophy – as elements of an appropriate and complete picture of Croatia in world science and for the wider public.

9. We support the founding of and support for international research centres in Croatia and Croatian cultural centres in the world.

We seek that research in all scientific fields respect high ethical standards and that ethical and bio-ethical commissions regularly include representatives from humanities, particularly philosophy and theology where the discipline of ethics belongs.

Professor Vladimir Goss, Ph.D.  
Professor Mislav Ježić, Ph.D.

# The First Congress of Croatian Scientists from the Homeland and Abroad

## Zagreb-Vukovar, November 15-19, 2004

The First Congress of Croatian Scientists from the Homeland and Abroad took place on November 15-19, 2004, in Zagreb and Vukovar. The organizer was the Ministry of Science, Education and Sports of the Republic of Croatia. I believe that approximately 400 colleagues from the fields of natural, technical, biotechnical sciences, biomedicine, health care, as well as social sciences and humanities, have attended the Congress. Together with them, and thanks to cooperation between the Ministry of Science, Education and Sports and the Croatian Academy of Engineering, 267 assistants participated at the Congress Poster Section, where they presented their posters from the scientific meetings that were held abroad during 2002, 2003 and 2004. The Croatian Academy of Engineering has prepared and published the Proceedings of the Congress Poster Abstracts, Vol. I and II, and provided for that all assistants receive it during the Congress. Although the Congress had been announced as early as spring, 2004, it seems that only few colleagues from Croatia have recognized on time the meaning of this meeting, because there were only few of them that I noticed from the field of biotechnical sciences. The Congress started on a high political level, including the attendance of the President of the Republic of Croatia, the Prime Minister of the Croatian Government, the President of the Croatian Parliament, the Minister of Science, Education and Sports as well as other VIPs.

As most of the lectures presented at the Congress were not strictly expert-oriented, but rather principle-oriented and encompassing the issues of education, educational reform, science, promotion to higher scientific degrees, CC papers, project evaluation, international peer-reviewing, cooperation between professions, interdisciplinarity and other

topics interesting to the colleagues in the system of science and higher education, most of the lectures from one field were almost equally interesting to the other fields also. I kindly ask the colleagues that will not be mentioned in this review not to resent for my commenting only few lectures, because I either did not attend their lecture or I did not take notes.

There were 12 plenary lectures at the Congress in total, and more than 90 participants were involved in the discussions.



*Young assistants at the Faculty of Food of Technology and Biotechnology, University of Zagreb*

The Economic Forum was held on November 17, under presiding of Mr. Nadan Vidošević, President of the Croatian Chamber of Commerce. The Forum included the propositions and measures presented by the managers of our largest companies (such as Pliva, Podravka, Končar – Electrical Engineering Institute, Privredna banka), on how to facilitate a faster development of the Croatian production and economy via direct investments in science, education and technologies.

During the Natural Sciences Section, Mr. Vladimir Paar, Full Member of the Croatian Academy of Sciences and Art, was speaking on project estimation, results accomplished on the projects, analysis on how many CC papers were produced by a project (he stated 40), i. e. by a scientist engaged on a project. Mr. Paar considers unacceptable that all fields should have the same criteria for promotion of scientists to higher scientific degrees. On the contrary, the most prominent scientists should define the criteria for their fields. He also emphasized the importance of cooperation between scientists and the media, as well as the idea that



*Hotel "The Westin" Zagreb*

scientists should make efforts on gaining the positive perception of their professions in the media, as well as on improving the existing cooperation.

Mr. Zlatko Bačić from New York, U. S. A., stated that the young scientists do not have to stay in the scientific and higher-educational institutions exclusively, but they should accept the employment in the hi-tech companies instead. He admitted that he is aware of the lack of such companies in Croatia and that the problem should be seen in a wider perspective. He also emphasized that the scientific system should undergo a significant metamorphosis, including selective support to projects and more productive scientists. Thus more money should remain to support quality and productiveness of human resources instead of their equalization. The project evaluation should be more rigorous, including prevention of the conflict of interests, which can be realized only if we use the external peer-reviewers. The number of papers and the impact factor are overestimated in Croatia, while lesser significance is given to the peer-reviewers, which is a *vice versa* situation in comparison to the situation abroad. If the scientific peer-reviewers' public abroad evaluates someone's work positively, he is to become Professor, and if not, he is deemed to look for another employment after six years. Only successful scientists with projects have the assistants, who are in such cases on the project payroll. This means that young potential scientists develop under guidance of prominent top scientists only.

Mr. Mladen Petravić from the National University of Canberra, Australia, presented his opinion of the urge for interior changes in the Croatian science. As he sees it, the amount of funds of 100.000,00 HRK per project is intolerable and, moreover, insufficient. If the funds per project were larger, it would facilitate the import of scientists from abroad to Croatia, i. e. the Croatian projects could have guest researchers on the payroll. In Australia the scientific priorities are defined and scientists are involved with those priorities instead with their own interests, which would be intolerable. Therefore it is obvious that Croatia has no scientific priorities defined. When we define the priorities, especially the priority industries, only then the economy can be the engine of the education, science and the entire country respectively. The question is what is the Croatian speci-



*Detail from Vukovar ruins*

ficity, what is inventive and original for our country. He stressed that our research teams are small or at least inactive, if we consider the fact that we have approximately 1800 projects with as many active researchers. The final conclusion drawn from such a situation is that every active researcher has his own project. The relation between the number of researchers and the number of assistants is inappropriate also. In Croatia these numbers are equal, while in Germany the numbers of assistants and enrolled students are equal. In Australia there is a network of scientists, which is necessary for Croatia also, because it would prevent several groups of scientists from engaging on the similar problem without cooperation. Mr. Petravić does not support the postgraduate brain drain from Croatia abroad, but suggests that a material basis should be provided for the young scientists in order to facilitate their postgraduate studies at home. The scientific basis should provide proper working conditions for them, so only after acquiring their doctorates they can go abroad to develop cooperation with other institutions, but in such cases they will return to Croatia.

