Chemical Sciences in Changing Times: Visions, Challenges, and Solutions

by Teodor Ast

The **4th International Conference of the Chemical Societies of the South-Eastern European Countries (ICOSECS-4)** was held in Belgrade, Serbia and Montenegro, from 18–21 July 2004 at the Faculty of Technology and Metallurgy, University of Belgrade. These conferences have become a biennial event: the first two were held in Halkidiki, Greece (1998 and 2000), and the third in Bucharest, Romania (2002).

ICOSECS-4 was organized by the Serbian Chemical Society on behalf of the Society of Albanian Chemists, Union of Chemists of Bulgaria, Pancyprian Union of Chemists, Association of Greek Chemists, Society of Chemists and Technologists of Macedonia, Chemical Society of Montenegro, and the Romanian Chemical Society.

The theme of the conference was "Chemical Sciences in Changing Times: Visions, Challenges and Solutions." The conference featured contributions from all areas of chemistry. However, the main focus was reflected in three symposia:

- Advanced Materials: From Fundamentals to Application
- The Greening of Chemistry: Pursuit of a Healthy Environment and Safe Food
- Teaching and Understanding Chemistry: New Concepts and Strategies for Changing Times (Dedicated to 150 years of teaching chemistry in Serbia)

The meeting was organized under the auspices of IUPAC, the Federation of European Chemical Societies (FECS), the Ministry of Science and Environmental Protection of Serbia, and the Organization for the Prohibition of Chemical Weapons. The president of IUPAC, Leiv Sydnes, and the president of FECS, Gabor Naray-Szabo, attended the conference and addressed the participants.

Some 600 researchers from 26 countries took part in the conference. One of the reasons for such a large attendance was because organizers of these conferences (the chemical societies of South-East Europe) have declared a commitment to keeping the registration fees as low as possible.

The scientific program featured five plenary lectures:

- John Fenn, Virginia Commonwealth University, Richmond, USA, the 2002 Nobel Laureate, "Electrospray Wings for Molecular Elephants"
- Peter Atkins, Oxford University, Oxford, UK, "Modern Trends in Chemical Education"
- C.N.R. Rao, Jawaharlal Nehru Centre for Advanced Scientific Research, Bangalore, India, "New Directions in the Chemical Design of Materials"
- Egon Matijevic, Clarkson University, Potsdam, USA, "Mechanisms of Formation of Uniform Fine Particles and Their Applications"
- Ivano Bertini, University of Florence, Florence, Italy, "From Genomes to Cellular Mechanisms and Drug Design"

In addition to the plenary lectures, the program included 38 invited lectures and 25 oral and 437 poster presentations. Brief summaries of all contributions were published in a two-volume book of abstracts.

A rich social program included a welcome reception in the historic City Hall featuring a recital by the Simonuti Trio, a boat sightseeing tour of Belgrade, and a conference dinner with live music and dancing.

It was decided that the next conference, ICOSECS-5, will be organized by the Society of Chemists and Technologists of Macedonia in 2006.

Professor Teodor Ast <ast@tmf.bg.ac.yu> served as chairman of the International Scientific Committee of ICOSECS-4. He is the president of the Union of Yugoslav Chemical Societies.

XI International IUPAC Symposium on Mycotoxins and Phycotoxins

by Douglas L. Park

The series of **International Symposia on Mycotoxins and Phycotoxins**, initiated by the IUPAC Food Chemistry Commission, began in Kungalv, Sweden, in 1973. Since then, nine symposia have been held in Pulawy, Poland; Paris, France; Lausanne, Switzerland; Vienna, Austria; Pretoria, South Africa; Tokyo, Japan; Mexico City, Mexico; Rome, Italy; and Guaruj, Brazil. The symposia have become the principal international interdisciplinary meetings on mycotoxins and phycotoxins.

