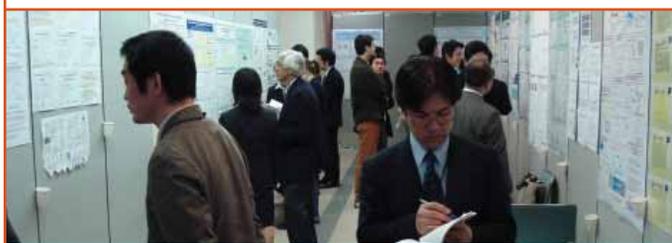


# Conference Call

## Photochemistry

by Masahiro Irie

The **XXIst IUPAC Symposium on Photochemistry** was held in Kyoto, Japan, 2-7 April 2006. This series of symposia has been held every two years in Europe since it was initiated by the late George S. Hammond in 1964. This year marked the first time the symposium was held outside Europe. The symposium topics covered all fields of photochemistry, from inorganic, organic, and physical photochemistry to materials science, biological chemistry, and physics.



The opening presentation of the symposium was devoted to Hammond, who passed away in 2005 at the age of 84. David Whitten (University of New Mexico, USA) delivered the tribute, which focused on his personality and accomplishments in photochemistry. The scientific program was initiated by the plenary lecture of W.E. Moerner (Stanford University, USA) entitled "Single Molecules as Nanoscale Reporters in Biophysics, Chemistry, and Materials Science." Other plenary lectures were as follows:

- K. Müllen (Max-Planck-Institute for Polymer Research, Germany), "Nanoemitters by Design"
- P. Corkum (National Research Council, Canada), "Attosecond Imaging: Asking a Molecule to Paint a Self-Portrait"
- M. Blanchard-Desce (Université de Rennes, France), "Molecular Engineering of Two-Photon Absorbing Molecules for Bioimaging"
- M.A. Miranda (Universidad Politécnica de Valencia, Spain), "Drug-Biomolecule Interactions in the Excited States"
- N. Hoffmann (Université de Reims Champagne-Ardenne, France), "Efficient Radical Addition of Tertiary Amines to Alkenes Using Photochemical Electron Transfer"
- L. Jiang (Institute of Chemistry, China), "UV-Manipulated Switch between Superhydrophobicity and Superhydrophilicity"
- K. Domen (The University of Tokyo, Japan), "Overall Water Splitting on Non-Oxide Based

Photocatalysts"

- J. Mattay (Bielefeld University, Germany), "On the Way to Supramolecular Photochemistry at the Single-Molecule Level"

In addition, 16 invited lectures, 131 short oral contributions, and 462 posters were presented. Additionally, three workshops on "Organic Light Emitting Diodes," "Photoinduced Electron Transfer," and "Photocatalysts" were held. In the workshop on photoinduced electron transfer, a presentation on "Long-Lived Charge-Separated or Charge-Transfer States in Compact Dyads" by S. Fukuzumi (Osaka University, Japan) and J.W. Verhoeven (University of Amsterdam, Netherlands), proved to be very controversial and elicited extensive discussions. The two lectures attracted a large audience and aroused exciting arguments over the topic. The details of the symposium were fully reviewed by J. Mattay in *Ang. Chem. Int. Ed.* 2006, 45, 3570-3571 (doi: 10.1002/anie.200601561).

IUPAC Poster Prizes were awarded to the following three young scientists: Hisao Shimizu (Toyama University, Japan), Jong Won Chung (Seoul National University, Korea), and Adrian O. Chapman (University of Nottingham, UK).

Over 770 participants, including more than 200 from 38 different countries, contributed to a very successful symposium.

The next symposium in this series will be held in July 2008 in Göteborg, Sweden. The chairman is Devens Gust (Arizona State University, USA).

Masahiro Irie <[irie@cstf.kyushu-u.ac.jp](mailto:irie@cstf.kyushu-u.ac.jp)> is a professor of chemistry in the Department of Chemistry and Biochemistry at Kyushu University. He was the chairman of the International Scientific Committee of XXIst IUPAC Symposium on Photochemistry.

