



Latest news

- HATZ becomes a full member of Euro-CASE
- HATZ officially recognized as scientific organization
- Agreement signed between HATZ and Austrian Academy of Sciences
- Milan Bandić, Mayor of Zagreb, accepts co-patronage of Ruder Bošković's tricentennial



CAETS

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New Technology

Photonic Crystals – Enabling Optical Signal Processing

In recent decades, electronics has demonstrated enormous success in advancing almost any application that has to do with information processing: following Moore's law, data density on an electronic chip has doubled every 18 months. Although such an exponential growth is likely to continue for a while, inherent physical limitations of electronics are expected to prevent this growth from lasting indefinitely. Some of these limitations are already becoming manifest today: as electronics in modern computers is forced to operate at ever-higher frequencies, power dissipation and consequent hardware heating are becoming a very serious problem. In nodes of optical telecommunication networks, where data needs to be processed electronically at operational frequencies that are even higher, the problem is even more eminent. Electronics is simply not suitable for operation at very high frequencies, or bandwidths.

Realizing that electronic signal processing would eventually face this fundamental physical limitation, engineers in the early 80s enthusiastically explored the possibility of building an optical computer, in which data would be carried with light (photons) instead of charged carriers. Optical domain is perfectly suited for operation at high frequencies, with physical limits orders of magnitude higher than those of electronics. However, for true all-optical signal processing, one has to have a way of influencing light with light itself: one has to use optical nonlinearities. In optically nonlinear media, the index of refraction is modified by the presence of a light signal; this modification can be explored to influence another light signal, thereby performing an all-optical signal processing operation. In order to efficiently operate at high speeds, one prefers to use nonlinearities with ultra-fast (or nearly instantaneous) response and recovery times. Unfortunately, such nonlinearities are extraordinarily weak, so the proposed optical logi-



Assistant Professor of Physics
Marin Soljačić, Massachusetts
Institute of Technology (MIT),
Cambridge, U.S.A.

cal elements from the 80s were too large, and consumed orders of magnitude too much power to be feasible. Since electronic computers of the time were still far from their physical limits, the research in the area of optical computing dramatically subsided in the years that followed, and people started viewing optical signal processing as being impractical due to the weakness of the optical nonlinearities.

Since those days, the limits of electronics have become much more pressing,

and to mitigate the problems associated with them, engineers have recently started resorting to optics again. In optical telecommunication networks engineers nowadays try to minimize the involvement of electronics in signal manipulation and to keep the signals in the optical domain for as long as possible. Furthermore, even data transport between various electronic desktop computer parts (e.g. between different parts of the processor, between the memory and the processor, etc.) will likely soon be performed in the optical domain. Therefore, there is a rapidly growing need to find new physical mechanisms that would improve our ability to manipulate light. In the quest for the optimal solution, photonic crystals (first invented

in 1987) have recently emerged as an exceptionally promising platform.

Photonic crystals (PhCs) are artificially created materials in which index of refraction varies periodically between high index regions, and low index regions. Such an environment presents to photons what a periodic crystalline potential of a semi-conductor presents to electrons. In particular, under proper conditions, a complete photonic bandgap opens: light for any frequency within the photonic bandgap is prohibited from propagation in any direction inside a PhC. Because of these similarities, PhCs are sometimes called "semiconductors for photons". Since semiconductors enabled integration of electronics, PhCs are thought to be the most promising candidate to implement integrated optics. PhCs offer unprecedented opportunities for molding the flow of light, so geometrical properties of PhC devices can dramatically enhance optical interactions of interest. For example, preliminary nonlinear PhC all-optical switches have been built that are of sub-micron size, an order of magnitude faster than transistors used in commercial electronics today, while consuming only two orders of magnitude more energy per logic operation. Moreover, PhC designs that could enable nonlinear interaction even between single photons have been proposed. Nonlinear PhCs are thus destined to dramatically change the view that optical nonlinearities are too weak to use for signal processing.

In the years that will follow, one should expect optics solutions to keep penetrating deeper and deeper into electronic designs, and PhCs will play a major role in making this possible: information processing of the near future will thus likely be performed by hybrid electronic and optical designs, with optics playing an ever-increasingly important role.

Upcoming Meetings

CROATIAN GENETIC SOCIETY
3rd CONGRESS OF CROATIAN GENETICISTS
with international participation

Primošten, Croatia
June 6-9, 2010

FIRST ANNOUNCEMENT



Sponsored by:
Ministry of Science, Education and Sports
Faculty of Food Technology and Biotechnology,
Zagreb

Under the Auspices of:
The Croatian Academy of Science and Arts
The Croatian Academy of Engineering

For further information contact
the Organizing Committee

Please send your registration to:
Third Congress of Croatian Geneticists
Prof. Jasna Franekić, Ph.D.
Faculty of Food Technology and Biotechnology
Pierottijeva 6, 10000 Zagreb
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Hrvatsko genetičko društvo
Croatian Genetic Society
www.genetika.hr



ORGANIZIRAJU
ZNAJSTVENO-STRUČNI SKUP
s međunarodnim sudjelovanjem



**TEHNOLOGIJE
ZBRINJAVANJA
OTPADA I ZAŠTITE TLA**

18. - 21. listopada 2009.
Hotel "Funimation"
Hotel "Donat"
Borik, Zadar

CILJ SKUPA

Od ovog znanstveno-stručnog skupa očekuju se ocjene stanja i mogućnosti te smjernice poželjnih, gospodarski, socijalno i ekološki održivih, a u praksi provodljivih tehnoloških rješenja zbrinjavanja otpada, koja uključuju zaštitu tla i svih članova „ekološke trijade“. Ovaj Skup Hrvatsku približava uvrštavanju među poželjne pripadnike europske zajednice naroda i pažnje vrijednog gospodarskog partnera, čiji će se glas čuti i uvažavati u okviru zajednice naroda koju danas čini EU.

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*International collaboration***Agreement signed between HATZ and Austrian Academy of Sciences****AGREEMENT
ON
CO-OPERATION**

between the
Croatian Academy of Engineering
and the
Austrian Academy of Sciences

Article 1

The *Croatian Academy of Engineering* and the *Austrian Academy of Sciences*, called "Parties" in the following, agree to foster the collaboration of scientists/scholars in all disciplines represented in the mentioned Academies.

Article 2

It is intended to make it possible for scientists/scholars of both Parties to become acquainted with current research projects in the other country particularly through the regular exchange of published reports, proceedings, newsletters and other publications as well as of information about existing joint projects or colloquia.

Article 3

Where financially possible, the two Parties will initiate or encourage common research projects and continue projects already in progress.

Article 4

Users of archives, libraries and similar institutions can avail themselves of the good offices of both Parties.

Article 5

Both Parties shall endeavour to ensure regular meetings of competent members and responsible co-workers to discuss the progress of their collaboration, if possible, not less than every two years.

Article 6

Visits shall be arranged exclusively on the basis of invitations by the hosting Academy. The participation in conferences, congresses, seminars, symposia, workshops, and other scientific bi-and multilateral events will be subject to funding under this Agreement only in case these initiatives are organized by one of the Parties.

Article 7

The hosting Academy shall be provided with documentation about guests no later than two months before the planned visit. The content of this documentation is set out in Annex I, attached.

Article 8

All collaborative activities will be carried out following the provisions specified in Annex I to this Agreement.

Article 9

On the basis of the present Agreement,
a) The sending Party provides:
- return travel costs to the seat of the receiving Academy;
b) The receiving Party provides:
- accommodation;
- a daily subsistence allowance to cover food, local transport and other incidental expenses;
- travel costs within the host country, in accordance with the agreed scientific working programme;
- personal insurance in case of sudden illness or an accident.

Article 10

Persons invited within this Agreement receive as a basic principle no honorary for lectures, reports or other scientific activities.

Article 11

Reports on the research visits carried out within this Agreement shall be put forward to both Parties.

Article 12

Any intellectual property and other rights arising from joint research work carried out within this Agreement shall be considered as joint property of both Parties.

Article 13

The terms of this Agreement may be amended in writing by mutual consent of both Parties. Each amendment shall form an integral part of the Agreement and shall be annexed to it.

Article 14

This Agreement will come into force on the day of its signing by both Parties and shall be valid for a period of 4 years, automatically renewable for a same period, unless terminated by either Party giving at least six months prior notice in writing to the other Party. Such termination shall, however, not affect collaborative activities already agreed.

Article 15

This Agreement was signed in Vienna on *June 18th* 2009 in two English copies, both being equally valid.

ON BEHALF OF THE
CROATIAN ACADEMY OF
ENGINEERING

ON BEHALF OF THE
AUSTRIAN ACADEMY OF
SCIENCES

Z. Križevc
Prof. DR. Zlatko Križevc
(President of HATZ)

Peter Schuster
Prof. Dr. Peter Schuster
(President of AAS)

Stanko Tonković
Prof. Dr. Stanko Tonković
(Vice-president of HATZ)

Herwig Friesinger
Prof. Dr. Herwig Friesinger
(Secretary General of AAS)

Zagreb, June 23. 2009.