In the field of Technical Sciences Mr. Ivica Crnković, who is employed in Sweden, has presented his lecture. 50% of the Swedish youth are students, which should be a goal for Croatia also. He thinks that the teaching should be approached pragmatically and multidisciplinary, while the education should be internationalized. Aside from the State, the economy and foundations should also finance education and science. The scientific institutions should apply to contests to ensure the funds for their development. He is aware that the cooperation of scientists in Croatia and abroad is insufficient, and that it is often realized on the basis of common interest and personal acquaintances of scientists. Like Mr. Petravić, he also supports the idea of the scientists' networking, who would be involved in project and paper peer-reviewing and journal editing. According to him, the peer-reviewing and editing should be a volunteer work, because it is a duty that obliges every scientist. Teaching in collegia as well as the international recognition of collegia is very appealing form of cooperation also, together with undergraduate and postgraduate students' exchange. The cooperation might be also realized through organization of



*Memorial procession heading towards the Vukovar Cemetery*



Members of the HATZ in the memorial procession

conferences. We should also have in mind the cooperation on the European projects, some of which have very simple procedures of joining, for the inclusion on such projects is what is needed as much as possible. Neither the bilateral cooperation should be discarded, nor the applications for international and European funds. Mr. Crnković stated that he does not expect this Congress to create miracles, but what he does expect from every individual are the ideas on how to contribute the cooperation.

The data shown at the Congress have demonstrated that Croatia has 3 MScs and PhDs per 1000 inhabitants, while Europe has 6, Japan 9, and the U. S. A. has 6 MScs and PhDs per 1000 inhabitants.

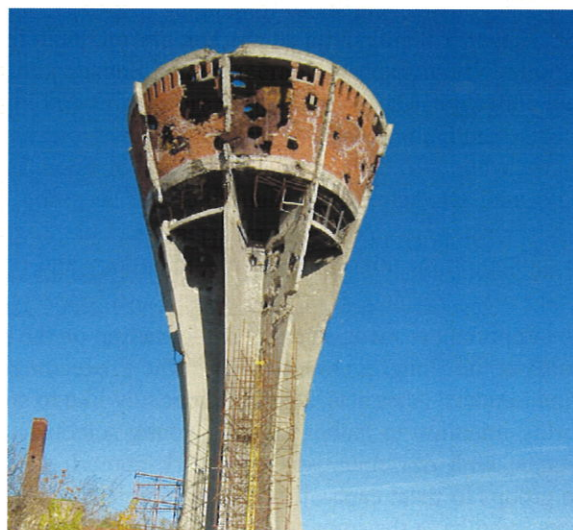
Mr. Bojan Cukić, employed at the University of Virginia, U. S. A., has presented his laboratory with 15 employees, whose weekly expenses are 28.000,00 USD. The laboratory is in a smaller part financed by the U. S. Ministry of Science, while the greater part of the funds comes from the international projects and the economy, which expects the investments to be justified. Another source of funds for the laboratory are the foundations. Mr. Cukić stated that the promotive activities are essential for every department and institution, because thus it is visible what happens with the money invested in one's work. We should not underestimate the papers in journals, but writing papers does not cover the entire working activities. Contacts make the money! As the idea for making funds, all available opportunities should be taken into consideration, such as concession of the building's or lecture hall's name for a certain period or several years, even for 99 years. An example that he demonstrated has shown that sometimes 50% of time can be spent on non-scientific activities.

During the Biomedicine and Healthcare Section many lecturers have spoken: Mr. Željko J. Bošnjak (Wisconsin, U. S. A.), Mr. Daniel Rukavina (Rijeka, Croatia), Mr. Mirko Dikšić (Montreal, Canada), Mr. Mladen Boban (Split, Croatia), Mr. Željko Dujic (Split, Croatia), Mr. Ivo Kalajzić (Connecticut, U. S. A.) and Mr. Davor Vugrin (Texas, U. S. A.). Here is a general scope of ideas presented in their lectures. The scientific diaspora can participate in Croatia through lectures and project evaluation, but they can also accept the young postgraduate students, who wish to accomplish their PhD degree if such students have no

proper conditions for that in their own institutions. This idea was demonstrated by an example of the young scientists from Split. Some of the lecturers mentioned above have also mentioned the initiatives for founding the national excellence centers, quality assurance in the higher education as well as quality management in the higher education and scientific institutions. Connecting clinical hospitals and medical faculties was also mentioned as a *conditio sine qua non*, because these institutions are in fact two spheres in charge of two Croatian Ministries, the Ministry of Healthcare and Social Welfare and the Ministry of Science, Education and Sports. One of the questions was also how much a scientist should be involved with teaching, and the conclusion was that the more prominent scientist one was, the less he should participate in teaching. One colleague from Toronto stated that his involvement with teaching is only 20 hours per year. If the case is opposite, the colleague who is not science-oriented should be involved with teaching maximally and expected to write textbooks. The idea that the application criteria for PhD should be harder, such as 3 CC papers as obligatory, was also very interesting. There was also the idea of founding the network of institutions involved with post-graduate teaching. Thus the post-graduate curricula might encompass various universities and towns. During the lectures the urge for the international cooperation in fighting cancer was also stressed, because it was estimated that approximately 6 million people will die from this disease in the next 10 years.

Mr. Stanimir Vuk-Pavlović (Minnesota, U. S. A.) has presented his lecture during the Biotechnical Sciences Section. He spoke in favor of all four biotechnologies, the so-called "red", "green", "white" and "blue", and against the simplified perception of biotechnology. He stressed that Croatia can make a significant success in health tourism, for example in obesity prevention and cure.

Mrs. Gordana Kralik, Rector of the Josip Juraj Strossmayer University of Osijek and President of the Rectorial Council of the Republic of Croatia, has spoken on the need for privatization and transformation of agriculture, on energy production in the rural areas and the ecological agri-



Ruins of the Vukovar Water Tower



*Participants of the Congress during the commemorative ceremony at the Vukovar Cemetery*

culture, on the agricultural potential for development of the Croatian economy, on the trends in production of agricultural products as well as on the role of forests and forestry in Croatia. Mr. Slavko Matić, Full Member of the Croatian Academy of Sciences and Art and Professor at the Faculty of Forestry, University of Zagreb, has also spoken on the condition of forests in Croatia. I have to admit that he emphasized the advantages of the natural forests very eloquently and from the heart, and reminded the auditory of the negative aspects and problems brought about in this field by the Act passed in 1996.