## Organic Synthesis

by Eusebio Juaristi and Roberto Melgar-Fernández

The **16th International Conference on Organic Synthesis (ICOS-16)**, sponsored by IUPAC, Academia Mexicana de Ciencias, the Division of Organic Chemistry of the American Chemical Society, and Sociedad Química de México, took place in Mérida, México, 11-15 June 2006. Six hundred attendees from over 40 different countries participated in the conference.

Continuing the success of previous conferences



Opening ceremony (L to R): Alfonso Larqué, director, Centro de Investigación Científica de Yucatán; Raymundo Cea, director, Instituto de Química, UNAM; Eusebio Juaristi, chairman of ICOS-16; Ing. Manuel Fuentes Alcocer, mayor of Mérida City; Eduardo González, Ministry of Health in the State of Yucatán; Leiv Sydnes, past president of IUPAC, Guillermo Delgado, president of Sociedad Química de México.

in this series, ICOS-16 secured the participation of eight outstanding plenary speakers: Luiz Dias (Brazil), Eric Jacobsen (USA), Paul Knochel (Germany), Shū Kobayashi (Japan), Stephen Martin (USA), Frank McDonald (USA), Joaquín Tamariz (México), and David MacMillan, winner of the 2006 Thieme-IUPAC Prize (see <[www.iupac.org/news/archives/2006/thieme\\_prize.html](http://www.iupac.org/news/archives/2006/thieme_prize.html)>). Additionally, 15 renowned invited speakers delivered 25-minute presentations: Carsten Bolm (Germany), Margaret Brimble (New Zealand), Cathleen Crudden (Canada), Gregory Fu (USA), Tohru Fukuyama (Japan), Miguel García-Garibay (USA), Cesare Gennari (Italy), David Hodgson (UK), Minoru Isebe (Japan), Eun Lee (Korea), Shengming Ma (China), Carmen Nájera (Spain), Régis Réau (France), and Philippe Renaud (Switzerland).

In addition, 36 invited experts participated as speakers in six symposia in the areas of “medicinal chemistry” (chair, Tarek Mansour), “organocatalysis” (chair, Carlos Barbas, III), “enantioselective synthesis of  $\beta$ -amino acids” (chair, Ferenc Fülöp), “organolithium compounds in synthesis” (chair, William Bailey), “selenium and tellurium in organic synthesis” (chair, João Comasseto), and “applications of microwave in organic synthesis” (chair, Nicholas Leadbeater).

The next conference, ICOS-17, will be held 22-27 June 2008 in Daejeon, Korea. The co-chairs of the organizing committee are Sunggak Kim (KAIST) and Eun Lee (Seoul Nat'l Univ.). All correspondence should be sent to the secretary general Sung Ho Kang <[shkang@kaist.ac.kr](mailto:shkang@kaist.ac.kr)>.

Eusebio Juaristi <[juaristi@relaq.mx](mailto:juaristi@relaq.mx)>, chairman of ICOS-16, is a professor of organic chemistry in the Department of Chemistry at Centro de Investigación y de Estudios Avanzados del IPN, México. Roberto Melgar-Fernández is a graduate student at the same institution and was a member of the Organizing Committee.

## Neurotoxic Metals

by Monica Nordberg and Roberto Lucchini

The IUPAC-sponsored international workshop on “Neurotoxic Metals: Lead, Mercury, and Manganese from Research to Prevention” took place in Brescia, Italy, as a satellite meeting of the 28th International Congress on Occupational Health (ICOH), held 17-18 June 2006. The workshop coincided with a celebration of the first 20 years of the Institute of “Medicina del Lavoro” of Brescia, which was the conference venue.

The Scientific Committee consisted of Lorenzo Alessio (Italy), Philippe Grandjean (Denmark), Anders Iregren (Sweden), Roberto Lucchini (Italy), Philip J. Landrigan (USA), Gunnar Nordberg (Sweden), and Monica Nordberg (Sweden). R. Lucchini acted as workshop organizer. The membership of the conference’s National Advisory Committee and Scientific Secretariat is available at <[www.ntoxmet.it/organization.htm](http://www.ntoxmet.it/organization.htm)>.

Financial and other support was provided by IUPAC, ICOH, ISPESL (see <[www.ispesl.it](http://www.ispesl.it)>), U.S. National Institute of Environmental Health Science, U.S. National Institute for Occupational Safety and Health, the University of Brescia, and the Province of Brescia. There was no registration fee for participants from countries with a per capita gross domestic product of less than USD 15 000.