Meeting between HATZ and Austrian Academy of Sciences

Euro-CASE Board meeting n° 34

Paris, 12 May 2009



Euro-CASE

European Council of Applied Sciences, Technologies and Engineering

Grand palais des Champs Elysées – Porte C – Avenue Franklin D. Roosevelt
75008 Paris - France

Tel: +33 1 53 59 53 40 - mail@euro-case.org - www.euro-case.org

Euro-CASE Board meeting n° 34
Paris, 12 May 2009, 10.30-14.00

The National Academy of Technologies of France - NATF
Grand Palais des Champs Elysées – Room Drac
Avenue Franklin D Roosevelt 75008 Paris

Present

Mr Finbar Callanan (IE)	
Mr Pere Brunet Crosa (ES)	
Mr Keith Davis (UK)	
Prof. René Dändliker (CH)	
Prof. Antonio Falcão (PT)	
Dr Ainomaija Haarla (FI)	
Dr Milos Hayer (CZ)	
Prof. Rolf Hügli (CH)	
Mr Bruno Jarry (FR)	Secretary General
Mr Hein Johnson (NO)	
Prof. Zlatko Kniewald (HR)	
Prof. Reiner Kopp (DE)	Vice Chairman
Mr Konstantinos Kremalis (EL)	
Ir Hendrik Kuiken (NL)	Treasurer
Prof. Borut Mavko (SI)	
Prof. Manuel Marquez Balin (ES)	
Mr Shane McHugh (UK)	
Prof. Per Ödling (SE)	
Prof. Kurt Richter (AT)	
Mr Peter Saraga (UK)	
Mr Lasse Skovby Rasmussen (DK)	
Ms Katja Thierjung (DE)	
Prof. Stanko Tonkovic (HR)	
Prof. Lena Treschow Torell (SE)	Chairman
Mr Christos Tsatsanifos (EL)	
Prof. Nicolae Vasile (RO)	
Prof. Petr Zuna (CZ)	

Apologies

Italian Council of Applied Science and Engineering
Hungarian Academy of Engineering

In attendance

Ms Nadia Pipunic Minutes Secretary

3.2. **Associate Membership.** Academies from states on the European Union's List of Candidate Countries may apply for Associate Membership of Euro-CASE providing that they meet the criteria in articles 3.1.1 to 3.1.5. Associate Members pay a reduced annual subscription to be decided by the Euro-CASE Board, 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 or after 3 complete years as Associate Member of Euro-CASE if its parent state is still not member of the European Union.



Euro-CASE

European Council of Applied Sciences, Technologies and Engineering

Grand Palais des Champs Elysées – Avenue Franklin D Roosevelt - 75008 Paris - France

Tel: +33 1 53 59 53 40 – mail@euro-case.org - www.euro-case.org

Euro-CASE Board meeting n° 34
Paris, 12 May 2009, 10.30.00-14.00

The National Academy of Technologies of France - NATF
Grand Palais des Champs Elysées – Room Drac
Avenue Franklin D Roosevelt 75008 Paris

AGENDA

1. Minutes of last meeting, London, 4 November 2008

2. Euro-CASE finance

- 2.1. Accounts to 31 December 2008 and Budget 2008
- 2.2. Accounts to 31 March 2009 and Budget 2009
- 2.3. Euro-CASE Reserve Fund
- 2.4. Financial audit ordered by the European Commission

3. The Euro-CASE Executive Committee

4. Full membership of HATZ (HR)

5. European Institute of Technologies

6. Euro-CASE vision

7. The Euro-CASE Annual Conference

- 7.1. The 2009 Euro-CASE Annual Conference
- 7.2. The 2010 Euro-CASE Annual Conference
- 7.3. The 2011 Euro-CASE Annual Conference

8. National Academy of Engineering, Frontiers of Engineering

9. Euro-CASE activities

- 9.1. Euro-CASE Platform on Energy and Environment (BACAS)
- 9.2. Euro-CASE Platform on Engineering Education (acatech)
- 9.3. Euro-CASE Platform on Transport and Mobility (NATF)
- 9.4. Euro-CASE Platform on Security and Safety (NTVA)

10. Next meetings

11. Any Other Business

Paris, 23.04.2009

4. Full membership of HATZ (HR)

Lena Treschow Torell reminds the difference between the statutes of full and associate member.

She reads out the articles of "Articles of Association" to be amended or concerned by this proposal.

After some discussions, the proposed updated version of "Articles of Association" is approved.

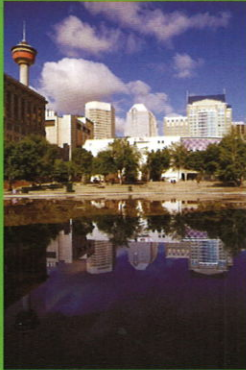
HATZ becomes a full member academy of Euro-CASE from 12 May 2009.

Prof. Kniewald thanks the Euro-CASE Board members and confirms that it is a great honour for HATZ to become a full member of Euro-CASE.

CAETS 2009 CALGARY

18th Convocation of the International Council
of Academies of Engineering and Technological Sciences

**“Our Heritage of Natural Resources -
Management and Sustainability”**



July 13 - 17, 2009

The Westin Calgary Hotel - Calgary, Alberta, Canada

The Canadian Academy of Engineering



www.acad-eng-gen.ca

PROGRAM SESSIONS

The following topics will be addressed:

WATER

Today the availability and quality of water are approaching a crisis of global proportions. The World Water Council notes that the world population tripled last century, while the use of renewable water grew six-fold. The population is forecast to grow a further 40 to 50 percent over the next 50 years. This, coupled with increasing industrialization and urbanization, will cause the demand for water to spiral. Today, 1.1 billion people lack access to safe drinking water and 2.6 billion people lack adequate sanitation. Even in Canada and Alberta, water is becoming a critical issue, due to population growth, increasing personal water use, expanded agriculture and water-intensive industries, changing weather patterns, and changes in atmospheric water vapour from human activities. Progress on water issues depends on a better understanding of the issues through R&D and the innovative applications of knowledge from the social and natural sciences as well as technology. An integrated approach is needed to ensure the sustainable and equitable use of water. These innovative actions are based on fundamental changes in our attitudes towards water use, changes in regulation and legislation, and the application of new technologies.

ENERGY

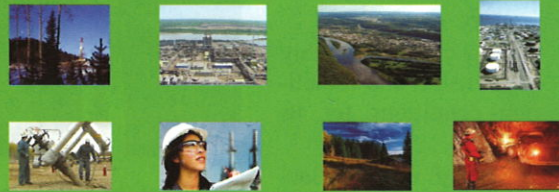
Today the world seems to have an insatiable appetite for energy. The efficient functioning of our society is dependent upon adequate supplies of energy to satisfy the needs of stationary power generation, transportation systems and personal power needs. Humanity is faced with two great challenges in the energy sector. Our prosperity is largely dependent upon hydro-carbon based energy sector, reserves are finite, and use is contributing in a significant way to climate change. Technology offers solutions to the emerging energy dilemma. Alternate and renewable approaches to energy generation are being developed and new approaches are available to the use of traditional non-renewable resources. As we go forward new perspectives are needed on the management of energy and the use of scarce resources to meet our future energy needs. Meaningful shifts are needed that greatly reduce our dependence on fossil fuels and that foster the creation of clean and sustainable sources of energy for the future.

MINING AND MINERALS

Canada's North holds vast mineral reserves that have the potential of meeting future national and global needs. The North, however, is an environmentally sensitive and up until recently largely inaccessible. The effects of climate change are most evident in Canada's North with significant increases in temperature forecast for the coming decades. Warming will open up previously ice-blocked water ways and reduce the inhospitable nature of the climate. Mineral recovery from Canada's Arctic region will need to be carried out with exceptional care. New technologies and approaches to resource extraction will be required so that these activities do not adversely affect the local environment thereby contributing to the demise of an ecostructure that is clearly being highly stressed. The Mining and Minerals sector will be challenged to develop innovative solutions to harvesting the resources of Canada's North.

FORESTS

From engineering or an economic perspective, forests are a valuable renewable source of building materials, paper products, energy and chemicals. Canada has 402 million hectares of forest and other wooded land, representing 10% of the world's forest cover and 30% of the world's boreal forest. As one of the largest industrial employers in Canada, the forest products industry is a cornerstone of the economy, sustaining over 320 communities, supporting about 800,000 direct and indirect jobs, from coast to coast—almost 5% of all jobs in Canada, and it is one of the nation's largest exporters, shipping over \$40 billion of goods to markets around the world. As concerns increase about the depletion of non-renewable resources, renewed interest is being shown in the forest bio-refinery as a renewable, carbon-neutral source of fuels and chemicals that does not compete directly with food production. Beyond their economic impact, forests serve humanity in other important ways: as a habitat for wildlife, as a large chemical reactor that consumes carbon-dioxide, gives off oxygen, regulates our climate, and as an area of spiritual, aesthetic and recreational value. “Renewable” must not be confused with “inexhaustible”. Throughout our history, we have seen local forest ecosystems collapse from overuse, along with it the societies that depended on them. We also have excellent examples of sustainable forest management in densely populated regions. In this meeting we wish to address the challenges of sustainable resource management as the forest industry takes on a new role of becoming a supplier of renewable energy and chemicals.



CAETS Week in Calgary - July 13 to 17, 2009

Monday: CAETS Executive Committee and Board Meetings
Tuesday: CAETS Convocation begins, evening welcoming reception
Wednesday: CAETS Convocation and Convocation Dinner
Thursday: CAETS Convocation concludes, technical tour planned in the afternoon, CAETS Council Dinner
Friday: CAETS Council Meeting and conclusion

Come Experience Calgary. Nestled in the foothills of Canada's Rocky Mountains, Calgary is a place where visitors come to explore the heritage of the Canadian West. This safe, clean and vibrant city offers the best of all worlds: a cosmopolitan city of over 1 million people and breathtaking outdoor adventure in pristine wilderness. Visitors are always impressed with Calgary's cosmopolitan and legendary western hospitality, as well as a tantalizing array of pre- and post-meeting outdoor adventures in the spectacular Canadian Rockies, only an hour's drive from the city's centre.

We hope to see you in Calgary - July 13 to July 17, 2009

Arrive early and enjoy the Calgary Stampede (July 3 - 12, 2009)
or hit the links at the Kananaskis Golf Course.



Some photos provided courtesy of Tourism Calgary

“Our Heritage of Natural Resources – Management and Sustainability”

The 2009 CAETS Convocation will address the grand challenges associated with the management and sustainability of natural resources. Canada is a country whose prosperity since its early years relied to a significant extent on the development of its abundant natural resource base. Early settlement was driven by the fur trade. In the 1800's forestry was dominant, and as the country moved into the 20th century, mining and minerals became increasingly a part of the country's resource based economy. Canada's resource base today is extensive and includes significant quantities of oil and gas, fresh water, and forest and mineral reserves. The recovery and utilization of these resources has spawned leading Canadian capability in the resource sector, which is recognized world-wide.

The challenges facing the resource sector in Canada are evolving quickly as a result of both global and local pressures. Demand threatens to outstrip supply in many areas, exploration, extraction, refinement, and utilization are contributors to greenhouse gases and climate change, and resource activity is increasingly impacting societal priorities in both positive and detrimental ways.