Mr. Vladimir Parpura (California, U. S. A.) has discussed the issue of patenting and whether or not one should patent the invention. He thinks that the proper answer is "yes", and before the paper is sent to the journal. In order to facilitate the procedure of patenting, an office for research activities as well as office for technological transfer should be founded.

Mr. Boris Mikšić (Minnesota, U. S. A.) has also stressed the importance of patenting. Mr. Davor Šamota has spoken on ecological food, as well as Mr. Zen Rengel from Australia. The issue of food technology was discussed in the lecture of Mrs. Žaneta Ugarčić-Hardi, Vice-Rector of the Josip Juraj Strossmayer University of Osijek.

Mr. Vladimir Mrša, Dean of the Faculty of Food Technology and Biotechnology, University of Zagreb and our young colleague Mr. Tomislav Hengl from Osijek, have both discussed the issue of education in biotechnical sciences, while Mr. Srđan Novak (Faculty of Food Technology and Biotechnology, University of Zagreb) and Mr. Krunoslav Kovačević (Pliva Institute Ltd. Zagreb) have spoken on the connection of biotechnology and economy.

It is important to mention that all information on the participants at the Congress is available in the Proceedings of Section Leaders' Abstracts. I would especially like to stress a worthy intention to gather together young scientists, the assistants, with our scientists who work abroad, and get these groups to meet each other. My opinion is that the assistants, who have the imperative of advancing in our system also, are unjustly discarded. However, in this moment

the main intention was to show the situation of those assistants, who still do not have the opportunities for employment, and yet our wish is that they stay in Croatia. Perhaps a very intensive curriculum of lectures at this Congress has disabled these two groups from meeting each other directly, but there is still the Proceedings of the Congress Poster Abstracts, containing the information on posters that the assistants had presented 2002, 2003 and 2004 at the scientific meetings abroad, and thus the opportunity for their senior colleagues abroad to get a perspective of our younger colleagues' activities. The Proceedings consists of two parts, Vol. I – Natural, Technical and Biotechnical Sciences (493 poster abstracts) and Vol. II – Biomedicine and Healthcare, Social Sciences and Humanities (320 poster abstracts). At the end of the Proceedings there are lists of young scientists, project leaders and countries in which the posters had been presented (most of which in Italy, Slovenia, Hungary and Austria).

In the work of the Congress have also participated the members of the association "Društvo znanost.org" (in English: "Society science.org"), whose aim is to bring together people and projects that wish to make a shift in Croatia towards a knowledge-based society. President of this association is Mr. Damir Kovačić, and more information about the association is available at its web address: [www.znanost.org](http://www.znanost.org), or via e-mail: [ured@znanost.org](mailto:ured@znanost.org).

During the social program of the Congress the National Foundation for Science, Higher Education and Technological Development of the Republic of Croatia was presented to the participants. The presentation was led by Mr. Pero Lučin, President of the Foundation's Managerial Board. The other members of the Managerial Board are Mr. Rudolf Scitovski, Mr. Tomislav Cvitaš, Mr. Ivo Babić, Mr. Stjepan Marčelja and Mr. Zvonko Kusić. The information on aims and first activities of the Foundation are available at its web address: [www.nzz.hr](http://www.nzz.hr). The Foundation shall finance scientific, developmental and educational projects according to its Strategic Plan.

The first part of the Congress was taking place in Zagreb, the Croatian capital, on November 15-17, while the second part was scheduled for November 18-19 in the Croatian heroic town of Vukovar. On Thursday, November 18, the participants of the Congress have joined the solemn commemorative procession on the occasion of 13<sup>th</sup> anniversary of the Vukovar tragedy in the Homeland War. Afterwards the Congress proceeded with its work in Vinkovci, where the Conclusions of the Congress were passed. The Conclusions are conceived as appendix to the Declaration of the Congress. The Declaration was passed in a very important moment for Croatia, when there is a need for public awareness of the challenge that the Croatian application for membership in the EU brings about. As the Declaration emphasizes affirmation of knowledge and investment into education and science as the most profitable investments, this Declaration shall be presented to the Croatian Government as an obligatory document.

## Participation of the HATZ President at the Celebration of the ACATECH Anniversary in Berlin, Germany, October 27, 2004

According to kind invitation of Prof. Joachim Milberg, President of the ACATECH (Convention for Technical Sciences of the Union of German Academies of Sciences), I participated at the Celebration of the ACATECH Anniversary. The Celebration took place on October 27, 2004 in "Konzerthaus Berlin am Gendarmenmarkt" in Berlin, Germany. My participation at the Celebration was funded by the Croatian Ministry of Science, Education and Sports.

On behalf of Prof. J. Milberg, I was kindly welcomed by Prof. Rainer Koop before the beginning of the Celebration, which proceeded in accordance with the German State Protocol. I used the occasion of exchanging greetings with Prof. R. Koop to present him a set of serial publications "Current Studies of Biotechnology", Vol. I-III and to invite him and his distinguished colleagues from the ACATECH to participate at our forthcoming Conference "Biotechnology and Immuno-Modulatory Drugs", which will take place on February 20-23, 2005 in Zagreb, Croatia. The Celebration was taking place in the Great Concert Hall in Berlin and was attended by former President of the Federal Republic of Germany, His Excellency Mr. Roman Herzog and current German Secretary of State, His Excellency Mr. Gerhard Schröder. Aside from the Members of the ACATECH Senate, approximately 400 guests attended the Celebration.