The scientific background for the workshop is that the nervous system is an important target organ for toxic metals. These chemical substances tend to accumulate in the brain and cause long-term neurotoxic effects. The implementation of preventive programs in the workplaces has led to a decrease in occupational exposure to toxic metals, but environmental levels have increased, leading to a widening ubiquitous exposure. Given the increasing life expectancy and duration of working life, concern is growing about the possible long-term effects of metals such as lead, mercury, and manganese. New research has shown that adverse effects may occur at “low” exposure levels previously thought to be safe.

Further high-quality research on exposure-related health effects is necessary to allow governmental and regulatory agencies to institute preventive measures. This international workshop offered a unique opportunity for an exchange of information among researchers, risk assessors, regulatory bodies, public health authorities, and stakeholders.

## Conference Call

All members of the Scientific Committee on the Toxicology of Metals (SCTM) and the Scientific Committee on Neurotoxicology and Physophysiology (SCNP) were invited to participate. A total of 110 participants—scientists, physicians, and others with an interest in the field—from 27 nations participated in the two-day workshop.

### Declaration of Brescia

At the closing session of the International Workshop at Brescia, the following recommendations on the Prevention of the Neurotoxicity of Metals were adopted by consensus:

1. Intensified attention must be paid to early warnings of neurotoxicity.
2. All uses of lead, including recycling, should be reviewed in all nations . . .
3. In particular, tetraalkyl lead must be eliminated without delay from the gasoline supplies of all nations.
4. Current exposure standards for lead need urgently to be reduced.
5. Exposures of pregnant women and women of reproductive age to methyl mercury need to be reduced to prevent subclinical fetal neurotoxicity.
6. Exposures of pregnant women and young children to manganese need to be reduced to prevent subclinical neurotoxicity.
7. The addition of organic manganese compounds to gasoline should be halted immediately in all nations.
8. Exposure standards for manganese need to be reconsidered.
9. Economic impacts of the neurotoxicity caused by metals must be considered.
10. Need is great for continuing research into the neurotoxicity of metals.

See <[www.ntoxmet.it](http://www.ntoxmet.it)> for full text.

The main topics of the workshop were preventative approaches to the three metals, previous experiences and future challenges, and economic implications of metal neurotoxicity. Topics of fundamental importance for risk assessment and prevention were highlighted in the following four sessions.

The session on **Lead**, chaired by Landrigan and Alessio, dealt with the history of lead use, discovery of subclinical toxicity, low-level lead toxicity, and lead and neurocognitive disease in the elderly. Special attention was paid to lead neurotoxicity in children, the threshold of low-level lead toxicity, and long-term effects of lead neurotoxicity in adults, including a presentation of the results of an Italian multicenter study.

The session on **Mercury**, chaired by G. Nordberg and P. Grandjean, covered mercury neurotoxicity, exposure

biomarkers for methylmercury, neurodevelopmental toxicity from Mediterranean seafood, inorganic mercury and neurotoxicity, neurophysiological evidence of methylmercury neurotoxicity, mechanisms of disposition of mercury, and exposure biomarkers for methylmercury.

The session on **Manganese**, chaired by D. Mergler and H. Roels, encompassed Mn in infants and mental deficiency, Parkinsonism from environmental exposure, Parkinsonism from welding operations, and manganese biomarkers for manganese exposure.

The session on **Manganese Risk Assessment**, chaired by M. Nordberg and A. Iregren, gave an overview of the current use of methylcyclopentadienyl manganese tricarbonyl in gasoline and a new Health Canada risk assessment for manganese.

The meeting started with welcoming addresses by the present chair of SCTM, M. Nordberg and the previous chair of SCNP, A. Iregren, and the dean of the School of Medicine at Brescia, Luigi Caimi. A selection of invited speakers was mixed with poster contributions. Some presentations dealt with other metals like arsenic. The scientific program started with a lecture by Alessio on "From Lead to Manganese through Mercury: Mythology, Science, and Lessons for Prevention." A complete list of speakers and presentations is available online.