New approaches are needed to managing both our national resources and the supply chains that they feed. We need to rethink how to address the use of our natural resources and how we can ensure that the needs of humanity are fulfilled over the very long term. A balance needs to be struck between economic gain to be derived from resource exploitation and utilization, and the environmental and societal implications. Sustainable development, stewardship, conservation, re-use, substitution and responsibility need to be factors to be considered when assessing the present and future management of our natural resource base.

The engineering challenges associated with management for sustainability are significant, and the solutions lie in an integrated approach that brings together the needs of society, the policies to address these needs and the appropriate technology to bring about new and innovative approaches to resource development and utilization.

The 2009 CAETS Convocation will examine the new reality in natural resource management. The Convocation theme is “Our Heritage of Natural Resources – Management and Sustainability”. The Convocation will help define the transitions to sustainable management and environmental stewardship in the resource sector and the role for engineering and technology in these transitions. It will examine the interdependencies in the sector and provide a forum for the discussion and elaboration of integrated views for resource management. We hope to bring forward emerging plans and strategies that hold promise for sustaining a resource base that will be able to meet the needs of world for a long time to come. With rapidly depleting natural resources (many of them are non-renewable), how do we harness the power of engineering to come up with alternative technologies and solutions.

The Convocation will begin with presentations from CAETS member academy experts on the greatest challenges facing the natural resource sector. These presentations will provide a general overview of the sector and set the scene for the rest of the Convocation. The remaining sessions will tackle the question of engineering leadership and solutions in the energy, minerals/mining, water management and forestry areas. The sessions will stress an integrated approach in two ways; first as it applies to the interdependencies among areas and second as it addresses stewardship, environmental responsibility, societal needs and technology. Energy needs will be a cross-cutting theme as we explore solutions that may include increased dependence on nuclear, hydrogen, fuel cells etc.

The world is experiencing rapid change as populations grow and develop. Engineers are well placed to lead and to provide a new vision for the future for resource management. CAETS will provide a global forum for the discussion of new and needed approaches to sustaining our natural resource heritage for present and future generations.

The Canadian Academy of Engineering is looking forward to welcoming its sister CAETS member academies to Calgary in July 2009.

24th Assembly of the HATZ

Agenda of the 24th Assembly of the HATZ held on March 14th, 2009:

1. Opening of the Assembly of the HATZ and establishing conditions for its work.
2. Appointing of the Election Committee for the election of Full and Associate Members, Collaborating Members, Members Emeriti and Correspondent Members of the HATZ.
3. Fashion show of historic costumes from the times of Marin Držić designed by the Department of Textile and Fashion Design of the Faculty of Textile Technology of the University of Zagreb and accompanied by the renaissance music.
4. Adoption of the 23rd Annual Assembly Protocol held on March 14th, 2008.
5. Adoption of the minutes of the meetings of the Presidency of the HATZ.
6. Adoption of the HATZ balance sheet for 2008.
7. Report of the President of the HATZ about the execution of the plan and the program of the HATZ in 2008 and in his two mandates from 2003 to 2009.
8. Ceremony of the presentation of the HATZ Awards for 2008:
 - a) Award to the Young Scientist "Vera Johanides" – laureates: Daniela Čačić-Kenjerić, Ph.D., Anica Hursa, Ph.D., Greta Krešić, Ph.D., Mario Vašak, Ph.D., Ana Vrsalović-Presečki, Ph.D.
 - b) Annual Award "Rikard Podhorsky" – laureates: Prof. Davor Bonefačić, Ph.D., Prof. Zvonko Dragčević, Ph.D., Prof. Branka Medved-Rogina, Ph.D., Dinko Mikulić, Ph.D.
 - c) Life Achievement Award "The Power of Knowledge" – laureate Prof. Juraj Božičević, Ph.D.
9. Promotion of the "Annual of the Croatian Academy of Engineering 2008".



Rector of the University of Zagreb, Prof. Aleksa Bjeliš, Ph.D. greeted the Assembly

10. Granting clearance to:
 - a) the President of the HATZ Prof. Emeritus Zlatko Kniewald, Vice Presidents Prof. Branka Zovko-Cihlar, Ph.D. and Prof. Stanko Tonković, Ph.D., as well as Secretary-General Goran Granić, Ph.D. for the period from 2005 to 2009,
 - b) the present Governing Board of the HATZ consisting of: the President of the HATZ, Vice Presidents of the HATZ, Secretary-General of the HATZ and former President of the HATZ,
 - c) the present secretaries of Departments, chairpersons of Committees and members of the Committees from 2005 to 2009.
11. Proclamation of the newly elected:
 - a) President of the HATZ for the mandate period from 2009 to 2013 – Prof. Stanko Tonković, Ph.D.
 - b) Vice President of the HATZ for the mandate period from 2009 to 2013 – Prof. Miljenko Lapaine, Ph.D.
 - c) Vice President of the HATZ for the mandate period from 2009 to 2013 – Prof. Vilko Žiljak, Ph.D.
 - d) Secretary-General of the HATZ for the mandate period from 2009 to 2013 – Goran Granić, Ph.D.
12. Proclamation of the new Governing Board consisting of:
 - a) the President of the HATZ
 - b) the Vice President of the HATZ
 - c) the Vice President of the HATZ
 - d) the Secretary-General of the HATZ
 - e) the former President of the HATZ
13. Proclamation of new secretaries of Departments and their vice-secretaries for the next mandate period.
14. Proclamation of the new chairpersons of Committees and members of the Committees for the next mandate.
15. Ending of membership in the HATZ on personal request.
16. Report of the Election Committee and promotion of new Full and Associate Members, Collaborating Members, Members Emeriti and Correspondent Members of the HATZ, as well as allocation of appointments.
17. Program of the HATZ for 2009 with the budget proposal.
18. Other issues.



From the Session of the Assembly

New Governing Board of the HATZ

At the 24th Assembly the Governing Board of the HATZ has been elected for the period from 2009 to 2013 starting from July 1st, 2009 and consisting of:



1. the President of the HATZ – Prof. Stanko Tonković, Ph.D.



2. the Vice President of the HATZ – Prof. Miljenko Lapaine, Ph.D.



3. the Vice President of the HATZ – Prof. Vilko Žiljak, Ph.D.



4. the Secretary-General of the HATZ – Goran Granić, Ph.D.



5. the Former President of the HATZ – Prof. Emeritus Zlatko Kniewald

New Presidency of the HATZ



1. President of the HATZ – Prof. Stanko Tonković, Ph.D.



2. Vice President of the HATZ and Head of the Center for Geoinformation and Cartography of the HATZ – Prof. Miljenko Lapaine, Ph.D.



3. Vice President of the HATZ and Head of the Center for Graphical Engineering of the HATZ – Prof. Vilko Žiljak, Ph.D.



4. Secretary-General of the HATZ – Goran Granić, Ph.D.



5. Former President of the HATZ, President of the Governing Board of the Foundation of the Croatian Academy of Engineering and Head of the Biotechnical Center of the HATZ – Prof. Emeritus Zlatko Kniewald



6. Secretary of the Department of Systems and Cybernetics of the HATZ and Chairperson of the Committee for Ethics of the HATZ – Prof. Franjo Jović, Ph.D.



7. Secretary of the Department of Architecture and Urban Planning of the HATZ – Prof. Tihomir Jukić, Ph.D.



8. Secretary of the Department for Information Systems of the HATZ – Prof. Krešimir Fertalj, Ph.D.



9. Secretary of the Department of Communication Systems of the HATZ – Prof. Sonja Grgić, Ph.D.



10. Secretary of the Department of Power Systems of the HATZ – Prof. Nikola Čavlina, Ph.D.



11. Secretary of the Department of Transport of the HATZ – Prof. Vesna Cerovac, Ph.D.



12. Secretary of the Department of Civil Engineering and Geodesy of the HATZ – Prof. Damir Medak, Ph.D.



13. Secretary of the Department of Mechanical Engineering and Naval Architecture of the HATZ – Prof. Vladimir Medica, Ph.D.



14. Secretary of the Department of Chemical Engineering of the HATZ – Prof. Ratimir Žanetić, Ph.D.



15. Secretary of the Department of Electrical Engineering and Electronics of the HATZ – Prof. Zdravko Hebel, Ph.D.



16. Secretary of the Department of Bioprocess Engineering of the HATZ – Prof. Jasna Franekić Čolić, Ph.D.



17. Secretary of the Department of Graphical Engineering of the HATZ – Prof. Miroslav Gojo, Ph.D.



18. Secretary of the Department of Mining and Metallurgy of the HATZ – Prof. Josip Črnko, Ph.D.



19. Secretary of the Department of Textile Technology of the HATZ – Prof. Dubravko Rogale, Ph.D.



20. Chairperson of the Committee for Promotion and Regional Cooperation of the HATZ – Prof. Jure Radić, Ph.D.



21. Chairperson of the Committee for International Cooperation of the HATZ – Prof. Vladimir Medved, Ph.D.



22. Chairperson of the Committee for Awards of the HATZ and Head of the Center for Environment Protection and Development of Sustainable Technologies of the HATZ – Prof. Đurđa Vasić-Rački, Ph.D.



23. Head of the Center for Lifelong Education of the HATZ – Prof. Tomislav Filetin, Ph.D.



24. Head of the Center for Development Studies and Projects of the HATZ – Prof. Juraj Božičević, Ph.D.

Short CVs of the HATZ Awards Laureates for 2008

Life Award "The Power of Knowledge"



Juraj Božičević was born in Vrbovsko in 1935. He has graduated from the Faculty of Electrical Engineering of the University of Zagreb and also obtained his doctor's degree there. After graduation he has worked at the Faculty of Electrical Engineering and from 1963 at the Faculty of Technology of the University of Zagreb, Department of Oil and Metallurgy in Sisak. From 1974 he has been working at the nowadays Faculty of Chemical Engineering and Technology of the University of Zagreb as a longtime head of Department of Measurements and Process Control. As a scientist and expert he has conducted numerous national and international projects, published a series of books, edited a lot of conference proceedings, wrote numerous articles and organized and participated in a number of scientific conferences. He has been the president of JUREMA (1974-1980) which he has managed to enroll into the international association IMEKO. He is one of the founders and second president of the Croatian Academy of Engineering. He is also Honorary Member of the Academy of Medical Sciences of Croatia. In 2002 he received Croatian State Award for Life Achievement for his complete scientific work in the field of technical sciences. From the independence of Croatia he has been Deputy Minister for Higher Education, president of the Managing Board of Croatian Accreditation Agency, State Secretary for Higher Education and Technology at the Ministry of Science, Education and Sports of the Republic of Croatia, member of the Board of Governors of the Ruđer Bošković Institute and president of the Regional Technology Council. As the president of the Regional Technology Council he has coordinated and implemented a new program of supporting academic entrepreneurship – TEST, advocating the promotion of innovative culture and team, interdisciplinary problem solving. As one of the founders of the Academy and president of the HATZ he has contributed to the full synergy of all technical disciplines and the reputation of the HATZ by his inventive projects and his work in the first 10 years of the Croatian Academy of Engineering.

