

Conference Call

the agricultural practices. Thus, for example, it can be expected that if the degradation of a pesticide is temperature dependent, then it will degrade faster under tropical conditions compared to temperate conditions. Similarly, leaching may be more important in areas of high rainfall compared to the drier areas of the region. Properties of the soil (pH, CEC, content of organic matter, etc.) might also differ and affect movement and degradation of pesticides.

Before a pesticide is used, it is important to carry out an environmental risk assessment taking account of local conditions. In Latin America discussions on risk assessment first took place in the 1990s and in 2002 the Andean community published the regulation for registration of pesticides and provided a framework for performing environmental risk assessments. For a risk assessment to be useful it is essential that the data used are relevant and of appropriate quality. These data can come from the registrants of pesticides and from open scientific literature, in this latter case the data may not have undergone quality control or quality assurance and their reliability needs to be assessed before they are incorporated in the risk assessment. The term "risk", when used in the process of risk assessment, has a specific definition *i.e.* "the combination of the probability, or frequency of occurrence, of a defined hazard and the magnitude of the consequences of the occurrence". The assessment is carried out to enable risk management decisions to be made *e.g.*, restricting certain uses of a pesticide. Environmental exposure assessments are carried out using established computer models which determine the likely concentration of a pesticide in the various environmental compartment, soil, water, sediment, etc. Thus, in Brazil, models developed by the United States Environmental Protection Agency have proven to be useful for determining likely environmental concentrations and comparing these to ecotoxicity values to determine the risk to flora and fauna. Validation of models for local conditions is an ongoing process and clearly, as well as good data, a good understanding of their relevance to local conditions is required to give results which equate to pesticide levels to be expected under actual use conditions.

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Speakers at the "Fate of Pesticides in Latin America" Symposium (From left to right: Dr. John B. Unsworth, Dr. Ana Cione, Professor Jussara B. Regitano, Dr. Ximena Patino, Dr. Rafaela M. Rebelo, Professor Keith R. Solomon)

Advanced Materials (POLYCHAR2017)

by Chris Fellows and Melissa Chan Chin Han

Organized by



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The 25th **World Forum on Advanced Materials (POLY-CHAR2017)** (derived from **POLY**mer **CHAR**acterization), under the auspices of the Scientific Committee of World Forum on Advance Materials and International Union of Pure and Applied Chemistry (IUPAC), was hosted by the Institut Kimia Malaysia at the Putra World Trade Centre, Kuala Lumpur, Malaysia on 9-13 October 2017. A total of 2 plenary, 99 invited, 55 oral, 48 posters and 21 participants from 31 countries were recorded. With the significance of the 25th anniversary of the series, it was an occasion for more than usual

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celebration, coinciding also with the 50th anniversary of both the Institute Kimia Malaysia and the IUPAC Polymer Division. The conference dinner was attended by the Malaysian Minister of Science, Technology and Innovation, Datuk Wilfred Madius Tangau. At the closing ceremony Dr. Kevin Menard (Veritas Testing and Consulting), one of the founders of POLYCHAR, talked about how far the series has come from its beginning as an opportunity for graduate students at the University of North Texas to practice giving presentations about their projects.

The philosophy of POLYCHAR is to visit a different part of the world each year to give students and young scientists an opportunity to present their scientific work to a larger international audience, to meet prominent scientists, and to attend tutorials held by international well-known scientists. Previous POLYCHAR meetings had been held in Denton, Texas, (where POLYCHAR had been founded in the year 1992), Guimaraes, Portugal (2004), Singapore (2005), Nara, Japan (2006), Buzios, Brazil (2007), Lucknow, India (2008), Rouen, France (2009), Siegen, Germany (2010), Kathmandu, Nepal (2011), Dubrovnik, Croatia (2012), Gwangju, South Korea (2013), Stellenbosch, South Africa (2014), Lincoln, Nebraska, USA (2015) and Poznan, Poland (2016).

Conference presentations ranged broadly over topics in polymer and composite chemistry, physics, and engineering. They were organised under the themes of:

- Advanced biological, biomedical and environment-friendly polymers
- Electroactive polymers
- Latex chemistry and technology
- Materials for clean and sustainable energy
- Multi-techniques of materials characterization
- Nanomaterials and smart materials
- Natural and synthetic elastomers
- Polymers and nutrition
- Polymeric gels and soft matter
- Processing, rheology and mechanical properties

Two plenary lectures were presented by Zairossani Mohd Nor [Deputy Director General, (Research and Innovation) of the Malaysian Rubber Board, Malaysia] on Positioning R&D towards innovative and sustainable rubber industry and Volker Abetz (University of Hamburg, Germany) on POLYmer Membrane CHARacterisation by scattering, microscopy, and thermal methods.