At the end of the workshop, the international scientific committee proposed that the conference adopt a declaration based on the outcome of the meeting. After an extensive plenum discussion on the "Declaration of Brescia," (see box) a consensus was reached among participants that the proceedings should be submitted to ICOH and relevant international organizations and published in a scientific journal to educate the public about threats from toxic metals. The Declaration is now available on the conference website <[www.ntoxmet.it](http://www.ntoxmet.it)> and will be published in a special issue of the *American Journal of Industrial Medicine*, along with selected papers from the NTOXMET workshop.

Monica Nordberg <[monica.nordberg@imm.ki.se](mailto:monica.nordberg@imm.ki.se)> was chairman of the ICOH Scientific Committee on the Toxicology of Metals. She is an associate professor at the Institute of Environmental Medicine, Karolinska Institutet, in Stockholm. Roberto Lucchini <[lucchini@med.unibs.it](mailto:lucchini@med.unibs.it)> was chairman of the ICOH Scientific Committee on Neurotoxicology and Psychophysiology. He is currently at the Institute of Occupational Health at the University of Brescia, Italy.

### Polymers Promoting Quality of Life

by *Jung-Il Jin*

**MACRO 2006—the 41st World Polymer Congress** was held in Rio de Janeiro, Brazil, 16–21 July 2006. The general theme of the congress was “Polymers—Promoting Life Quality.” This congress, chaired by Ailton de Souza Gomes, was the second organized by Brazilian polymer scientists. It occurred 30 years after the first, which was organized by Eloisa Biasotto Mano. More than 1100 scientists (42 percent Brazilian) from 49 countries participated in the conference and the total number of presentations, including posters, was slightly more than 1300 (35 percent Brazilian contributions).

There were 12 plenary speakers: 2000 Nobel Laureate Alan MacDiarmid, Paras Prasad, Louise Slade, James McGrath, Richard Gross, Jose' Carlos Pinto, M. Muthukumar, Yues Gnanou, Eishun Tsuchida, H.W. Spiess, Roeland Nolte, and Samuel Stupp. All gave

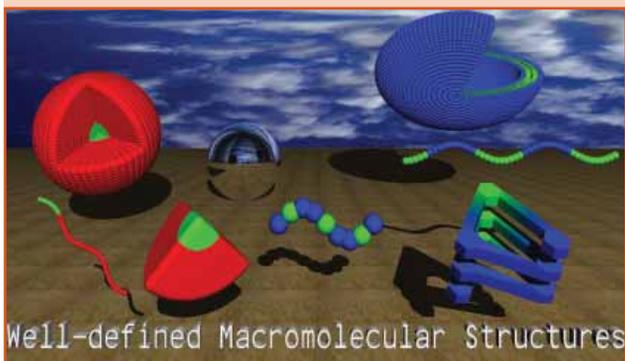
excellent talks and kept the large lecture hall packed every morning.

On most days there were 10 parallel sessions covering practically every aspect of polymer science. The Polymer Education and International Cooperation sessions provided an opportunity to discuss how IUPAC and the Polymer Division can and should be involved in this issue. The Samsung-IUPAC Young Polymer Scientist Award was given to **Greg Tew** of the University of Massachusetts, USA (see box) for his brilliant effort in bridging polymer science with biological problems. Mr. Hong-Shik Ko, president of the Samsung-Total Co., participated in the award ceremony. The IUPAC poster prizes were awarded to Ja-Hyoung Ryu (Yonsei University), Hitoshi Tanaka (Tokushima University), and Youngmin You (Seoul National University).

*Jung-Il Jin* <jijin@korea.ac.kr>, president of IUPAC's Polymer Division, served as the IUPAC Representative at MACRO 2006. Jin is currently in the Department of Chemistry at Korea University, College of Sciences.

**Greg Tew** earned his B.S. in chemistry from North Carolina State University in 1995 and his Ph.D. in 2000 from the University of Illinois-Urbana, where he studied under Prof. Sam Stupp. His work on self-assembling rod-coil molecules lead to an understanding of the important molecular structures and association energies governing nanostructure formation. While in graduate school, he received the Beckman Research Fellowship and American Chemical Society Organic Division Fellowship in 1998 and 1999, respectively. After graduating, he spent one year in Prof. William DeGrado's laboratory at the University of Pennsylvania studying biomimetic principles. This work led to two publications and the formation of a new company, PolyMedix. In 2001, he began a faculty position at UMass and since then has received a number of prestigious awards, including the highest honor given by the federal government to young investigators, the Presidential Early Career Award for Scientists and Engineers, which he received in 2004.