Annual Award "Rikard Podhorsky"



Davor Bonefačić was born in Zagreb in 1968. He graduated from the Faculty of Electrical Engineering and Computing of the University of Zagreb in 1993 where he also obtained his master's degree in 1996 and his doctor's degree in 2000. Since 1993 he has been working in the Department for Radio Communications and Microwave Engineering of the Faculty of Electrical Engineering and Computing of the University of Zagreb. Today he is Associate Professor holding the scientific title of senior scientific associate. Together with his extensive lecturing he is occupied with measuring and evaluation of the level of electromagnetic fields and the radiation of radar systems with the aim of protecting people from electromagnetic radiation. His basic scientific research interests are active integrated antennas and antenna arrays, intelligent antennas, planar wideband antennas for mobile communications and active and passive microwave circuits. In the past five years he published 8 works in CC/SCI journals and participated in 13 international scientific conferences. In the last five years he has devoted himself to the promotion of the cooperation with the industry in the field of electromagnetic compatibility and protection of people from the electromagnetic radiation by basic stations of mobile

communications and radar systems. In that field he has made 14 expert works and 15 elaborations ordered by T-mobile Croatia, VIPnet, Ministry of Defense of the Republic of Croatia and others.



Zvonko Dragčević was born in Zagreb in 1946. He graduated from the Faculty of Technology of the University of Zagreb in 1971, then obtained his master's degree there in 1976 and defended his doctor's thesis in 1981. He became Scientific Assistant in 1973, Assistant Professor in 1984, Associate Professor in 1991 and Full Professor in 1999. He was Vice Dean for Education (1985-87) and (1990-1995) and head of the Department of Clothing Technology. He is head and coordinator of the scientific research cooperation of the Ministry of Defense of the Republic of Croatia and international textile/clothing section DAAAM International from Vienna, Austria. For his work he received the Medal of DAAAM International in 2001. He is team leader of the manufacture of ceremonial academic robes for the University of Zagreb, as well as the design and manufacture of chasubles for liturgical part of the commemoration at the field of Bleiburg. He is the author of many scientific and expert works and patents in homeland and abroad. In 2007 he received VID I – Innovation Award, the first prize Tesla's Golden Egg for innovations in high technologies. He is president of the Organizing Committee of the widely renowned symposia "Magic World of Textiles" attended regularly by scientists from 25-30 countries. From 1989 he has been a member of the editorial board of the journal "Tekstil", and from 2007 editor-in-chief.



Branka Medved-Rogina was born in Zagreb in 1958. She has graduated from the Faculty of Electrical Engineering in Zagreb and also obtained her doctorate there. From 1983 she has been working at the Ruđer Bošković Institute on scientific research and development projects, now holding the title of Senior Scientific Associate as the head of the Laboratory for Stochastic Signals and Processes Research. From 2002 she has been lecturing a group of optoelectronic subjects at the undergraduate study of the Faculty of Electrical Engineering and Computing as Associate Professor. Her scientific work is focused on the research of measurement techniques and signal and data processing from various natural and technical sources, as well as to the research and modeling of complex conditions and processes. High resolution measurements in time series and ultra fast and reliable circuit technologies have become her priorities in the last few years. She has successfully cooperated with the industry in the last five years on several projects, studies of development and prototype making including sophisticated testing of highly complex electronic circuit systems. She is the author of more than 60 papers published in journals and conference proceedings of international and national scientific conferences.



Dinko Mikulić was born in Proložac near Imotski in 1951. He has finished his studies in Zagreb. He obtained his doctor's degree at the Faculty of Mechanical Engineering and Naval Architecture of the University of Zagreb. He is a volunteer of the Croatian War of Independence. He has worked at the Ministry of Defense of the Republic of Croatia. He has been awarded the Homeland War Memorial Medal. On the Faculty of Mechanical Engineering and

Naval Architecture of the University of Zagreb he has been elected Assistant Professor for technical sciences. In 2004 he was elected Collaborating Member of the Croatian Academy of Engineering (HATZ) in the Department of Systems and Cybernetics. He is standing collaborator of Brodarski institut (Naval Institute) and the firm DOK-ING in Zagreb. He is the author of larger number of scientific and expert works published in homeland and international journals. He has taken part in international conferences for special vehicles and machinery. He is the author of the books *Civil Engineering Machinery and Demining Techniques*. He has been president of the Scientific Council of the Croatian Demining Center. In 2005 at the international conference for special vehicles ISTVS he received prestigious recognition for the best work in the category of the development of new products, *Development of Heavy Demining Machine*.

Award to the Young Scientist "Vera Johanides"



Daniela Čačić-Kenjerić was born in Virovitica on November 13th, 1976. She graduated food technology from the Faculty of Food Technology of the J. J. Strossmayer University of Osijek in 2000. At the Faculty of Food Technology and Biotechnology of the University in Zagreb she finished her postgraduate doctoral study of food

technology and obtained her doctor's degree in 2004. As Scientific Assistant she started working at the Faculty of Food Technology in Osijek in September 2000 and in November 2005 she was elected Assistant Professor. She has been lecturing several courses such as Ecology, Quality Control in Food Industry, Food Science, Functional Food and Food Additives and Instrumental Methods I. She has taken active part in several scientific and technological projects. Her scientific research is progressing in two directions: nutrition research as to the input of fat and fatty acids, dietary fibers, minerals and vitamins, as well as quality control of food. She has published 9 works in international journals and 10 works in international conference proceedings. She has taken part in 3 national and 20 international scientific conferences.



Anica Hursa was born in 1975. She graduated from the Faculty of Textile Technology of the University of Zagreb in 1996 where she also obtained her master's degree in 2000 and her doctor's degree in 2008. She is Scientific Associate in technical sciences in the area of textile technology. The field of her scientific work is numerical

modeling of impaired spots on garments and objective evaluation of physical and mechanical properties of fabrics. She introduces modern engineering methods of numerical analysis and optimization in technical and technological procedures of garment design. Newly developed procedures and programs enable precise forecasting, designing and optimal formation of reinforcements on mechanically stressed critical spots. She has completed her research on modern measuring equipment at the Faculty of Mechanical Engineering of the University of Maribor, Slovenia and Technical College for Light Industry in Budapest, Hungary where she has been on scientific specialization. Seven of her scientific works have been included in SCI-Expanded database, nine of them in SCOPUS and five in ISI Proceedings. She is a laureate of the FESTO Concern Award to the young scientist for a high scientific level of research and presentation of the work. She has been a member of the Organizing Committee and technical editor of the Book of Proceedings at four notable international congresses in the field of textile technology.



Greta Krešić (Osijek, 1974) has graduated from the Faculty of Food Technology and Biotechnology of the University of Zagreb. There she also obtained her doctor's degree in 2005. Today she is working as Associate Professor at the Faculty of Tourism and Hospitality Management in Opatija of the University of Rijeka. She holds the

title of scientific associate. Areas of her scientific activities are partly directed to the development and application of new techniques in food processing and partly to the promotion and profiling of specific tourist supply. By both segments of her scientific interest she is making a large contribution to the development of biotechnical sciences in the field of food technology. She is also scientifically dealing with development of products which, together with their nutritional value, will also have potentially positive effects on human health. In the last 5 years she has published ten works in internationally indexed journals out of which seven in CC/SCI and three quoted in CAB abstract. She has taken active part in eight international scientific conferences and in one of them she has been a member of the Scientific Committee. In her educational work at the Faculty she has proposed and created programs for four new courses. She participates in two scientific and research projects and one technological project.



Mario Vašak was born in Bjelovar in 1980. He graduated from the Faculty of Electrical Engineering and Computing of the University of Zagreb in 2003 and in 2007 defended his doctor's thesis for which he received several prominent recognitions. During his undergraduate study he has been awarded a scholarship for remarkably gifted students.


Since 2003 he has been working as Junior Researcher and now as Senior Scientific Assistant at the Department of Control and Computer Engineering of the Faculty of Electrical Engineering and Computing in Zagreb. Main fields of his scientific interest are optimal control of hybrid systems with applications in automotive systems and electromotor drives, as well as computer geometry. On several occasions he has stayed at ETH Zurich for scientific specialization. He has published two papers in CC journals and 12 in international conferences. He is holding the title of scientific associate. On his own faculty he has participated in lecturing of several courses. Special emphasis should be put to his outstandingly successful work and contribution in the Swiss-Croatian project "Computationally Efficient Robust Model Predictive Control", where he introduced important improvements which simplified and optimized the control process.






Ana Vrsalović-Presečki was born in Split in 1975. She graduated from the Faculty of Chemical Engineering and Technology of the University of Zagreb in 1999 where she started working as Junior Researcher. She spent some time at the Institute for Biotechnology of the Research Center in Juelich, Germany for studies. In 2003 she defended her master's thesis and in 2006 her doctor's thesis. She is holding the title of scientific associate. The field of her scientific interest is the application of engineering methodology in research and development of bioprocesses. She is dealing in particular with biotransformation catalyzed by the enzymes in entire cells of non-growing microorganisms. She is the associate of the project "Biocatalysts and Biotransformation". She is now the head of the Croatian-Slovene bilateral project. Results of her research have been published in 13 works out of which seven in journals indexed by CC and SCI databases. She has participated in 10 international conferences. She was the secretary of the Organizing Committee of the scientific conference "Technologies of Air Protection 2008". She is a member of the Croatian Society of Chemical Engineers and Technologists. She is very successful in the field of her scientific interest exerting significant influence on the development of biotechnology, especially industrial biotechnology.