During his preliminary lecture, President of the ACATECH stressed that the name of the ACATECH springs from an urge for creating intensive connections between the academic engineering professions and the industry, having in mind that German technology must be based on innovation, more than it has been until now. Mr. Roman Herzog, former German President, who is also President of the ACATECH Senate, has stressed that, although being a jurist by profession, he is well aware of the significance of innovation in the production processes as the key for launching, both Germany and the EU, back to the top of the pyramid of technologically utmost developed countries. Aside from Mr. R. Herzog, in all their further speeches Mr. G. Schröder, Prof. J. Milberg and Mr. Ernst Ludwig Winnacker, President of the German Research Union, have also emphasized that German priorities are to be found in biotechnology, biotechnologically based food quality, envi-

ronmental protection and nanotechnology. As Mr. R. Herzog pointed out, Germany has to abandon the existing model of "kugloff", in which the dimensions are defined by a mould and thus every participant tries to configure his segments differently than the others, and which leads to conflict. His idea was to make a shift from such a model to a model of "pizza", in which there are many options, such as "small", "big", "twice", "grand" and "grandissima". Thus every participant, by his own effort, increases the total budget instead of surviving by overtaking the part of the budget that belongs to others. A very interesting and picturesque example!

While discussing on biotechnology, German State Secretary Mr. G. Schröder has openly demanded that, from the very start of some clearly target-oriented research, the environmental impact researches have to commence simultaneously. Thus there will be no such situations as there are now, when precious time and money are spent on *post festum* evaluations of the environmental impact, instead of that being done and warned about *ante festum*.

Mr. R. Herzog especially pointed out that, while discussing on the application of biotechnology, one has to be able to differ between groups of those who are "really concerned" and usually are a minority, and those who, by putting obstacles to employment of new technologies and products, only wish to keep their previously assumed privileges.

Mr. Jürgen Strube, President of the Union of Industrial and Employers' Confederations of Europe, has stated that he wishes and is convinced that in the future two years Germany and France would accept English as a single language of the EU. Having in mind especially the enlarging of the EU in the future, that would have cut the costs significantly and made all activities faster and more efficient. Prof. J. Milberg has expressed hope that the ACATECH shall, through Euro-CASE, become even more internationally present and finally become a member of the CAETS and thus enter into global division of knowledge and technologies. In these efforts the ACATECH can certainly count on support of the HATZ, who is a member of both CAETS and Euro-CASE associations.

Zlatko Kniewald

## Donations

# Branko Ladanyi, Fellow of the Canadian Academy of Engineering

Branko Ladanyi, who was born and educated in Zagreb, Croatia, is Professor Emeritus at the Department of Civil, Geological and Mining Engineering of Ecole Polytechnique, University of Montreal. After graduating in Civil Engineering at the University of Zagreb in 1947, and obtaining his Ph.D. degree at the Catholic University of Louvain, Belgium (1959), he came to Canada in 1962 to take a teaching post in geotechnical engineering first at the Laval University in Quebec City, and then in 1967 at Ecole Polytechnique, University of Montreal, where he has since then been teaching and doing research in geotechnical engineering, and in particular, in the fields of permafrost engineering and rock mechanics.

Branko Ladanyi is considered to be one of the Canadian pioneers in northern engineering education and research, and in particular in the area of civil engineering. His northern engineering research work, which he started in the 1970-ties, has resulted in over 200 scientific publications, some of which have contributed significantly to the development and improvement of field investigation methods for frozen soils and ice, as well as to an improved design of civil engineering structures in permafrost regions. Several of these methods have found a wide application in practice, not only in Canada, but also in the U.S.A., and in Scandinavia, Russia and China. Since 1970, Branko Ladanyi has made with his students and collaborators several field research stages in Northern Québec, Manitoba, Yukon, Northwest Territories and Newfoundland, as well as in Alaska and on Spitsbergen. He is co-author of the book: "An Introduction to Frozen Ground Engineering" by O.B. Andersland and B. Ladanyi (1994), the Second Edition of which was published in 2003 by John Wiley & Sons.

Branko Ladanyi has been often invited to give special lectures at North American and European universities. He



was also a visiting lecturer in Russia (1973, 1989), China (1977, 1986), and Australia (1980, 1983).

He is a recipient of numerous scientific awards, such as: The Quebec Scientific Award (1974), the R.F. Legget Award of the Canadian Geotechnical Society (1981), the E. E. De Beer Award of the Belgian Geotechnical Society (1987), the E.F. Rice Memorial Lectureship Award of the American Society of Civil Engineers (ASCE) (1991), and the R.J.E. Brown Memorial Award of the Canadian Geotechnical Society (1993). In 1995, he also received the Canadian-American Civil Engineering Amity Award from the American Society of Civil Engineers (ASCE), the Standards Development Award from the American Society for Testing and Materials (ASTM), as well as the Canadian Northern Science Award from the Department of Indian Affairs and

Northern Development. Quite recently, in 2003, he received also from ASCE the Harold R. Peyton Award for his research contributions to the field of Cold Regions Engineering. He is a Fellow of the Academy of Science of the Royal Society of Canada, as well as of the Canadian Academy of Engineering, the Engineering Institute of Canada, the Canadian Society of Civil Engineering, and the American Society of Civil Engineers.

Branko Ladanyi is married, and has three children and three grandchildren.

**Prof. Branko Ladanyi is the first donor to the Foundation of the Croatian Academy of Engineering, which started its activities on January 1, 2005. We are especially grateful to Prof Ladanyi for his donation of USD 2,000.00, dedicated to the execution of the Foundation Program in the future.**

Editorial Board

## International activity

# TRB 84th Annual Meeting of the National Academy of Engineering Washington, D.C., January 9-13, 2005

The TRB 84th Annual Meeting was held in Washington DC in January this year. As Croatian representative I attended this meeting. This scientific event in the field of transportation – predominantly in road sector – is unique in the world. Each year, this meeting attracts thousands of transportation professionals (this year there were more than 9000 people), taking place always in Washington DC and in the same three hotels. TRB meeting offers opportunities to share knowledge and perspectives, as well as to learn about the latest developments in transportation research, theory and practice. More than 2600 presentations and papers addressed topics of interest to policy makers, administrators, practitioners and researchers from government, industry and academia.



*Prof. Mate Sršen, Ph.D., Member of the HATZ, participant of the Meeting*

The five-day program included 823 sessions on all aspects of transportation, including this year's spotlight theme on transportation from the customer's perspective, providing a safe, secure and integrated system. Speciality workshops, committee meetings and TRB exhibits complemented the sessions, as well as the possibility to meet the authors of exhibited posters, providing attendees with a variety of opportunities for information sharing and interaction. At registration all attendees received a CD-ROM containing a compendium of papers that were presented during the meeting.