<[www.pse.umass.edu/tew](http://www.pse.umass.edu/tew)>



### Biodiversity and Natural Products

by *Michio Murata*

Biodiversity in metabolites has been providing chemists with a great number of research targets. Natural products chemistry in Japan has a long and diverse history and plays a central role in the development of biological and biomedical molecular sciences. **The ICOB-5 & ISCNP-25 IUPAC International Conference on Biodiversity and Natural Products**, held 23–28 July 2006 in Kyoto, Japan, was chiefly organized by three scientific societies that represent different disciplines: The Chemical Society of Japan; The Pharmaceutical Society of Japan; and Japan Society of Bioscience, Biotechnology, and Agrochemistry. The organizing committee, headed by Daisuke Uemura of Nagoya University, consisted of scientists from all over Japan in the field of biodiversity and natural products-related chemistry.

Approximately 1200 participants from 32 nations attended the symposium, which was held at Kyoto International Conference Hall. The scientific program comprised around 600 poster presentations and 94 lectures. Information on the 17 plenary lectures can be found at <[www.tennenyuuki.ne.jp/iupac](http://www.tennenyuuki.ne.jp/iupac)>. While this symposium has been held biennially in various

## Conference Call

countries, this was the third time it was held in Japan, following meetings in 1964 and 1988.

As evidenced by the presentations and discussions at the conference, natural products chemistry and biodiversity chemistry have made great progress.



The conference should provide the foundation for new trends and facilitate the growth of young scientists who will be future leaders in these fields. As shown in the conference logo,

harmony between society and natural products chemistry and biodiversity chemistry has been embodied to a great extent. Following are the main topics covered at the conference:

- Isolation and Structure Elucidation of Natural Products
- Synthesis of Natural Products and their Models
- Biosynthesis and Genetic Engineering on Natural Products
- Spectroscopy in Natural Products Chemistry
- Molecular Mode of Action on Natural Products and Drugs
- Chemical Biology and Related Areas
- Chemistry and Biochemistry Related to Biodiversity
- Drug Discovery and Developments

The Program Committee selected the following three scientists for the IUPAC poster prizes:

- Kazuma Murakami (Kyoto University, Japan), "Formation and Stabilization Mechanism of the  $\beta$ -Amyloid Radical"
- Ken Ohmori (Tokyo Institute of Technology, Japan), "Convergent Approach to Oligocatechins Based on the Flavonoid-Sugar Analogy"
- Michael V. Perkins (Flinders University, Australia), "Total Synthesis of Auripyron A"

The next conference, ICOB-6 & ISCNP-26, will be held in Canada in 2008. Russell Kerr of Florida Atlantic University will be the chair of the conference.

Michio Murata <murata@ch.wani.osaka-u.ac.jp> served as secretary general of the conference. He is currently a professor in the Department of Chemistry, Graduate School of Science, Osaka University.

## Pesticide Chemistry

by Ken Racke

The 11th IUPAC International Congress of Pesticide Chemistry was held 6–10 August 2006 in Kobe, Japan. This long-standing conference was established more than 40 years ago, and the meeting in Kobe marked the first return to Japan since 1982. The congress was organized under the auspices of the IUPAC Division on Chemistry and Environment (VI) and the Pesticide Science Society of Japan (PSSJ), and the meticulous planning and flawless execution were in large measure due to the strong leadership provided by key members of PSSJ, including Organizing Chairman Hideo Ohkawa, Organizing Vice-Chairman Isao Ueyama, PSSJ President Ken Umetsu, Scientific Committee Chairman Hisashi Miyagawa, and Chief Secretariat Mitsuru Sasaki.