The Short Course, a POLYCHAR tradition, was

supported by IUPAC and held on the first day of the meeting. Seven renowned researchers delivered graduate-level tutorial presentations on the following topics:

- Characterization of polymer electrolytes by dielectric response using Electrochemical Impedance Spectroscopy (**Chan Chin Han**, University Technology MARA, Malaysia)
- Thermal analysis used to analyze the glass transition phenomenon (**Jean-Marc Saiter**, University of Rouen, France)
- Viscoelastic properties of polymers (**Michael Hess**, University of North Texas, USA)
- A simple approach to the mathematical treatment of diffraction and scattering of X-ray and visible light (**Masura Matsuo**, Nara Women's University, Japan)
- Determination of thermodynamic properties by scattering techniques (**Volker Abetz**, University of Hamburg, Germany)



Joint opening ceremony of 25th World Forum on Advanced Materials (POLYCHAR2017); the 8th Biennial Regional Symposium on Total Laboratory Management—Quality, Safety, Environment and Laboratory Informatics (QSEL2017); and the LabAsia 2017 From left: Dato' Dr. Ong Eng Long (President, IKM and the Organizing Chairman of POLYCHAR2017), Datuk Seri Panglima Wilfred Madius Tangau (Minister Of Science, Technology and Innovation Malaysia), Prof. Dr. Greg Russell (President of IUPAC Polymer Division), Prof. Dr. Jean-Marc Saiter (Vice President of POLYCHAR Scientific Committee), Mr. C P Saw (Managing Director of ECMI ITE), Assoc. Prof. Dr. Ramzah Dambal (Deputy Secretary-General of Ministry of Science, Technology and Innovation Malaysia) and Datuk Haji Ismail Bin Talib (Director General, Department of Chemistry Malaysia)

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Short Course participants and speakers

- Micromechanics of polymers by electron microscopy (**Sven Henning**, Fraunhofer Institute for Microstructure of Materials and Systems, Germany)
- Characterisation of crosslinks in vulcanised rubbers: From simple to advanced techniques (presented by Kok Lang Mok of the Malaysian Rubber Board for **Aik Hwee Eng** of the Institute Kimia Malaysia).

The Short Course speakers were available for all participants for further discussions throughout the Forum and the short course notes can be accessed on IUPAC website (<https://iupac.org/project/2016-033-1-400>).

In the POLYCHAR tradition, a number of prizes were awarded at the conclusion of the event. The prestigious **Paul J. Flory Research Prize 2017** went to **Volker Abetz** of Institute of Polymer Research of the Helmholtz-Zentrum Geesthacht and University of Hamburg, Germany, for his exemplary research into block copolymer behaviour.

The **International POLYCHAR Materials Research Prize 2017** was awarded to **Kevin Menard**, one of the founders of the POLYCHAR series for his life's work in the science of polymer materials.

The **Bruce Hartmann Prize for Young Scientists** was awarded to **Valentina Marturano** of the University of Naples, Italy, for her presentation entitled *Visible light responsive polymer nanocapsules*.

The **Jürgen Springer Prize for Young Scientists** was awarded to **Dou Xiaoqiu** of the University of Siegen, Germany, for her presentation entitled *Novel 3D micro-patterned poly(vinyl alcohol) hydrogel platform for the controlled formation of cell spheroids*.

Three **Carl Klason Student Awards** were awarded to: **Florian Kung**, Friedrich-Alexander-University Erlangen-Nuremberg, Germany, for his work on the *structure-ability of grafts for ocular surface reconstruction*;

Jian Liu, University of Science and Technology of China, for her presentation on *Trifunctional CdSe Quantum Dots-Polymer Composite Film with*

Electrochromic, Electrofluorescent and Light-Induced Coloration Effects;

Jyoti Giri, Tribhuvan University, Nepal, for her presentation entitled *Poly(butylene adipate-co-terephthalate) composites with wheat stalk microcellulose: morphological, mechanical, thermal and biodegradation behavior*.