Numerous sessions and papers were arranged by thematic topics (here described in alphabetical order):

- Accelerated design and construction (roads, bridges)
- Aviation ( infrastructure for aircraft maneuver-runway, taxiway, etc.)
- Bituminous materials
- Concrete materials
- Construction (asphalt and concrete pavements; hot-mix asphalt for improved performance)
- Data and information systems
- Design (road pavements, urban roads, airport preparations for A 380 new large aircraft)
- Design and construction: Quality and performance
- Environment and energy
- Freight systems (safety; security; hazardous materials incidents)
- Geology and earth materials
- Legal resources (guidelines; public requests)
- Maintenance (roads; bridges; traffic control devices)
- Management and leadership
- Marine (ports; waterways; ferry transportation)
- Operations



*Official poster of the Meeting*

- Pavement management
- Pedestrians and cycles (safety; data needs)
- Public transportation and ferries
- Rail (truck substructure design, maintenance; diagnostics)
- Research and education
- Roadway pavement preservation
- Safety (road safety; pedestrian safety-human factors, weather conditions)
- Security ( goods truck transport; transportation of hazardous materials)
- Social, economic and cultural issues
- Soil mechanics
- Structures (bridge and tunnel-security, rehabilitation, management)
- Systems planning, policy and process
- Transportation from the customer's perspective
- Transportation policy
- Travel analysis methods
- Trucking (safety and security in transportation; hazardous materials)
- Users of transportation infrastructure (fare policy; applying advanced technologies)

Notable number of papers from stated thematic topics treat road maintenance and preservation issues. It is done in a way which provides optimal solutions and gives the maximum benefit for entire community. Such findings and practice are particularly interesting for Croatia, because of our specific situation regarding the road investment. It is known in Croatia that our politicians lead unbalanced road developmental policy, which means that they give preference to construction of new roads over the preservation of existent road infrastructure. Clearly, it is not economically reasonable.

To HATZ members it might be interesting that the **Transportation Research Board** is a division of the National Research Council, which serves the **National Academy of Sciences** and the **National Academy of Engineering**. The Board's mission is to promote innovation and progress in transportation through research.

The **National Academy of Engineering** is autonomous in its administration and in the selection of its members, sharing with the National Academy of Sciences the responsibility of advising the Federal Government.

Mate Sršen

## The 12<sup>th</sup> International Conference on Software, Telecommunications and Computer Networks “SoftCOM 2004”

The 12th International Conference on Software, Telecommunications and Computer Networks SoftCOM 2004 was held from 10 to 13 October 2004 in the pleasant ambience of the cruising ship “Marko Polo” on the attractive route Split-Dubrovnik-Split-Venice-Split. It was organized by the University of Split, Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture under the auspices of the Central State Administrative Office for e-Croatia of the Government of the Republic of Croatia, the Ministry of Science, Education and Sports, and the Ministry of the Sea, Tourism, Transport and Development with the principal patron T – Croatian Telecom. The Conference was technically co-sponsored by the IEEE Communications Society (ComSoc).

Researchers and experts from industry, research institutes and universities from more than 40 countries all around the world have submitted more than 200 papers for presentation at SoftCOM'04. Submitted papers have been reviewed by more than 100 scientists from universities, institutes and companies all over the world. All accepted papers have been carefully selected based on their contribution, relevance, conceptual clearness and overall quality.

Nearly 54% of submitted papers have been recommended for presentation within the technical program.

The conference program has featured a symposium dedicated to the most actual topics in the area of mobile and wireless communications. Two special sessions and seventeen general conference sessions, a poster session and two professional workshops: first dedicated to the wide spectra of themes from the area of ICT, and the second dedicated to signals and systems in human motion, have been held too. In addition five half day tutorials have been held by worldwide recognized experts. The fruitful collaboration with the universities from Ancona, Lecce, Bari, Budapest, Zagreb, and London has contributed to the quality of the Program significantly.

In conjunction with the SoftCOM'04 conference a Business Forum has been organized featuring invited talks, round tables, presentations with participation of managers, executives, experts, government and institutions representatives who discussed and exchanged opinions and experiences on a number of hot topics in contemporary and future ICT industry and market including business, technological and social aspects. In addition prototype demonstrations as well as exhibits were held in the area of the car deck of the ship.

Ivica Veža

# Admission of the HATZ to the Euro-CASE



**Euro-CASE**  
European Council of Applied  
Sciences and Engineering

Prof. Zlatko Kniewald  
President  
Croatian Academy of Engineering  
PO Box 59  
HR-10 001 Zagreb  
Croatia

Paris 15.09.2004

Dear Professor Kniewald,

Thank you for your letter of 5 May 2004 and enclosed documents.

The Articles of Association of Euro-CASE allow Euro-CASE to accept academies included in the European Union's list of Candidate Countries as "Associate academies". Associate academies pay a reduced annual subscription, and do not have a vote on the Board, but attend its meetings. An Associate member academy will normally become a Full Member of Euro-CASE when its parent state becomes a full member of the European Union.

All members of Euro-CASE, full or associate, comply with the below criteria:

The applicant is recognised as the single national academy or equivalent qualified organisation representing engineering or applied sciences in that country, and is actively engaged in the promotion of applied sciences, technology and engineering.

The applicant can demonstrate that it is independent of governmental or other external control.

The applicant is active, has access to the experts in that country, agrees to contribute to the work of Euro-CASE, and is capable of dealing promptly with the Euro-CASE headquarters in Paris over routine business.

The applicant agrees to abide by the Articles of Association and the Rules of Procedure current at the time of admission.

The applicant agrees to pay a joining fee in the year of joining and an annual membership fee thereafter in accordance with the Rules of Procedure.