New Members and Promoted Members of the HATZ


I. Department of Systems and Cybernetics

- 1)  **MARIN SOLJAČIĆ, Ph.D.** (Correspondent Member), was born on February 7th, 1974 in Zagreb. He finished MIOC (mathematical high school) in Zagreb upon which he got scholarship for his studies of physics and electrical engineering at MIT (USA) where he graduated from in 1996. In 1998 he obtained his master's degree (mentor [Frank Wilczek](#) – Nobel Prize in Physics in 2004) and in 2000 his doctor's degree both in physics at the Princeton University. He has also finished Pappalardo post-doctoral study at MIT and since 2005 he has been working at the Department of Physics at MIT.







II. Department of Information Systems


- 2)  **NIKOLA BOGUNOVIĆ, Ph.D.** (promoted into Full Member) was born on August 31st, 1944 in Varaždin. He went to primary school and high school in Zagreb where he graduated from in 1963. He graduated from the Faculty of Electrical Engineering in Zagreb in 1967, obtained there his master's degree in 1971 and his doctor's degree in 1984. He is working at the Ruđer Bošković Institute in Zagreb on instrumentation system design based on computers. During 1971 and 1972 he was at Culham Laboratory, UKAEA, Great Britain for specialization and from 1984 up to 1987 he was visiting professor at Vanderbilt University, USA.
- 3)  **SVEN LONČARIĆ, Ph.D.** (promoted into Associate Member) was born in 1961 in Zagreb where he finished primary school and high school for mathematics. He obtained his doctor's degree at the University of Cincinnati, USA in 1994. At the Faculty of Electrical Engineering and Computing in Zagreb he was elected Senior Scientific Assistant in 1994, Assistant Professor in 1996 and Associate Professor in 2001. Since autumn 2001 he has been working as Assistant Professor at the New Jersey Institute of Technology, USA.
- 4)  **DINKO BEGUŠIĆ, Ph.D.** (Collaborating Member) was born on August 1st, 1960 in Split. He has finished primary and secondary schools in Split. In 1983 he graduated from the Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture of the University of Split. At the Faculty of Electrical Engineering in Zagreb he defended his master's thesis in 1988 and his doctor's thesis in 1992. He has been at Université Libre de Bruxelles and King's College in London for specialization.


III. Department of Communication Systems


- 5)  **SONJA GRGIĆ, Ph.D.** (born Bauer) (promoted into Full Member) is Full Professor at the Faculty of Electrical Engineering and Computing of the University of Zagreb where she graduated from in 1989, obtained her master's degree in 1992 and defended her doctor's thesis in 1996. Since 1989 she has been working there at the Department of Radiocommunications.

IV. Department of Power Systems


- 6)  **ŽELJKO BOGDAN, Ph.D.** (promoted into Full Member) is Full Professor at the Faculty of Mechanical Engineering and Naval Architecture of the University of Zagreb where he graduated from in 1973. He defended his master's thesis at the Tokohu University, Senda, Japan in 1980 the topic of which was heat transfer from a rotating disk. He defended his doctor's thesis at the Faculty of Machine Engineering and Naval Architecture of the University of Zagreb in 1987 the topic of which was process modeling in nuclear steam generator.
- 7)  **GORAN GRANIĆ, Ph.D.** (promoted into Full Member) was born on April 18th, 1950. He graduated from the Faculty of Electrical Engineering in Zagreb in 1972, obtained there his master's degree in 1976 and his doctor's degree in 1979. He is scientific adviser. From 1973 to 1987 he worked at Institut za elektroprivredu, and from 1987 to 1990 in ZEOH as director for development and member of the Managing Board for Development. From August 1990 he was general manager of HEP (Croatian Electricity Supplier) and in 1991 he returned to Institut za elektroprivredu. From 1992 to 1995 he was member of the Croatian Parliament in the House of Representatives and in 1995 he was elected first vice president of the House of Representatives. Since 2004 he has been the head of the Energy Institute Hrvoje Požar.
- 8)  **VLADIMIR MIKULIČIĆ, Ph.D.** (promoted into Full Member) is Full Professor at the Faculty of Electrical Engineering and Computing of the University of Zagreb where he graduated from in 1968, obtained his master's degree in 1975 and his doctor's degree in 1981 with the topics from the field of the reliability of electric power systems.
- 9)  **NIKOLA ČAVLINA, Ph.D.** (promoted into Associate Member) is Full Professor at the Faculty of Electrical Engineering and Computing of the University of Zagreb. He graduated from the Faculty of Electrical Engineering in Zagreb in 1974, obtained his master's degree in 1979 and defended his doctor's thesis in 1991.
- 10)  **NENAD DEBRECIN, Ph.D.** (promoted into Associate Member) is Full Professor at the Faculty of Electrical Engineering and Computing of the University of Zagreb. He graduated from the Faculty of Electrical Engineering in Zagreb in 1975, and obtained his master's degree in 1984. He obtained his doctor's degree at the Faculty of Electrical Engineering and Computing of the University of Zagreb in 1997.
- 11)  **SLAVKO KRAJCJAR, Ph.D.** (promoted into Associate Member) was born in Krajcar brijeg, the municipality of Žminj. He went to primary school in Sv. Petar u Šumi, and secondary in Pula. He graduated from the Faculty of Electrical Engineering in Zagreb (today the Faculty of Electrical Engineering and Computing) in 1973. He has then got a job as scientific assistant at the Department for Power Systems of the faculty. He obtained his master's degree in 1980 and his doctor's degree in 1988. He was elected Full Professor in Tenure in 2007.


- 12)  **VITOMIR KOMEN, Ph.D.** (Collaborating Member) was born in Rijeka in 1960. He finished his undergraduate study in 1981, obtained his master's degree in 1993 and his doctor's degree in 2007 at the Faculty of Electrical Engineering and Computing of the University of Zagreb. Since 1981 he has been working in HEP – Elektroprimorje Rijeka.

- 13)  **ALFREDO VIŠKOVIĆ, Ph.D.** (promoted into Collaborating Member) has obtained his doctor's degree at the Faculty of Electrical Engineering and Computing of the University of Zagreb and has also finished his doctoral study of information sciences at the Faculty of Philosophy in Zagreb. Since 2007 he has been manager of the Sector for Strategic Planning and Corporate Development of HEP (Croatian Electricity Supplier).


- 14)  **MLADEN ZELJKO, Ph.D.** (Collaborating Member) was born on January 11th, 1956. He obtained his master's degree at the Faculty of Electrical Engineering in Zagreb in 1988 and his doctor's degree in 2003. He holds the scientific title of Scientific Associate. In 2006 he was elected Assistant Professor.


V. Department of Transport


- 15)  **NENAD DUŽMOVIĆ, Ph.D.** (promoted into Associate Member) was born in Zagreb in 1942. He graduated from the Faculty of Mechanical Engineering and Naval Architecture in Zagreb in 1967. He obtained his doctor's degree there in 1996. He was elected Associate Professor in the field of mechanical engineering in 2004. He is working at the Department for Motors and Transport Vehicles.

- 16)  **IVAN MILOŠ, Ph.D.** (Collaborating Member) was born in Sinj in 1948. He obtained his master's degree at the Faculty of Economy in Rijeka in 1983. He defended his doctor's thesis entitled "Information System in the Role of Modern Transport Technology" at the Faculty of Maritime Studies in Rijeka in 1989. He was elected Professor of technical sciences in the field of transport technology in 2003.


VI. Department of Civil Engineering and Geodesy


- 17)  **ANTE MIHANOVIĆ, Ph.D.** (promoted into Full Member) was born in Donje Sitno near Split in 1948. He graduated from the Faculty of Civil Engineering in Zagreb in 1972, obtained there his master's degree in 1975 and his doctor's degree in 1981. He was working at the Faculty of Civil Engineering in Zagreb from 1972 to 1976 and at the Faculty of Civil Engineering in Split from 1976 to 2002. He has been Full Professor since 1996.


- 18)  **DAMIR MEDAK, Ph.D.** (promoted into Associate Member) was born in Dubrovnik in 1968. He graduated from the Faculty of Geodesy of the University of Zagreb in 1993. He obtained his doctor's degree at the Technical University in Vienna, Austria. He was elected Full Professor at the Faculty of Geodesy of the University of Zagreb in 2006.

- 19)  **MEHMED ČAUŠEVIĆ, Ph.D.** (promoted into Associate Member) was born in Brčko, Bosnia and Herzegovina in 1945. He graduated from the Faculty of Civil Engineering in Belgrade in 1969 and defended his master's thesis in 1973. At the University of Ljubljana he defended his doctor's thesis in


1977. He was elected Assistant Professor at the Faculty of Civil Engineering in Split in 1978 and Full Professor at the Faculty of Civil Engineering in Rijeka in 1991. He became Full Professor in Tenure in 1998.


- 20)  **BOŠKO PRIBIČEVIĆ, Ph.D.** (Collaborating Member) was born in Vrbovsko. He graduated from the Faculty of Geodesy of the University of Zagreb in 1986. He obtained his master's degree at the University of Ljubljana in 1999 and his doctor's degree in 2000. He is Associate Professor at the Faculty of Geodesy in Zagreb.


- 21)  **DARKO DUŽMOVIĆ, Ph.D.** (Collaborating Member) was born in Gospić in 1954. He graduated from the Faculty of Civil Engineering of the University of Zagreb in 1978 where he also obtained his master's degree in 1989 and his doctor's degree in 1996.


- 22)  **GORAN PUŽ, Ph.D.** (Collaborating Member) was born in Zagreb in 1966. He graduated from the Faculty of Civil Engineering of the University of Zagreb in 1990 where he also obtained his master's degree in 1996 and his doctor's degree in 2005. He was working at the Faculty of Civil Engineering in Zagreb as Junior Researcher, Scientific Assistant and Scientific Associate from 1991 to 2004. In Hrvatske autoceste he was manager of the Department for Development, Technical Regulations and Technology from 2004 to 2008. He has been working at Institut građevinarstva Hrvatske since 2009.