Three **IUPAC Poster Prizes** were awarded to:

Benoit Basse, Onyx Développement, for his poster on *Peanut suspensions crosslinked by means of microbial transglutaminase*;



Top: Paul J. Flory Research Prize 2017: Volker Abetz (left) and Sven Henning (right—Chairman of POLYCHAR Prize Committee)

Above: Paul J. Flory Research Prize 2017: Kevin Menard (left) and Sven Henning (right)

Khong Choy Hung, Tunku Abdul Rahman University, Malaysia, for her poster on *Effect of carbon nanotubes in polyaniline nanocomposites on heavy metal removal*;

Muchao Qu, Friedrich-Alexander-University Erlangen-Nuremberg, Germany, for her poster on *Conductivity of melt spun poly(methyl methacrylate) composites with aligned carbon fibers*.

Four IUPAC Fellowships were offered by IUPAC for the support of graduate students and young scientists from developing countries, which were awarded to Chayaporn Pareseecharoen (Thailand), Jyoti Giri (Nepal), Lau Kam Sheng (Malaysia) and Manus Sriring (Thailand).

POLYCHAR 26 will return to Kathmandu, Nepal—the site of the very successful POLYCHAR 19—in March 2019. A POLYCHAR satellite meeting, TISAT 2018, is planned for Tbilisi, Georgia, in 2018.

Finally, the 6th Malaysia Scientific and Laboratory Equipment Exhibition and conference (LabAsia 2017) was held in conjunction with POLYCHAR2017 and QSEL 2017. This biennial international trade exhibition for laboratory equipment and services serving the ASEAN scientific community was jointly organised by IKM and ECMI ITE Asia Sdn Bhd. More than 6,000 visitors attended the three-day exhibition. LabAsia 2017 featured 154 exhibitors and principals from ten countries, including China, Germany, France, Britain and the United States, showcasing new products and services.

Assoc. Prof. Dr. Chris Fellows was IUPAC Representative and Assoc. Prof. Dr. Melissa Chan Chin Han was Secretary of Organizing Committee of POLYCHAR2017



Recipients of POLYCHAR Prizes, IUPAC Fellowship, members of POLYCHAR Scientific Committee, IUPAC Polymer Division and POLYCHAR2017 organizing committee

held from 27 to 29 September 2017 at the University of Konstanz and, thus, for the first time in Germany. It was jointly conducted with the **Konstanz Symposium Chemical Biology**, which is hosted bi-annually by the Konstanz Research School Chemical Biology (KoRS-CB), a top-level graduate school funded within the framework of the German Excellence Initiative.

“We have merged the two conferences although both have their own tradition”, emphasized Andreas Marx, head of the local organizing team. In his welcome speech he pointed out the history of and the link between the two conferences: The ISBOC series of meetings was inaugurated in 1986 in New York and has moved around the world at three year intervals. Ten symposia have been held till now in places like Biarritz (France), Pune (India), Sheffield (England), Toronto (Canada), Beijing (China) and Torino (Italy). The Konstanz Symposium Chemical Biology, however, is quite younger. It started in 2010 with the aim to bring early stage researchers in contact with experts in the research fields of Chemical Biology: Synthetic Chemistry, Cellular Biochemistry, Biophysics, Biomedicine, and Computational Life Science. Since its inauguration, the symposium has become a bi-annual event which has been held four times till date.

By linkage of the two conferences, the organizers were able to line up an excellent list of speakers comprising two keynote lectures by Nobel Laureates, 16 plenary lectures by invited speakers from across the globe as well as short talks by postdoctoral and doctoral researchers, and poster presentations. The plenary lecturers were as follows: Jürgen Bajorath (Germany), Matthew Bogoy (USA), Aaron Ciechanover (Israel, 2004 Nobel Laureate), Ulrike Eggert (UK), Michael Famulok (Germany), Dorothea Fiedler (Germany), Philipp Holliger (UK), Claudia Höbartner (Germany),

Bioorganic Chemistry in an Interdisciplinary Context

by **Andreas Marx** Chair of the Local Organizing Committee of ISBOC-11

One of the great challenges of the future is to explain the process of life in chemical terms. This ambitious task requires a strong interdisciplinary cooperation and mutual understanding of scientists from both Chemistry and Biology. The **11th International Symposium on Bioorganic Chemistry (ISBOC-11)** focused on this interdisciplinary task by exposing Chemical Biology as important research field. The conference was