Ken Racke

More than 1100 chemists from 52 countries participated in the congress, which was organized around the theme "**Evolution for Crop Protection, Public Health, and Environmental Safety.**" The core of the scientific program consisted of welcoming speeches on behalf of PSSJ and IUPAC, 5 keynote addresses, more than 100 invited lectures, and nearly 600 posters. All the traditional technical strengths of past congresses were well represented by posters and lectures distributed among such main topics as new chemistry, natural products, biopesticides and transgenic crops, mode of action and resistance, environmental chemistry and analysis, metabolism and toxicology, and risk assessment and regulation. The broad range of interests was exemplified by the topics selected for the keynote addresses:

- James Collins, DuPont, USA, "Challenges and Opportunities in Crop Protection over the Next Decade"
- Kenji Mori, University of Tokyo, Japan, "Searching for Environmentally Benign Methods for Pest Control—Reflections of a Synthetic Chemist"
- Shivaji Pandey, FAO, Italy, "Hunger and Malnutrition Amidst Plenty—What Must be Done?"
- Yang Yongzhen, Institute for the Control of Agrochemicals, Ministry of Agriculture, China, "The Current Status of Pesticide Regulation and Management in China"

## Conference Call

- Ken Racke, IUPAC, USA, "Safety Assessment and International Trade Implications of Pesticide Residues in Food"

The value of the conference's large poster sessions was enhanced by the organization of 15 topical poster workshops during which selected poster authors were invited to briefly note major points of their research, following which an open discussion occurred. The innovative nature of the research and high quality of the poster presentations was recognized through a series of gold, silver, and bronze awards that were presented across three categories. In addition, a special poster award recognizing outstanding research in scientifically emerging countries was presented for each of the three categories. The Poster Award Committee was chaired by John Unsworth of the IUPAC Division VI Advisory group on Crop Protection Chemistry and included several members of the Division VI Committee. Financial sponsorship for the poster awards was provided by Bayer CropScience. Gold award winners received an IUPAC certificate and a 100 000 Yen prize. The top awardees and their poster topics are listed below:

- Naoya Ichimaru, Kyoto University, Japan, "Alacacetogenins Are a New Class of Inhibitors of Mitochondrial Complex I"
- Neil Millar, University College of London, UK and Zewen Liu, Nanjing Agricultural University, China, "A Nicotinic Acetylcholine Receptor Point Mutation Conferring Insecticide Resistance Causes Reduced Agonist Potency to a Range of Neonicotinoids"
- Yumi Akiyama, Hyogo Prefecture Institute of Public Health and Environmental Science, Japan, "Multiresidue Analysis of 500 Pesticides in Agricultural Products Using GC/MS and LC/MS"

One innovation incorporated into the programming for Kobe involved 28 seminars organized around luncheons (18) or dinners (10). Each of these one-hour sessions was sponsored by a company, government institute, or scientific association that provided a meal to participants and organized a lecture, discussion, or demonstration topic of their choosing. Between 100 and 240 individuals attended each seminar and the events were quite popular among the attendees, both for the interesting technical aspects and free meals. The topics of these sessions were as diverse as the hosting organizations, and examples of sponsors included the Fraunhofer Institute, Sumitomo



**Gold medal poster winner Neil Millar offering his thanks on behalf of all awardees. Poster Award Committee Chair John Unsworth of IUPAC is at the far right.**

Chemical, Immunochemical Society of Japan, IUPAC, and the U.S. Department of Agriculture.

Pesticide chemistry plays an important role in crop protection and agricultural production. This role has been the foundation for many of the main topics that have comprised the IUPAC Congress of Pesticide Chemistry over the years. As reflected by the conference theme, the Kobe Congress organizers also chose to emphasize the role and importance of pesticides in public health protection and disease vector control. Lecture and poster sessions were organized around the topic of vector control chemistry, and a poster workshop discussion was devoted to the specific topic of mosquito control. A luncheon seminar featured Pierre Guillet, director of the World Health Organization's Global Malaria Program, who explained the increasingly important role of insecticide-treated bednets.

In addition to the academic research community, government regulators and industry were also well represented in the congress program. For example, invited lecturers included top regulatory officials from the Japan Ministry of Health, Labor, and Welfare; Japan Ministry of Agriculture, Fisheries, and Forestry; U.S. EPA Office of Pesticide Programs; Chinese Ministry of Agriculture; German Office of Consumer Protection; and Thailand Ministry of Public Health. Industry participation was strong via the technical program of lectures and posters, a healthy commercial exhibition (56 booths), and luncheon and evening seminars. As part of the technical program, a "Research Director Forum" was also organized that focused on industrial R&D success stories and future directions for crop protection chemistry. This first-ever event for the congress series began with short speeches by each of the VP-research directors of the most important agrochemical companies (Bayer, BASF, Dow, DuPont, ISK, Sumitomo, and Syngenta) and was followed by a lively panel discussion.