#### Members

Austrian Academy of Sciences  
Royal Belgian Academy Council of Applied Sciences  
Danish Academy of Technical Sciences  
Finnish Academies of Technology  
National Academy of Technologies of France  
German Council of Technical Sciences of the Union of the German Academies  
Technical Chamber of Greece  
Irish Academy of Engineering  
FAST - Italian Council of Applied Science and Engineering  
Netherlands Society of Technological Sciences and Engineering  
Norwegian Academy of Technological Sciences  
Portuguese Academy of Engineering  
Spanish Academy of Engineering  
Royal Swedish Academy of Engineering Sciences  
Swiss Academy of Engineering Sciences  
The Royal Academy of Engineering (UK)

#### Associate members

Engineering Academy of the Czech Republic  
Hungarian Academy of Engineering

28, rue Saint Dominique - 75007 Paris - France - Tel: +33 1 53 59 53 40 - Fax: +33 1 53 59 53 41  
mail@euro-case.org - www.euro-case.org

The Euro-CASE Board has discussed your application for membership of Euro-CASE at its meeting today.

I am pleased to inform you that the Board has accepted your application and therefore to invite you to become an associate member of Euro-CASE from 1 January 2005.

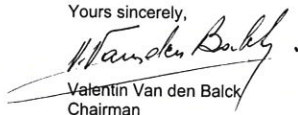
Two yearly Board meetings are organised in Paris, in March and September. Other meetings and workshops are organised with the experts involved in Euro-CASE's activities. Expenses for participation in Euro-CASE meetings are covered by the member academies.

The Rules of Procedure and Articles of Association are under revision. We shall send you those documents in due time.

The membership fee for associate academies in 2005 is €1,358. The joining fee is €2,500.

Thank you for your interest in Euro-CASE. We look forward to including your activities and to work together with you.

Yours sincerely,

  
Valentin Van den Balck  
Chairman

## The HATZ has become a Full Member of the CARNet

According to the decision of the Minister of Science, Education and Sports of the Republic of Croatia dated October 18, 2004, the Croatian Academy of Engineering is admitted to the Croatian Academic and Research Network (CARNet) as a Full Member.

## The CEI Award presented to Our Associated Member Đurđa Vasić-Rački



**Subject:** CEI call "From Research to Enterprise"

Dear Mrs. Vasić-Rački,

In my capacity as Chairman of the Evaluating Committee of the CEI call for proposals entitled "From Research to Enterprise" it gives me great pleasure to inform you that your application "Production of bioproducts with high purity including biocatalysis and downstream processing" has been selected as one of the six award winners out of a total of 60 projects submitted.

You will be contacted separately by the CEI Executive Secretariat with regard to the procedure of disbursement of the € 10.000.- grant.

Let me express my warmest congratulations and wish you success in your future activity.

Carlo Rizzuto  
Chairman of the CEI S & T WG

## The European IST Prize 2005

Although the HATZ, as an Associate Member of the Euro-CASE, is still not admitted to the participation to the European IST Prize activities, we are pleased to inform you on the ongoing promotion of this Years European IST Prize.

Paris, January 2005

Dear Madam / Sir,

**We are pleased to invite you to participate in this year's European IST Prize.**

Now in its eleventh year, the European Information Society Technologies Prize is the most distinguished award for innovative products based on information society technologies.

**The closing date for application is 12 May 2005.**

**The European IST Prize is organised by Euro-CASE**, the European Council of Applied sciences, Technologies and Engineering with the sponsorship and support of the European Commission within the framework of the IST Programme.

**50-70 European IST Prize Nominees** are selected among all applicants. They receive the quality label "European IST Prize Nominee", a free presentation of their companies and products and access to various services.

**20 European IST Prize Winners** are selected among the Nominees. The Winners are invited to exhibit their winning product during the yearly IST Event or another event organised by the European Commission. The Winners receive the quality label "European IST Prize Winner" and the European IST Prize Winner Certificate.

**3 European IST Grand Prize Winners** are selected among the 20 Winners. The Grand Prize Winners receive the quality label "European IST Grand Prize Winner" and the European IST Prize Trophy.

**Monetary prizes to be awarded to European IST Prize Winners and Grand Prize Winners are not yet confirmed.** They will not be provided by the European Commission in 2005, but Euro-CASE is in the process of raising prize money.

The European IST Prize Nominees, Winners and Grand Prize Winners receive highly valuable public visibility and media coverage. They will be promoted on the European IST Prize website, in brochures and press releases, and are invited to use the European IST Prize logo in their promotion. **The European recognition that stands behind the selection of the European IST Prize Nominees, Winners and Grand Prize Winners contributes to facilitating access to finance, markets and partnerships, and to enhancing the visibility, credibility and the future business prospects for the company.**

**Download the application form and see the previous years' Winners on [www.ist-prize.org](http://www.ist-prize.org)**

Best regards,  
Alain Mongon  
The European IST Prize

# The Awards of the Croatian Academy of Engineering in 2004

Once a year the Croatian Academy of Engineering presents awards for extraordinary contributions to science and to the profession, for the realisation of the goals and programmes of the HATZ, and for the dedicated work, which has contributed to the social affirmation of the HATZ. The awards are presented in the form of written certificates and are of a pecuniary nature in certain amount. The awards are presented as:

- one Award for Life Achievement "Power of Knowledge",
- up to five Annual Awards "Rikard Podhorsky",
- up to five Awards to the Young Scientists "Vera Johanides"

The procedure of applying for awards and decisions on them are specified in the Bylaws on Awards.

On July 7, 2004, the HATZ has published its annual Call for Nominations for the HATZ Awards, which was concluded on November 25, 2004. According to the proposal of the HATZ Committee for Awards, supported by the Governing Board and the Presidency of the HATZ, the Assembly of the HATZ has decided, at its session held on February 26, 2005, upon the Academy's Awards Laureates for 2004:

## 1. one Award for Life Achievement »Power of Knowledge«:

- **Prof. Marijan Bošnjak, Ph. D.**, for his scientific and research results in total and for their application in and impact on the Croatian economy as well as for his permanent contribution to the development and promotion of the HATZ,

## 2. five Annual Awards «Rikard Podhorsky»:

- **Prof. Hildegard Auf-Franić, Ph. D.**, for the significant scientific achievements in elementary schools planning, programming and designing,
- **Prof. Jasna Franekić-Čolić, Ph. D.**, for the research in the field of ecotoxicology and substances, which enable successful pollution removal without harmful impact on the ecosystem,

- **Prof. Gojko Nikolić, Ph. D.**, for four patents: P20030642 (2003), P20030727A (2003), P20030987A (2003) and P20031024 (2003), which promote founding of the new enterprises and production processes in the Croatian textile industry,
- **Prof. Nedjeljko Perić, Ph. D.**, for the outstanding contribution to research, development and employment of the new strategies of complex engineering systems management,
- **Prof. Stanislav Sever, Ph. D.**, for the eminent scientific work in the field of forest utilization, particularly in the mechanization of cutting, manufacturing and drawing processes.

