

Conference Call

Advanced Materials

by Michael Hess

The 17th POLYCHAR Conference—Annual World Forum on Advanced Materials, held 21–24 April 2009, was organized by Jean-Marc Saiter and his team at the Institute of Materials Research of the University of Rouen, Technopole du Madrillet, Saint Etienne du Rouvray in Haute Normandie, France. A Short Course on Polymer Characterization was held on 20 April.

The conference, and the many fruitful discussions during breaks and excursions, brought together theorists; researchers involved in modelling, synthetic chemistry, and processing; students; distinguished scientists; and newcomers to materials science and engineering.

The forum focused on the following areas:

- Nanomaterials and Smart Materials
- Electrical and Dielectric Properties
- Surfaces and Interfaces
- Structure-Properties Relationships
- Materials Synthesis
- Biomaterials, Green Polymers, Biodegradable Polymers, Recycling
- Mechanical Properties and Performance
- Rheology and Processing

There were 164 participants from 40 countries and 4 continents, presenting some 250 contributions. Many students attended the presentations and 60 presented their own results. It is not at all the intention of

POLYCHAR to have a high number of participants and parallel sessions but rather to attract young scientists and advanced and graduate students to give them the opportunity to meet with colleagues and well-known scientists to exchange experiences, make contacts, and present their results to the scientific community. There were 30 invited and special lectures together with 116 regular oral contributions.

The annual POLYCHAR Conferences, which have been IUPAC-sponsored for several years, are well known for combining materials science with polymeric materials. The name “POLYCHAR” has its origin in polymer characterization. The short course is an educational project of the IUPAC Polymer Division.

As already noted, POLYCHAR encourages student and young investigator presentations in particular. Although encouraged by the organizers to present oral contributions, many students' presentations were found in two poster sessions comprising 136 excellent contributions.

The POLYCHAR Prize Committee, chaired by Goerg Michler, Martin Luther University of Halle-Wittenberg, awarded a number of prizes. The Carl Klason Prize for the Best Student Paper was awarded to three *ex aequo* winners:

- Vivian Ikem, Imperial College London for her paper on highly porous polymer foams synthesized from templates
- Renata Pires, Federal University of Rio de Janeiro for her presentation on tailor-made copolymers for reduction of friction in aqueous solutions



Participants at the 17th POLYCHAR Conference—Annual World Forum on Advanced Materials.

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- David Yan Dong, University of Washington, Seattle, for his presentation on patterned electrochromic polymeric windows

Diplomas of Distinction for Student Presentations were awarded as follows:

- Mohammad Ali Aravand, Torbiat Modares University, Tehran, Iran, for his presentation on phase inversion emulsification of epoxies with non-ionic block emulsifiers
- Lyubov Bardash, Institute of Macromolecular Chemistry, Kyiv, and University of Lyon, for her presentation on performance modification of poly(butylene terephthalate) by multiwall carbon nanotubes

IUPAC Diplomas of Distinction for a Student Poster Presentation were awarded as follows:

- Khadidja Arabeche, Martin Luther University, Halle-Wittenberg and University of Rouen, for presentation on multilayer films in confinement geometry
- Yoo-Shung Choi, Chosun University, Gwangju, South Korea, for his presentation on flame retardant composites containing inorganic waste fillers
- Orathai Pornsunthorntawe, Chulalongkorn University, Bangkok, Thailand, for a presentation on surface modification of biopolymeric films via adsorption of a biosurfactant

The Bruce Hartmann Award for a Young Scientist went to Caroline Terrié, University of Rouen, for her presentation on biodegradable materials from agro-based byproducts. The Jürgen Springer Award for a Young Scientist was given to Haley E. Hagg Lobland, University of North Texas, Denton, for her presentation on brittleness of materials and its implications for composites and impact testing. The International Materials Science Prize, introduced in 2007, was awarded to Alexander Bismarck, Imperial College London, for his work on nanocomposite foams and emulsion templating and for his successful international cooperations.

The conference is also a platform for the esteemed Paul J. Flory Research Award. This year, it was given *ex aequo* to Elizabete F. Lucas, Federal University of Rio de Janeiro, for her pioneering work on the application of polymeric materials in many stages of petroleum extraction and processing; Masaru Matsuo,

Nara Women's University, for his pioneering work on gelation and crystallization; and to Ron Sanderson, University of Stellenbosch, for his work establishing and developing advanced polymer science in South Africa.