The Congress organizers made unique efforts to educate the broader public regarding crop protection chemistry and its value to modern society.

## Conference Call

Approximately 370 members of the public, consumer groups, and news media participated in an open seminar (in Japanese), which featured Masuru Kitano of Meiji University and emphasized the role and importance of contemporary pesticide technologies. Members of the news media were invited to the opening ceremonies and a subsequent press conference that featured key members of the organizing committee. As a result of these efforts, public awareness of the IUPAC Congress and the importance of pesticide chemistry were raised through several feature articles that appeared in Japanese newspapers and a report on the morning news of Japanese TV station NHK.

IUPAC members played important roles in the planning and execution of the congress, and served prominently on the Congress Advisory Board and the Scientific Program Committee, as session chairs, and invited lecturers. The IUPAC poster awards recognized outstanding poster contributions. An IUPAC booth was developed for the exhibition to display informational materials and highlight crop protection chemistry-related projects. Two IUPAC projects that are nearing completion sponsored seminars as a means of disseminating conclusions and recommendations. These included a seminar on "Global Availability of Information on Agrochemicals<sup>1</sup> and a seminar on "Impact of Transgenic Crops on the Use of Agrochemicals and the Environment."<sup>2</sup> The IUPAC Division of Chemistry and the Environment helped fund the attendance of chemists from scientifically emerging countries.

Further information on the recently concluded congress, including abstracts and a colorful newsletter that was published each day of the congress (The Kobe Gazette), is available via the congress website at <[www.iupac2006.jtbcom.co.jp](http://www.iupac2006.jtbcom.co.jp)>. The Congress proceedings, to include keynote addresses and invited lectures, will be produced by Wiley-VCH, with a target publication date of March 2007. The 12th IUPAC International Congress of Pesticide Chemistry is being organized in cooperation with the Royal Australian Chemical Institute for July 2010 in Melbourne, Australia. Information on future plans will be available at the congress website <[www.raci.org.au/iupacipc2010](http://www.raci.org.au/iupacipc2010)>.

### IUPAC Project References

1 John B. Unsworth, <[www.iupac.org/projects/2001/2001-022-1-600.html](http://www.iupac.org/projects/2001/2001-022-1-600.html)>

2 Gijis A. Kleter, <[www.iupac.org/projects/2001/2001-024-2-600.html](http://www.iupac.org/projects/2001/2001-024-2-600.html)>

Ken Racke <[kracke@dow.com](mailto:kracke@dow.com)>, a global regulatory leader with Dow AgroSciences in Indianapolis, Indiana, USA, is president of the IUPAC Division of Chemistry and the Environment.

## Chemistry Education for Humanity

by Morton Z. Hoffman

The 19th International Conference on Chemical Education (ICCE) was held 12-17 August 2006 at Sookmyung Women's University in Seoul, Korea. The conference, which had as its theme "Chemistry and Chemistry Education for Humanity," attracted more than 300 participants from 36 nations. It was organized by a committee headed by Conference Chairman Jung-Il Jin and Organizing Committee Chairman Choon H. Do.

Along with IUPAC, the Korean Chemical Society (KCS) cosponsored the conference as part of its 60th anniversary celebration and in recognition of 2006 as the Year of Chemistry, as declared by the Korean government.

The conference featured a number of very distin-

### CCE Directions and Priority Areas

- To foreground the importance of a learner-centered chemistry curriculum, both in the developed and developing world. The extent to which this is done should be one criterion used to assess educational projects.
- To give priority to initiatives that highlight the relationship between chemistry and sustainable development, consistent with the goals of the UN Decade for Sustainable Development.
- To continue to support initiatives that highlight ethical concerns in chemistry, including the collaboration that has developed between IUPAC and OPCW (Organization for the Prohibition of Chemical Weapons).
- To target CCE initiatives toward increasing the public understanding of chemistry. By working closely with COCI and other IUPAC Divisions, CCE plans to obtain broad approval for, and implementation of, a CCE report proposing a niche for IUPAC in the public understanding of chemistry.
- To continue support of the biennial International Conferences on Chemical Education (ICCE), which are flagship activities for CCE. We seek to more fully integrate ICCE activities into the work of CCE and use ICCE conferences to report the outcomes of CCE projects and bring participants together to implement CCE strategies.
- To build chemistry education networks, using fully the multicultural competence within CCE.
- To articulate clear directions for the Chemistry Education for Development subcommittee, and include the Flying Chemist Program as an integral part of the work of that subcommittee.