## 3. five Awards to the Young Scientists »Vera Johanides«:

- **Ksenija Durgo, M. Sc.**, for the scientific research in the field of environmental protection, the results of which are published in the scientific journals,
- **Ivica Garašić, B. Sc.**, for the scientific and professional contribution in the field of welding and non-destructive underwater inspection,
- **Assist. Prof. Mislav Grgić, Ph. D.**, for the scientific contribution in the field of multimedia communications,
- **Ante Jukić, Ph. D.**, for the scientific activity in the field of chemical engineering,
- **Vedran Slačanac, Ph. D.**, for the published papers and the scientific activity in the field of food technology.

The HATZ hereby expresses its acknowledgements to the sponsors of the Awards:

- **Končar Institute for Electrical Engineering, Inc., Zagreb**, for the Award for Life Achievement »Power of Knowledge«,
- **PLIVA Croatia, Ltd., Zagreb**, for the Annual Award »Rikard Podhorsky«,
- **Zagreb Brewery, Inc., Zagreb**, for the Award to the Young Scientists »Vera Johanides«.



# Technics in Croatia

## November 26, 2004, Zagreb

The conference *Technics in Croatia* (Tehnika u Hrvatskoj) was organized in Zagreb by the Department for Technical Culture of the Matrix Croatica on November 26, 2004. The Croatian Academy of Engineering, the Croatian Association of Technical Culture and the Technical Museum were the co-organizers of the conference.

On the occasion of the conference, one of the organizing committee's members and one of the oldest members of the Matrix Croatica, an honorary member of the Croatian Academy of Engineering, Prof. emeritus Vladimir Muljević, in an interview for the *Vijenac* newspaper (issue 280, November 25, 2004) said: "The existence and the activities of the Croatian Association of Technical Culture with about ten thousand members, the activities of the Technical Museum in Zagreb, visited by several thousand visitors each year, mostly young people and students, shows that technics is an important part of contemporary culture in Croatia. ... Therefore, I believe that the future of technical culture, as an integral part of contemporary culture, is guaranteed in Croatia."



*Participants of the Conference*

It is important to point out that almost all papers were printed in the proceedings *Tehnika u Hrvatskoj*, edited by D. Malvić and published by the Matrix Croatica two weeks before the conference. The proceedings (ISBN 953-150-701-5, UDK 62(497.5)(082)) have 158 pages.

Z. Jakobović, in the Introduction of the proceedings, says: "The organizer's wish for the conference was to discuss the manifestation of technics and its application in

Croatia from the broadest of views: professional, cultural, economic, educational, historical, sociological, interdisciplinary and others. Therefore, the invitations to the conference were sent to the broadest circle of possible participants. ... The papers cover topics from the history and appearance of technics in Croatia to the newest state, from education of young people to professional issues, from technical to lexicographical topics."



*Technical Museum in Zagreb*

The conference was opened at the Palace of Matrix Croatica. The participants were greeted by the vice president of the Matrix Croatica Stjepan Sučić, the president of the Croatian Academy of Engineering Prof. Dr. Zlatko Kniewald, the president of the Croatian Association of Technical Culture Prof. Dr. Ante Markotić and by the leader of the Department for Technical Culture of the Matrix Croatica MSc. Zvonimir Jakobović.

The afternoon part of the conference was held at the Technical Museum and began by the opening of the *To Film the Invisible* exhibition by M. Smokvina, organized by the Technical Museum in Zagreb and the State Archive in Rijeka.

The exhibition was followed by lectures grouped into three groups: Technics and Culture, Technics in Education and Publishing and Applied Technics.

Unfortunately, there were only about 50 participants at the whole conference, although its level of organization was high, with interesting topics and essay presentations.

Miljenko Lapaine, Stanislav Frangeš

# Events in 2004

**February 27, 2004**

**Colloquium "Current Approaches to the Education of Engineers"**  
Great Hall of the Faculty of Food Technology and Biotechnology,  
University of Zagreb, Croatia  
Organizer:

- **Croatian Academy of Engineering**

Co-organizers:

- Ministry of Science, Education and Sports of the Republic of Croatia
- University of Zagreb

**18<sup>th</sup> Annual (Elective) Assembly of the Croatian Academy of Engineering**

Great Hall of the Faculty of Food Technology and Biotechnology,  
University of Zagreb, Croatia

**May 24, 2004**

**Prof. Marcel Hofman, Ph. D.**, consultant of the Belgian Government for the issues of GMO and their environmental impact, has presented lecture "**GMO, Environment and Food**"  
Great Hall of the University of Zagreb, Croatia  
Organizer:

- **Croatian Academy of Engineering**

Co-organizers:

- Croatian Academy of Sciences and Art
- University of Zagreb

**May 26-29, 2004**

**CROTOX 2004 – the 3<sup>rd</sup> Croatian Congress of Toxicologists with International Participation**

Hotel "Jezero", Plitvice, Croatia

Auspices provided by:

- Ministry of Science, Education and Sports of the Republic of Croatia
- Ministry of Healthcare and Social Welfare of the Republic of Croatia
- Ministry of Agriculture, Forestry and Water Management of the Republic of Croatia
- **Croatian Academy of Engineering**
- Faculty of Food Technology and Biotechnology, University of Zagreb
- Institute of Medical Research and Occupational Health

**June 23-26, 2004**

**ATDC'2004 – the 3<sup>rd</sup> DAAAM International Conference "Advanced Technologies for Developing Countries"**

Dedicated to the memory of the late Prof. Zdenko Kordić, Ph. D., Associate Member of the HATZ