VII. Department of Mechanical Engineering and Naval Architecture


- 23)  **ŽELJKO DOMAZET, Ph.D.** (promoted into Full Member) was born in Split in 1954. He started working at the Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture in Split in 1981 as Scientific Assistant for the group of courses Elements of Machines. He defended his doctor's thesis at the Faculty of Mechanical Engineering and Naval Architecture in Zagreb in 1993 and in the same year he was elected Assistant Professor at the Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture in Split. He was elected Associate Professor in 1997, Full Professor in 2000 and Full Professor in Tenure in 2005.


- 24)  **JURICA SORIĆ, Ph.D.** (promoted into Full Member) was born in Trogir in 1954. He obtained his doctor's degree at the Faculty of Mechanical Engineering and Naval Architecture in Zagreb. He has taken his first job as engineer in the factory of generators Končar in Zagreb. Since 1980 he has been working at the Faculty of Mechanical Engineering and Naval Architecture as Scientific Assistant, since 1995 as Assistant Professor, as of 1998 as Associate Professor, since 2000 as Full Professor, and since 2005 as Full Professor in Tenure.

- 25)  **TONČI MIKAC, Ph.D.** (promoted into Associate Member) was born in Rijeka in 1955. He started working at the motor and tractor factory Torpedo in 1980. From 1984 to 1986 he was the head of Technical Organization and then Technical Manager of the tractor factory Torpedo. He defended his doctor's degree at the Technical Faculty of the University of Rijeka in 1994. Since 1991 he has been working at the Technical Faculty of the University of Rijeka as Scientific Assistant to Full Professor for several courses from the field of technology and organization of scientific fields.


- 26)  **MLADEN ŠERCER, Ph.D.** (promoted into Associate Member) was born in Zagreb in 1953. He started his career at the Faculty of Mechanical Engineering and Naval Architecture in Zagreb as Scientific Assistant in 1978 where he obtained his master's degree in 1984 and his doctor's degree in 1989. He was elected Full Professor in Tenure in 2006.


- 27)  **MILJENKO MATH, Ph.D.** (Collaborating Member) was born in Zagreb in 1949. At the Faculty of Mechanical Engineering and Naval Architecture in Zagreb he defended his doctor's thesis in 1990. He started his career as Scientific Assistant at the same faculty in February 1975. He was elected Assistant Professor in 1992, Associate Professor in 1997 and Full Professor in 2002.


- 28)  **TOMA UDILJAK, Ph.D.** (Collaborating Member) was born in Studenci, municipality of Imotski in 1955. At the Faculty of Mechanical Engineering and Naval Architecture in Zagreb he defended his doctor's thesis in 1996. Upon graduation he started working at the factory Jugoturbina in Karlovac in the Department of Research and Development. Since 1982 he has been working as Scientific Assistant at the Faculty of Mechanical Engineering and Naval Architecture in Zagreb. He was elected Senior Scientific Assistant in 1997, Assistant Professor in 2000, and Associate Professor in 2004.


- 29)  **ZDENKO TONKOVIĆ, Ph.D.** (Collaborating Member) was born in Sisak in 1966. He obtained his doctor's degree at the Faculty of Mechanical Engineering and Naval Architecture of the University of Zagreb in 1998 where he had started working as Junior Researcher in 1991. He was elected Assistant Professor in 2000 and Associate Professor in 2005.


VIII. Department of Chemical Engineering

- 30)  **ĐURĐA VASIĆ RAČKI, Ph.D.** (promoted into Full Member) is Full Professor of the Faculty of Chemical Engineering and Technology and leading scientist in the field of biotechnical sciences.


- 31)  **STANKA ZRNČEVIĆ, Ph.D.** (promoted into Full Member) is Full Professor of the Faculty of Chemical Engineering and Technology in the field of catalysis and catalytic processes.


- 32)  **ANDREA MOGUŠ MILANKOVIĆ, Ph.D.** (promoted into Associate Member) is scientific advisor of the Ruđer Bošković Institute in the field of inorganic materials, in particular inorganic glass with special structural characteristics and application.

- 33)  **SREĆKO TOMAS, Ph.D.** (promoted into Associate Member) is Full Professor of the Faculty of Food and Technology of the J. J. Strossmayer University in Osijek in the field of processed food engineering.


- 34)  **ANTUN GLASNOVIĆ, Ph.D.** (Collaborating Member) is Full Professor, scientific advisor and eminent lecturer of the Faculty of Chemical Engineering and Technology of the University of Zagreb. He was born on December 6th, 1948 and graduated from the Department of Chemical Tech-

nology of the Faculty of Technology (today the Faculty of Chemical Engineering and Technology of the University of Zagreb) in 1972. At the same faculty he obtained his master's degree in 1974 and his doctor's degree in chemical engineering in 1980. Since 1972 he has been working at the Department of Mechanical and Thermal Process Engineering as Scientific Assistant. In 1982 he was elected Assistant Professor, in 1992 Associate Professor and in 2003 Full Professor.


- 35)  **VESNA TOMAŠIĆ, Ph.D.** (Collaborating Member) is Associate Professor, senior scientific associate of the Faculty of Chemical Engineering and Technology of the University of Zagreb. She was born in 1964, graduated from the same faculty in 1990, obtained her master's degree in 1993 and her doctor's degree in technical sciences in the field of chemical engineering in 1999. She started working at the Department for Reaction Engineering and Catalysis of the same faculty as Junior Researcher in 1990, elected Assistant Professor in 2002 and Associate Professor in 2006.


- 36)  **DAMIR KRALJ, Ph.D.** (Collaborating Member) is Senior Scientific Advisor of Ruđer Bošković Institute in the field of inorganic materials, processes of deposition and crystallization. He was born in 1959, graduated from the Faculty of Chemical Engineering and Technology in 1983, obtained his master's degree in 1986 and his doctor's degree in chemical sciences in 1990.


IX. Department of Electrical Engineering and Electronics


- 37)  **KREŠIMIR MEŠTROVIĆ, Ph.D.** (Collaborating Member) was born in Zagreb in 1958. He graduated from the Faculty of Electrical Engineering and Computing in Zagreb in 1982, obtained his master's degree in 1988 and his doctor's degree in 2008. He is working in Končar – Institute for Electrical Engineering as head of Department and at the Technical College in Zagreb as head of Department.


X. Department of Bioprocess Engineering


- 38)  **JASNA FRANEKIĆ ČOLIĆ, Ph.D.** (promoted into Full Member) is Full Professor of the Faculty of Food Technology and Biotechnology of the University of Zagreb. She graduated from the Faculty of Science of the University of Zagreb in 1969, obtained her master's degree at the University of Zagreb School of Medicine in 1982 and obtained her doctor's degree at the Faculty of Science in Zagreb in 1987.

- 39)  **IVICA GRBAC, Ph.D.** (promoted into Associate Member) is Full Professor of the Faculty of Forestry of the University of Zagreb. He was born in 1955. He has been engaged in science since 1978. He was elected Scientific Assistant in the field of construction of products in 1985.

- 40)  **GORDANA KRALIK, Ph.D.** (Associate Member) is Full Professor of the Faculty of Agriculture of the University of Osijek. She graduated from the College of Agriculture in Osijek, finished her post-graduate study in Belgrade in 1974, and obtained a doctor's degree in technical sciences at the Faculty of Technology of the University of Zagreb in 1976, as well as another doctor's degree in biotechnical sciences at the Faculty of Agriculture in Osijek in 1985. Rector of the University J. J. Strossmayer in Osijek.


- 41)  **STJEPAN RISOVIĆ, Ph.D.** (promoted into Associate Member) is Associate Professor at the Faculty of Forestry of the University of Zagreb, Institute of Mathematics and Basic Technology of the Department of Wood Technology. He graduated from the Faculty of Mechanical Engineering and Naval Architecture in Zagreb in 1981.


- 42)  **PREDRAG HORVAT, Ph.D.** (Collaborating Member) is Full Professor at the Faculty of Food Technology and Biotechnology of the University of Zagreb. He studied biotechnology and graduated from the Faculty of Technology of the University of Zagreb in 1976. He obtained his master's degree in 1980 and his doctor's degree in biotechnical sciences in 1989.

- 43)  **DASLAV HRANUELI, Ph.D.** (Collaborating Member) is Full Professor at the Faculty of Food Technology and Biotechnology of the University of Zagreb. He studied biotechnology and graduated from the Faculty of Technology of the University of Zagreb in 1970. He obtained his master's degree in biology in 1974 and his doctor's degree in biotechnical sciences in 1979 at the University of Zagreb.


- 44) **DRAGO ŠUBARIĆ, Ph.D.** (Collaborating Member) is Full Professor at the Faculty of Food Technology of the J. J. Strossmayer University in Osijek. He graduated from the same faculty in 1988. Up to 1990 he has been working as technologist in PIK Belje and then he has got a job at the Faculty for Food Technology. He obtained his master's degree in 1994 and his doctor's degree in 1999 in food technology at the Faculty of Food Technology and Biotechnology of the University of Zagreb.


XI. Department of Mining and Metallurgy


- 45)  **NEDILJKA GAURINA MEĐIMUREC, Ph.D.** (promoted into Associate Member) is Full Professor at the Faculty of Mining, Geology and Petroleum Engineering of the University of Zagreb. She was born in Sinj on February 10th, 1957. She graduated from the Faculty of Mining, Geology and Petroleum Engineering in Zagreb in 1980, obtained her master's degree at the Faculty of Mining and Geology in Belgrade in 1986 and her doctor's degree at the Faculty of Mining, Geology and Petroleum Engineering in Zagreb in 1993.

- 46)  **IVAN TOMAŠIĆ, Ph.D.** (Associate Member) is Full Professor at the Faculty of Mining, Geology and Petroleum Engineering of the University of Zagreb. He was born in Karlovac on April 8th, 1946. He graduated from the Faculty of Mining, Geology and Petroleum Engineering of the University of Zagreb in 1971, where he also obtained his master's degree in 1978 and his doctor's degree in 1986.