It is difficult to select particular contributions from the multitude of excellent oral and poster contributions from universities, research institutes, and industry without overlooking important contributions. However, the following presentations were certainly highlights of the conference:

- "Experimental Characterization and Constitutive Modelling of Polycarbonate under Changes of Temperature, Strain, and Strain Rate," M. Negahban, A. Goel, K. Strabala, J. Vogeler, R. Feng
- "Conditioning Polymers in Supercritical Fluids," Jiasong He
- "Mainchain-Type Organoboron Quinolone Polymers: Synthesis and Photoluminescence Properties; Yoshiki Chujo, Yuuya Nagata, Atsushi Nagai
- "Antireflection and Superhydrophobicity of Nanostructured Polymeric Films," Han Sup Lee, Ki Woon Choi, Yi Seul Yang, Joon Ho Lee
- "Toughnessenhancement of Multicomponent Polymers: Nanomechanical Background," Goerg H. Michler
- "Intermingled Polymer Gels and Organogels," Jean-Michel Guenet, Debarshi Dasgupta, Ayyapanpillai Ajayaghosh, Cyrille Rochas Witold Brostow, Haley E. Hagg Lobland, and R.P. Singh
- "Active Sensing and Repair in Polymer Composite Materials," Véronique Michaud, Eva Kirkby, Rui De Oliveira, and Jan-Anders Månson

The Short Course on Polymer Characterization, an integral part of the conference, is taught by well-known specialists who provide a basic overview for students and newcomers as well as an update on popular characterization techniques. A unique feature of the course is that the lecturers are available for the participants during the whole conference. Due to IUPAC sponsorship, it was possible to waive the fee for all students. There were about 50 course participants. The subjects addressed were as follows:

- "Thermophysical Methods," Michael Hess, Germany
- "Dynamic Mechanical Analysis," Kevin P. Menard, USA

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- "Chromatography," Dusan Berek, Slovakia
- "Microscopy for Morphology," Goerg Michler, Germany
- "Tribology," Witold Brostow, USA
- "Solid-State NMR," C. Lorthioir, France
- "Light-, Neutron-, and X-ray Scattering by Polymer Systems," J.-M. Guenet, France
- "Rheology," H. Muenstedt, Germany

Each presenter has the opportunity to submit a manuscript, based on his or her presentation, to the POLYCHAR Scientific Committee. The manuscripts will be published in scientific journals after the usual process of peer review. Macromolecular Symposia and Chemistry & Chemical Technology are all willing to publish POLYCHAR-17 papers.

Future POLYCHAR conferences are scheduled as follows:

- POLYCHAR-18, Siegen, Germany, April 2010
- POLYCHAR-19, Katmandu, Nepal, 2011
- POLYCHAR-20, Zagreb, Croatia, 2012
- POLYCHAR-21, Gwangju, South Korea, 2013

For more information see <www.unt.edu/POLYCHAR>.

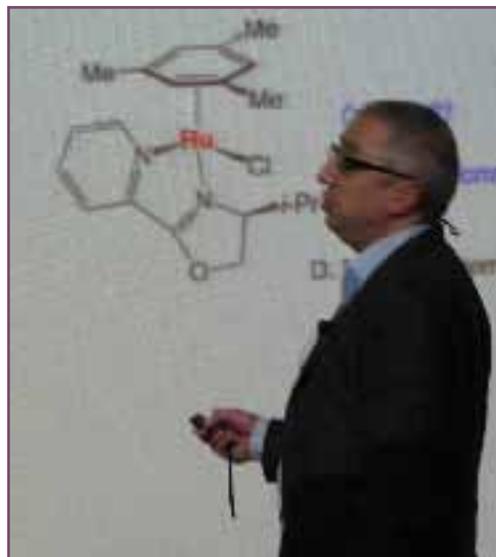
Heterocyclic Chemistry

by *Lisa McElwee-White*

The **10th Annual Florida Heterocyclic and Synthetic Conference** was held 8-11 March 2009 in Gainesville at the University of Florida. Attendees had the opportunity to participate in an excellent program that included 12 plenary lectures, 40 invited lectures, 5 short courses, and a poster session. Short courses were taught by William Dolbier (University of Florida) on synthesis of fluorinated compounds, John Joule (University of Manchester) on azoles, Ronald Castellano (University of Florida) on non-covalent interactions of aromatics and heterocycles in molecular recognition, Gordon Gribble (Dartmouth College) on the applications of metals in heterocyclic chemistry, and Girolamo Cirrincione (University of Palermo) on eight-membered heterocyclic rings.

Plenary lectures were presented by the following scientists:

- Mike Martinelli, Arena Pharmaceuticals, USA



Amir Hoveyda, giving a plenary lecture at the 10th Annual Florida Heterocyclic and Synthetic Conference.

- Chris Senanayake, Boehringer Ingelheim, Germany
- Amir Hoveyda, Boston College, USA
- Ben Feringa, University of Gröningen, The Netherlands
- Janine Cossy, EPSCI, France
- Frank Fang, Eisai Research Institute, USA
- Stephen Martin, University of Texas, USA
- Joel Hawkins, Pfizer, USA
- Erick Carreira, ETH, Switzerland
- Philip Kocienski, University of Leeds, UK
- Koji Nakanishi, Columbia University, USA

The more than 175 attendees at the conference, included approximately 40 graduate students and postdocs; along with academic and industrial research chemists from more than 30 countries. Heterocyclic compounds are of particular importance to the pharmaceutical industry and many of the industrial delegates came from this area. The conference attracted a number of commercial exhibitors, including publishers, chemical suppliers, and instrument makers.

Lisa McElwee-White is a professor of Chemistry at the University of Florida and a former titular member of the Organic and Biomolecular Chemistry Division Committee.