Please direct comments/questions to CCE Chairman Peter Mahaffy <[peter.mahaffy@kingsu.ca](mailto:peter.mahaffy@kingsu.ca)>.

## Conference Call

guished chemists and educators as plenary lecturers. Following are a few examples:

- Peter Atkins (UK), "The Challenge of Education"
- Aaron Ciechanover (Nobel Laureate, Israel), "The Ubiquitin Proteolytic System: From Basic Mechanisms through Human Diseases and onto Drug Targeting"
- Onno De Jong (The Netherlands), "Making Chemistry Meaningful: Conditions for Improving Context-Based Chemistry Education"
- Ann Nalley (president of the American Chemical Society, USA), "Applications of Computer Molecular Modeling in Teaching Organic Chemistry"
- Viktor Obendrauf (Austria), "More Small-Scale Hands-on Experiments for Easier Teaching and Learning"
- Su-Moon Park (Korea), "Chemistry Education for More Chemistry Majors"
- Bassam Shakhashiri (USA), "Enlightenment, the Responsibilities of the Enlightened, and Exhortations for Good Teaching"

KCS President Eun Lee gave welcoming remarks and opened the conference. Among the many topics covered at the conference were the following:

- public understanding of chemistry
- the role of chemists
- inorganic chemistry
- multimedia and visualization
- teacher education
- women and chemistry
- green chemistry
- microscale laboratory techniques
- instructional strategies
- experiments and demonstrations

In total, more than 300 presentations were made, including 120 posters, many of which were offered by elementary, middle, and high school teachers. Further details of the program are available on the ICCE 2006 website at <[www.19icce.org](http://www.19icce.org)>.

Three IUPAC Poster Prizes were awarded to the following individuals:

- Yoon-Ki Kim (Korea), "Analysis of Science Teachers' Views on Philosophy of Science"
- Marie H du Toit (South Africa), "Preparing Teachers for Reform—Chemistry Teacher Education: Teaching Chemistry Through Workshops for Teachers—A Report on a Successful Program"
- Mauro Mocerino (Australia), "Preparing Teaching Assistants for First Year Chemistry Laboratories"

One outstanding part of the conference program was the exhibit of posters by school children on the theme "Chemistry for Humanity." These posters were the winning entries from an international contest organized by Science Across the World, the IUPAC Committee on Chemistry Education, and the Korean Chemical Society. The exhibit showcased 13 posters from age group 10–13 and 41 posters from age group 14–16. The winners were chosen from 945 entries from 32 countries. Coverage of the competition appears on pages 4–7 of this issue of *CI*.



Conference organizer Choon Do and Lida Schoen (CCE and SAW) stand near the poster display in the conference hall. See more on page 4.

The ICCE was also the venue for the annual meeting of the IUPAC Committee on Chemistry Education (CCE). Chaired by Peter Mahaffy (Canada), CCE consists of eight titular members, eight divisional representatives, and about 20 national representatives. The committee approved the minutes of its meeting in Beijing in August 2005, received the minutes of the CCE strategy meeting in Puerto Rico earlier in 2006, and heard reports from the following subcommittees: Development of Materials for Raising Awareness about the Chemical Weapons Convention (see *imPACT*, p. 22), Public Understanding of Chemistry, Chemistry for Development, Microscale Group, and DIDAC. The chairman also reviewed the committee's objectives for the coming years (see box on page 32). CCE received an update on the Bologna process in Europe and the development of the EuroBachelor degree in chemistry. CCE will meet next in Torino, Italy, in August 2007, at the IUPAC General Assembly.

The 20th ICCE will be held 3–8 August 2008 in Pointe aux Piments, Mauritius (see page 35).

**Morton Z. Hoffman** <[hoffman@chem.bu.edu](mailto:hoffman@chem.bu.edu)> is a professor at Boston University, Massachusetts, USA, and is U.S. National Representative to the IUPAC Committee on Chemistry Education.