- 47) **DARKO VRKLJAN, Ph.D.** (Associate Member) is Associate Professor at the Faculty of Mining, Geology and Petroleum Engineering of the University of Zagreb. He was born in Zagreb on October 1st, 1952. He graduated from the Faculty of Mining, Geology and Petroleum Engineering of the University of Zagreb in 1978, he obtained there his master's degree in 1992 and his doctor's degree in 1998.


- 48)  **BILJANA KOVAČEVIĆ ZELIĆ, Ph.D.** (Collaborating Member) is Associate Professor at the Faculty of Mining, Geology and Petroleum Engineering of the University of Zagreb. She was born in Vinkovci on January 2nd, 1964. She graduated from the Faculty of Mining, Geology and Petroleum Engineering of the University of Zagreb in 1988, obtained there her master's degree in 1994 and her doctor's degree in 2000.


- 49)  **GORDAN BEDEKOVIĆ, Ph.D.** (Collaborating Member) is Assistant Professor at the Faculty of Mining, Geology and Petroleum Engineering of the University of Zagreb. He was born in Zagreb on November 26th, 1967. He graduated from the Faculty of Mining, Geology and Petroleum Engineering of the University of Zagreb in 1993, obtained there his master's degree in 1999 and his doctor's degree in 2003.


- 50)  **TRPIMIR KUJUNDŽIĆ, Ph.D.** (Collaborating Member) is Assistant Professor at the Faculty of Mining, Geology and Petroleum Engineering of the University of Zagreb. He was born in Zagreb on November 25th, 1964. He graduated from the Faculty of Mining, Geology and Petroleum Engineering of the University of Zagreb in 1989, where he also obtained his master's degree in 1997 and his doctor's degree in 2002.


XII. Department of Textile Technology

- 51)  **DUBRAVKO ROGALE, Ph.D.** (promoted into Full Member) was born in Rijeka on November 17th, 1955. He graduated from the Faculty of Textile Technology of the University of Zagreb in 1981, and obtained his master's degree in 1987 at the same faculty, as well defended his doctor's thesis in textile technology in 1994. He has been Full Professor since 2003.

- 52)  **ZVONKO DRAGČEVIĆ, Ph.D.** (promoted into Associate Member) was born in Zagreb in 1946. He graduated from the Faculty of Technology of the University of Zagreb in 1971, obtained there his master's degree in 1976 and defended his doctor's thesis in 1981. He has been Scientific Assistant since 1973, Assistant Professor since 1984, Associate Professor since 1991 and Full Professor since 1999.

- 53)  **ANA MARIJA GRANCARIĆ, Ph.D.** (promoted into Associate Member) was born in Zadar in 1943. She graduated from the Faculty of Technology of the University of Zagreb in 1967, obtained there her master's degree in 1974 and defended her doctor's thesis in 1979. She is Full Professor at the Faculty of Textile Technology of the University of Zagreb.

- 54)  **MAJA ANDRASSY, Ph.D.** (Collaborating Member) was born in Zagreb in 1946. She graduated from the Faculty of Technology of the University of Zagreb in 1971 and obtained her master's degree in 1979. She defended her doctor's thesis in textile technology at the Faculty of Textile Technology in Zagreb in 1994. From 1972 to 1983 she was Scientific Assistant at the College for Textile and Clothing in Zagreb and from 1983 to 1990 at the Faculty of Textile Technology in Zagreb. She has been Lecturer since 1990, Associate Professor since 2001 and Full Professor since 2006.

- 55)  **JELKA GERŠAK, Ph.D.** (Correspondent Member) was born in Brežice, Slovenia in 1954. She graduated from the Faculty of Technology in Ljubljana in 1979. At the Faculty of Technology of the University of Zagreb she obtained her master's degree in 1985 and her doctor's degree in 1990. At the Faculty of Mechanical Engineering in Maribor she was elected Senior Lecturer in 1986, Assistant Professor in 1991, Associate Professor in 1996 and Full Professor in 2006.

Promoted to the Members Emeriti of the HATZ

Prof. emer. Ivo Soljačić, (Promoted to the Member Emeritus of the HATZ)



Prof. emer. Ivo Soljačić was born in Zagreb in 1935. He graduated from the Faculty of Technology of the University of Zagreb in 1959. He was elected Resident Assistant at the Faculty of Technology in 1963. In 1967 he defended his master's thesis at the Faculty of Pharmacy and Biochemistry of the University of Zagreb and in 1971 obtained his doctor's degree at the Faculty of Technology. He was elected Assistant Professor in the same year, Associate Professor in 1974 and Full Professor in 1978. Up to the 24th Annual Assembly of the HATZ he has been Full Member of the HATZ. In 2006 he was elected Professor Emeritus of the University of Zagreb.

Prof. emer. Nikola Šerman, (Promoted to the Member Emeritus of the HATZ)



Prof. emer. Nikola Šerman was born in Zagreb in 1938. He graduated from the Faculty of Mechanical Engineering and Naval Architecture in Zagreb in 1963. From 1963 to 1965 he was working at the factory "Jugoturbina" in Karlovac. He obtained his master's degree at the Faculty of Mechanical Engineering and Naval Architecture of the University of Zagreb in 1970 and his doctor's degree at the same faculty in 1978. He was elected Assistant Professor in 1970, Associate Professor in 1979 and Full Professor in 1984. He was elected Full Professor in Tenure in 1996. Up to the 24th Annual Assembly of the HATZ he has been Full Member of the Academy. In 2009 he was elected Professor Emeritus of the University of Zagreb.

In memoriam



Margareta Glancer-Šoljan, Ph.D., Full Professor at the Faculty of Food Technology and Biotechnology of the University of Zagreb and Associate Member of the Croatian Academy of Engineering (August 30th, 1944 – December 31st, 2008) was born in Teslić, Bosnia and Herzegovina. She graduated from the Faculty of Technology in Tuzla in 1971. At the Faculty of Technology of the University of Zagreb she obtained her master's degree in 1976 and her doctor's degree in 1977. She has been Full Professor at the Faculty of Food Technology and Biotechnology of the University of Zagreb since 1986. She has published more than 60 scientific works. She has been the mentor of more than 80 graduation theses, 4 master's theses and 8 doctor's theses. She was the head of 5 homeland scientific projects and 2 international projects. For scientific achievements in the field of biotechnical sciences and environmental protection she received "Nikola Tesla" Annual Award of the Croatian Parliament for 1988 and "Kliment Ohridski" Award in 1988, as well as recognitions by International Federation of Inventors' Associations (IFIA) in 1995 and ARCA Zagreb in 2003.



Vladimir Marić, Ph.D., Full Professor at the Faculty of Food Technology and Biotechnology of the University of Zagreb and Full Member of the Croatian Academy of Engineering (January 11th, 1939 – May 22nd, 2009) was born in Dežanovec near Daruvar. He graduated from the Faculty of Technology, Department of Biotechnology in Zagreb in 1964. He obtained his doctor's degree in biotechnology in 1973 and was elected Full Professor of the Faculty of Food Technology and Biotechnology of the University of Zagreb in 1980. He

was Dean of the Faculty of Food Technology and Biotechnology of the University of Zagreb from 1984 to 1988. He has received numerous awards and recognitions among which "Fran Bošnjaković" Award for 2000 and Life Achievement Award of the Croatian Parliament in 2008 for outstanding contribution to the progress of biotechnical sciences, especially biotechnology and bioprocess engineering in Croatia.



Tomislav Mlinarić, Ph.D., Full Professor of the Faculty of Transport and Traffic Engineering in Zagreb and Member Emeritus of the Croatian Academy of Engineering (February 28th, 1932 – November 18th, 2008) was born in Bihać, Bosnia and Herzegovina. He graduated from the Faculty of Electrical Engineering of the University of Zagreb, Department of Weak Current in 1958. He obtained his doctor's degree at the Faculty of Transport and Traffic Engineering in 1987. After graduation he has started working in ŽTP Zagreb and since 1984 he has been working at the Faculty of Transport and Traffic Engineering of the University of Zagreb. He published more than 60 scientific and expert works among which the book "Signal and Security Telecommunication Devices in Railway Traffic" in several editions. He has been Vice Dean and Dean of the Faculty of Transport and Traffic Engineering. For his successful international activity at scientific conferences he received several recognitions and commendations. He has been President of the Managing Board of Croatian Railways and also in charge of the organization and strategic and long term development of Croatian Railways. In 2008 he was elected Professor Emeritus of the University of Zagreb.



Annual 2008 of the Croatian Academy of Engineering

ISSN: 1332-3482

Annual of the Croatian Academy of Engineering (HATZ) for 2008 (ISSN 1332-3482) has been published in English in 400 copies. The Annual has 552 pages and is divided in two parts. Introduction begins with the report of the President of the HATZ who is also editor-in-chief of the Annual, Prof. Zlatko Kniewald, Ph.D. about the activities of the Academy in 2008, as well as the concise review of all the achievements of the HATZ throughout his first and second mandate. First part of the Annual is dedicated to the Symposium with international participation "Water Management in Croatia" held in Zagreb in February 2009 in the organization of the Croatian Academy of Engineering and the Faculty of Civil Engineering of the University of Zagreb. The Symposium should have been held in 2008 but, due to the anniversary celebration of the Faculty of Civil Engineering, it was agreed it should be transferred to the beginning of 2009. Although a great number of works has been presented at the Symposium, 21 works have been chosen for publication. Special credit for the success of the Symposium, as well as for the choice and editing of the works belongs to our esteemed member, Prof. Josip Marušić, Ph.D. due to the fact that the promotion of the Annual of this size and content has been made only a month after the Symposium itself. The included works begin with the presentations about the implementation of the Strategy of Water Management in Croatia adopted by the Croatian Parliament in 2008 and then the authors present the significance and relevance of the water ways traversing borders of states which is of special importance to the agriculture and food production. Irrigation and flood protection, as well as the use of water resources in energy production represent a special long-term problem in the conditions of water level lowering due to intensive irrigation in some countries. Special attention was dedicated to the construction of the Dunav – Sava Canal, navigability of rivers and protection of subterranean waters according to the EU instructions. The first part ends with the Symposium conclusions which should get acquainted both national and international public with all

the efforts Croatia is going to make in the near future on the preservation of relatively considerable water resources at her disposal. By organizing this event the HATZ has again shown its tendency to be the bridge between science and economy in the implementation and deliberation of the implementation of new technologies and knowledge in environmental protection, sustainable growth and long-term deliberation of the progress of Croatian economy.