The 11th symposium was held in May 2004 at the Natcher Center of the National Institutes of Health in Bethesda, Maryland, USA. Over 300 participants from

41 countries were present for 63 oral presentations (52 presentations on mycotoxins and 11 on phycotoxins) by internationally recognized speakers. In addition, 127 posters were on display (116 on mycotoxins and 11 on phycotoxins). The focus of the oral sessions included Ecology and Biodynamics, Toxicology and Health Effects, Prevalence of Known and New Toxins, Advances in Analytical Methods, and Advances in Preventative Intervention.

Keynote speaker Maya Pineiro (FAO, Italy), speaking for Ezzeddine Boutrif (FAO), addressed the importance of mycotoxins and phycotoxins on the global perception of food safety. Key topics at the symposium included regulations, risk assessment, and applications of methodologies for economically challenged regions.

A number of presentations provided insight and cutting-edge concepts, including "New Technologies for Predicting Risk: the Impact of the Advent of the 'Omics'," by Daniel Casciano from the National Center for Toxicology Research, Food and Drug Administration, USA. During his talk, he introduced the term "systeomic" to the audience and indicated that this new approach would result in the reduction in animal use and resolve the value of non-invasive techniques in animal and human research, including mycotoxins and phycotoxins.

Other presentations focused on reducing fungal infections and mycotoxin levels in crop plants in the field and in storage, as well as the establishment of regulations, as presented by Walter F.O. Marasas, Medical Research Council of South Africa, and Hans van Egmond, National Institute of Public Health and the Environment, Netherlands. Felicia Wu (University of Pittsburgh, PA, USA) pointed out that the implications of both health and economic outcomes are important for policymakers to consider when developing international standards for mycotoxins. In the area of phycotoxins, Sherwood Hall (U.S. FDA) offered an insightful presentation indicating that optimizing seafood safety requires finding a balancing point between detection methods that may be more accurate or sensitive and those that are simpler and faster that would be more likely to be reliably performed at an adequate frequency, given the temporal and spatial density required for effective monitoring.

During the symposium, an announcement was made concerning a possible significant aflatoxicosis poisoning outbreak that was unfolding in Kenya due to aflatoxin contaminated maize. In the subsequent weeks, it was found that over 300 cases of poisoning were reported, with 125 deaths.

One of the reasons for rotating this meeting to different locations worldwide was to allow for local issues to be addressed in the area of mycotoxins and phycotoxins. This is why it was decided during the meeting that the XII International IUPAC Symposium on Mycotoxins and Phycotoxins will be held in Istanbul, Turkey, in 2007. There has not been a symposium of this magnitude in the Middle East, and the problems of mycotoxins and phycotoxins in this economically challenged area of the world can be addressed more adequately once the meeting is held. For more information, please contact Hamide Senyuva <hsenyuva@tubitak.gov.tr>.

Aflatoxins are produced by different species of Aspergillus, particularly flavus and parasiticus, as well as members of the Genera Penicillium and Rhizopus. Strains of Aspergillus flavus and parasiticus produce mycotoxins under favorable conditions. Aflatoxins can contaminate corn, cereals, sorghum, peanuts, and other oil-seed crops.

During the last day of the symposium, a follow-up session was held for the participants of the 2002 International Workshop on Mycotoxins. Ten presentations were made by scientists from economically challenged nations that previously participated in the workshop (three from Latin America, three from Africa, three from Asia, and one from Europe). They described significant progress in the establishment of training opportunities, as well as the practical application of mycotoxin management programs.

The editorial committee of the symposium is preparing the proceedings, with a target date for publication in the second half of 2005. For more information, please contact Dr. Henry Njapau <hnjapau@cfsan.fda.gov> regarding the book of abstracts or the proceedings.

Douglas L. Park <dpark@cfsan.fda.gov>, chairman of the organizing committee, is the director of the Division of Natural Products, Center for Food Safety and Applied Nutrition, FDA, USA. He is a member of several international organizations in the area of mycotoxins.