Hotel "Medena", Trogir, Croatia

Co-organizers:

- Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture, University of Split
- University of Split
- Vienna University of Technology
- Danube-Adria Association for Automation and Manufacturing

**June 29, 2004**

**Round Table Discussion "Production of Wind Power Stations in Croatia"**

Great Session Hall of the Croatian Academy of Sciences and Art,  
Zagreb, Croatia

Organizer:

- Scientific Council for Technological Development, Croatian Academy of Sciences and Art

Co-organizers:

- **Croatian Academy of Engineering**
- Croatian Chamber of Commerce

**September 16-19, 2004**

**Colloquium "Cartography, Geoinformation and New Technologies"**

Faculty of Geodesy, University of Zagreb, Croatia

Organizer:

- Croatian Cartographic Society

Co-organizers:

- Croatian Institute of Cartography
- National and University Library
- National Geodetic Administration

Auspices provided by:

- **Croatian Academy of Engineering**
- Faculty of Geodesy, University of Zagreb

Sponsors:

- Ministry of Science, Education and Sports of the Republic of Croatia
- Institute for Photogrammetry, Inc.
- Tourist Office of the City of Zagreb
- Geofoto, Ltd.
- Navigo Sistem

**October 7, 2004**

**Prof. Charles Q. Yang, Ph. D.**, Professor at the Department of Textiles, Merchandizing and Interiors, University of Georgia, U. S. A., has presented lecture "**Crosslinking of Cellulose and its Applications in Textile and Paper Industry**"

House of the HATZ, Zagreb, Croatia

**October 11-13, 2004**

**SoftCOM 2004 – the International Conference on Software, Telecommunications and Computer Networks**

Split, Croatia – Venice, Italy

Organizer:

- Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture, University of Split

Auspices provided by:

- IEEE Communications Society
- Ministry of Science, Education and Sports of the Republic of Croatia
- **Croatian Academy of Engineering**
- Ministry of Maritime Affairs, Tourism, Transport and Development of the Republic of Croatia
- University of Split

**November 5, 2004**

**19<sup>th</sup> Assembly of the Croatian Academy of Engineering**

Great Hall of the Museum "Mimara", Zagreb, Croatia

**November 15-19, 2004**

**1<sup>st</sup> Congress of Croatian Scientists from the Homeland and Abroad**  
Zagreb – Vukovar, Croatia

Organizer:

- Ministry of Science, Education and Sports of the Republic of Croatia

Co-organizer:

- **Croatian Academy of Engineering**

**November 26, 2004**

**Professional Meeting "Technics in Croatia"**

The Matrix Croatica Palace and The Museum of Technics, Zagreb, Croatia

Organizer:

- Matrix Croatica

Co-organizers:

- **Croatian Academy of Engineering**
- Croatian Union for Technical Culture
- The Museum of Technics

## Forthcoming events

**February 20-23, 2005**

**4<sup>th</sup> Croatian Scientific Conference with International Participation "Biotechnology and Immuno-Modulatory Drugs"**  
([www.hdb.hr/biotechnology4.html](http://www.hdb.hr/biotechnology4.html))

Great Hall of the Ministry of Economy, Zagreb, Croatia

Organizers:

- Croatian Society of Biotechnology
  - **Croatian Academy of Engineering**
  - Scientific Council for Agriculture and Forestry, Croatian Academy of Sciences and Art
  - Croatian Academy of Medical Sciences
  - Faculty of Food Technology and Biotechnology, University of Zagreb
  - PLIVA Croatia Inc., Zagreb
- Auspices provided by:
- European Association of Pharmaceutical Biotechnology

**February 26, 2005**

**Colloquium "Development of New Technologies and Products in Croatia"** ([www.hatz.hr](http://www.hatz.hr))

Great Hall of the Faculty of Food Technology and Biotechnology, University of Zagreb, Croatia

Organizer:

- **Croatian Academy of Engineering**

**20<sup>th</sup> Annual (Elective) Assembly of the Croatian Academy of Engineering**

Great Hall of the Faculty of Food Technology and Biotechnology, University of Zagreb, Croatia

**April 24-27, 2005**

**19<sup>th</sup> Croatian Meeting of Chemists and Chemical Engineers**  
([www.hdki.hr/19\\_Skup\\_2005/index\\_19.htm](http://www.hdki.hr/19_Skup_2005/index_19.htm))

Opatija, Croatia

Organizers:

- Croatian Chemical Society
  - Croatian Society of Chemical Engineers
- Auspices provided by:
- **Croatian Academy of Engineering**

**March 15-16, 2005**

**Euro-CASE Board Meeting** ([www.euro-case.org](http://www.euro-case.org))

Paris, France, EU

Organizer:

- European Council of Applied Sciences and Engineering (Euro-CASE)

**July 10-14, 2005**

**16<sup>th</sup> CAETS Convocation "Oceans and the World's Future"**

(<http://www.atse.org.au/index.php?sectionid=546>)

Cairns International Hotel, Cairns, Queensland, Australia

Organizer:

- International Council of Academies of Engineering and Technological Sciences (CAETS)

**September 24-27, 2005**

**2<sup>nd</sup> Congress of Croatian Geneticists with International Participation** ([www.genetika.hr](http://www.genetika.hr))

Velaris, Supetar, Island of Brač, Croatia

Organizer:

- Croatian Genetic Society

Sponsors:

- Ministry of Science, Education and Sports of the Republic of Croatia
- Faculty of Food Technology and Biotechnology, University of Zagreb
- Faculty of Science, University of Zagreb
- "Ruder Bošković" Institute
- Institute for Medical Research and Occupational Health
- PLIVA, Inc., Zagreb

Auspices provided by:

- Croatian Academy of Sciences and Art
- **Croatian Academy of Engineering**

**2006**

**20<sup>th</sup> International Congress »Energy and the Environment 2006«**

([www.hsse.hr](http://www.hsse.hr))

Opatija, Croatia

Organizer:

- Croatian Association for Solar Energy

Auspices provided by:

- **Croatian Academy of Engineering**

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