Second part of the Annual comprises two selected papers of our members who present latest technical solutions in the field of graphic technology and new geotechnical solutions, contains the program of work of new Governing Board of the HATZ for the period 2009 – 2013, as well as presentation of the international cooperation of the Academy in 2008. It should be emphasized that in 2008 the Ministry of Science, Education and Sports of the Republic of Croatia entrusted the Academy with the organization of the 300th Anniversary of the Birth of Ruđer Bošković which should be held in 2011. Preliminary program has been made and in the course of 2009 it is going to be considered and adopted. The second part also includes the activities of the HATZ in Euro-CASE and CAETS that have been assessed very favourably in both associations. This Annual ends with the report from the 5th World Forum about Science and Technology in Society held in Kyoto, Japan from October 5 – 7, 2008 and in which the Academy participated by invitation of the organizer. It is necessary to notice that the Kyoto Forum has adopted a final document (included in the Annual) the participants have been obligated to present to their governments for information. The list of participants included in the Annual shows extremely high level of this conference, giving thus special weight to the adopted conclusions. This Annual, as well as two previous ones, has a protective hologram at the front cover (designed by Ivana Žiljak) which makes copying impossible and at the back cover a stylish picture of Ruđer Bošković and the announcement of the 1711 – 2011 anniversary.



Symposium with International Participation Water Management in Croatia

Croatian Academy of Engineering in collaboration with the Ministry of Regional Development, Forestry and Water Management, Hrvatske vode (Legal Entity for Water Management), Ministry of Science, Education and Sports of the Republic of Croatia, the Faculty of Civil Engineering of the University of Zagreb and Croatian Society for Drainage and Irrigation held a Symposium with International Participation "Water Management in Croatia" on February 12th, 2009 within the program of the celebration of the 90th anniversary of the Faculty of Civil Engineering of the University of Zagreb. In the work of the Organizing Committee under the presidency of **Prof. Josip Marušić, Ph.D.** there have participated **Prof. Vladimir Andročec, Ph.D., Prof. Božidar Biondić, Ph.D., Prof. Juraj Božičević, Ph.D., Ružica Drmić, B.C.E., Goran Granić, Ph.D., Prof. Zlatko Kniewald, Ph.D., Prof. Darko Mayer, Ph.D. and Siniša Širac, Ph.D.**

Program of the Symposium has been evaluated as the *Course of Professional Training in Civil Engineering*. The total of 248 participants from the institutions and firms the main activities of which are in the field of water management have taken part in the Symposium. Out of 51 co-authors of the papers there have been 28 members of the Croatian Academy of Engineering and 24 representatives of professional and scientific institutions.

Main objective of the Symposium has been the presentation of works pointing out to the comprehensive and interdisciplinary approach and activities in the process of contriving, as well as implementation of the program of sustainable water management in Croatia. It can be achieved by a constant cooperation of the water consumers and entities managing the waters, as well as professionals and scientist who

participate in the process of planning, design, building and use of the objects and systems related to the water management.

On July 15th, 2008 at the 5th Session of the Croatian Parliament the Water Management Strategy was adopted as a long term planning document ascertaining the vision, mission, objectives and duties of the state policy in water management. Its contents have been coordinated with the relevant directives of the European Union and it has a special significance in the process of preparation for the accession negotiations with the aim of using the EU pre-accession funds.

Up to 2015 all member states of the European Union have to take maximum possible measures so that their water resources would meet formal standards.

Presented papers have been classified in 8 thematic areas:

1. Croatian Water Management Strategy
2. Hydraulic Aspects of Cross – Border Cooperation in River Restoration Project – invited lecture from abroad
3. Water and Food Production
4. Water and Energy Production
5. Water – Croatian Export Product
6. Inland Waterways and Ports in Croatia
7. Public Water Supply Systems in Croatia
8. Water Protection in Croatia.

Abstracts of the papers have been published on 80 pages at the Abstract Proceedings in Croatian and English, and integral papers, together with the conclusions of the Symposium, have been published in English in the "Annual of the Croatian Academy of Engineering 2008".

New Professors Emeriti of the University of Zagreb



Professor Emeritus **Josip DVORNIK**

Josip Dvornik, Ph.D. was retired on October 1st, 2008 as Full Professor in Tenure of the Faculty of Civil Engineering of the University of Zagreb. He was born in Zagreb in 1938. He graduated from the Department of Civil Engineering of the Faculty of Architecture, Civil Engineering and Geodesy of the University of Zagreb in 1963. In 1971 he obtained his master's degree and in 1972 his doctor's degree at the Faculty of Civil Engineering in Zagreb. From his graduation, apart from some short intervals, he has been working at the Faculty of Civil Engineering of the University of Zagreb. He went to the University of Lausanne, Switzerland for specialization in 1989. During his working life he has taken several senior positions as member of the National Scientific Council of the Republic of Croatia, member of the Committee for the "Fran Bošnjaković" Award Assignment, member of the Parent Commission for Civil Engineering, Architecture, Urban Planning and Design, as well as member of the Committee for the "Professor Emeritus" Title Assignment of the University of Zagreb. He has been the mentor of 29 master's theses and 14 doctor's theses. In 1986 he received "Nikola Tesla" Annual Award for Scientific Work of the Croatian Parliament. He has been the reviewer of some twenty university text books, monographs or reference books. He has taken part in over twenty construction projects in Croatia and abroad. He is reviewer in the field of ferroconcrete and built constructions, as well as composite structures. He received following international awards: the award of the U.S. firm Wolfram Research and of the U.S. journal Fabric & Architecture.



Professor Emeritus **Damir KARLOVIĆ**

Damir Karlović, Ph.D. was retired on October 1st, 2008 as Full Professor in Tenure of the Department for Food Engineering of the Faculty of Food Technology and Biotechnology of the University of Zagreb. He was born in Zagreb in 1938. He graduated from the Faculty of Technology of the University of Zagreb in 1969, obtained his master's degree at the same faculty in 1977 and his doctor's degree in biotechnology in 1981. Upon graduation he has worked at Technische Hochschule in Zurich, Switzerland. He has been the head of the Institute for Food and Technology and the Dean of the Faculty of Food Technology and Biotechnology of the University of Zagreb. He has published his scientific works in the field of drying, concentrating, extraction and extrusion in various scientific journals, organized scientific conferences at home and abroad and taken part in development projects for the confectionery industry. Within the faculty he has founded the Center for Food Quality Control which is being certified today for the control of food and general consumer products. For more than 20 years he has been president of the Croatian Academic Sports Society (HAŠK) of the University, 22 clubs of which represent the peak of Croatian sport, and has reintroduced HAŠK to the University where it has originated from. He has always advocated for the academic behaviour of 4000 active sportsmen. Damir Karlović, Ph.D. has also administered important duties in Boards and Committees of several Ministries of the Republic of Croatia at the University of Zagreb. For his remarkable scientific and expert work he has received numerous awards, commendations and medals.



Professor Emeritus **Zlatko KNI EWALD**

Zlatko Kniewald, Ph.D. was retired on October 1st, 2008 as Full Professor in Tenure at the Department of Biochemical Engineering of the Faculty of Food Technology and Biotechnology of the University of Zagreb. He was born in Zagreb in 1938. He graduated biotechnology from the Faculty of Technology of the University of Zagreb in 1961. Upon graduation he has started working at the yeast and spirit factory "Žumberak" in Savski Marof. In 1966 he obtained his master's degree at the Faculty of Pharmacy and Biochemistry of the University of Zagreb where he later habilitated in biochemistry and in 1970 obtained his doctor's degree in biotechnology at the Faculty of Technology of the University of Zagreb. As fellow of the Ford Foundation at the Institute of Pharmacology of the University of Milan, Italy (1968 – 1970) he worked on his doctor's thesis. He was in charge of the Ford Foundation project in Zagreb from 1970 to 1979. He has published 86 scientific works (38 in CC/SCI). For his scientific achievements he has received 23 plaquettes and recognitions. He received "Decoration of Danica Hrvatska with the figure of Nikola Tesla" and Annual "Ruder Bošković" State Award for Scientific Research for 1986 granted by the Croatian Parliament. He is member of several national and international associations and from 2003 to 2009 president of the Croatian Academy of Engineering. He has been member of the Assembly of the University of Zagreb, the author and organizer of the First University of Zagreb Fair in 1996, as well as member, reviewer and expert of several ministries, agencies and associations at home and abroad.



Professor Emeritus **Nikola ŠERMAN**

Nikola Šerman, Ph.D. was retired on October 1st, 2008 as Full Professor in Tenure at the Faculty of Mechanical Engineering and Naval Architecture of the University of Zagreb. He was born in Zagreb in 1938. He graduated from the Department of Mechanical Engineering of the Faculty of Mechanical Engineering and Naval Architecture in Zagreb in 1963, obtained his master's degree in 1970 and his doctor's degree at the same faculty in 1978. Upon graduation he was working at the factory "Jugoturbina" in Karlovac up to 1965 when he went to the Faculty of Mechanical Engineering and Naval Architecture. He has founded and developed several courses in the field of dynamics and process regulation at under-graduate and post-graduate studies. Apart from lecturing at his own faculty he has also given lectures at the Technical Faculty in Rijeka, the Faculty of Mechanical Engineering in Slavonski Brod and the Faculty of Electrical Engineering and Computing in Zagreb. Besides numerous scientific projects he has been the head of, his activities in solving problems of thermo power plants management and regulation in Croatia should be pointed out, i.e. thermo power plants "Rijeka", "Sisak" and "Plomin". He has been member of the National Council for Higher Education. In 1979 he received Grand Medal of the Faculty of Mechanical Engineering and Naval Architecture and the HAZU Award for 1999. He has made remarkable drawings by computer graphics in the seventies which are kept at the Museum of Contemporary Art in Zagreb. His last exhibition was in Zentrum für Kunst und Medientechnologie in Karlsruhe, Germany in 2008.