

Advanced Polymers via Macromolecular Engineering

by Aneli Fourie

The 13th International Conference on “Advanced Polymers via Macromolecular Engineering” (APME 2019) was held in the beautiful, historic town of Stellenbosch in South Africa from 15-18 April 2019.

A satisfactory number of delegates (180 participants) participated, representing 25 countries other than South Africa. Other western countries represented were Australia, Belgium, Brazil, Canada, China, France, Germany, Hungary, Ireland, Israel, Italy, Korea, Malaysia, Nigeria, Portugal, Russia, Saudi Arabia, Singapore, Spain, Switzerland, The Netherlands, Turkey, United Kingdom and USA. 72 students actively participated in APME 2019.

The APME 2019 Conference was opened by Yusuf Yagci, IUPAC Representative, Istanbul Technical University, Turkey, and Eugene Cloete, Vice-Rector (Research, Innovation and Postgraduate Studies, University of Stellenbosch, South Africa).

92 talks were presented (including 12 plenary/key-note speakers, 41 invited speakers and 39 oral submissions), by experts in their field, reporting the state-of-the-art in various fields, often encompassing the last few years of research. All others were accommodated in a lively poster session especially popular for student presentations.

41 Posters of a high standard were selected and presented at the poster session on Tuesday, 16 April. Three young scientists (MSc / PhD level) were awarded poster prizes sponsored by The Royal Society of Chemistry.

- **Lisa Fortuin**, University of Stellenbosch; “Biodegradable polymeric prodrugs for the targeted delivery of artemether- lumefantrine”
- **Jana Kohn**, Humbolt-Universität zu Berlin; “Expanding chemical space of mussel-inspired polymerization toward multifunctional monomers”
- **Elizalde Iraizoz Fermin**, University of Basque Country, Spain; “Dynamically crosslinked thermos-responsive polyurethanes”

Wiley-VCH: Macromolecular Journals sponsored two prizes for best talk and were awarded to the following young scientists (MSc/ PhD level):

- **Hannes Houck**, Ghent University, Belgium; “Light-stabilised dynamic materials”
- **Kristina Pflug**, University of Hamburg, Germany; “Closing the circle of microstructure and polymer properties for polyethylene via a combined analytical and modelling approach”

An Elsevier Workshop was presented by Christiane Barranguet entitled “How to produce an international publication: Getting published & Promoting your work.”

The conference chairs comprised of Bert Klumperman (University of Stellenbosch, South Africa), Munmaya Mishra (Altria – Center for Research & Technology, USA) and Yusuf Yagci (Istanbul Technical University, Turkey). The local and programme committee comprised of Bert Klumperman, Albert van Reenen, Harald Pasch and Peter Mallon (University of Stellenbosch, South Africa). The scientific committee comprised of Michel Baltas (CNRS, University of Toulouse, France), Dominique Bonnet (University of Strasbourg, France), Gilbert Lassale (Evotec, France), Sebastien Papot (University of Poitiers, France), Michel Perez (Pierre Fabre, France), Janos Sapi (SCT & University of Reims-Champagne-Ardenne, France), Luc van Hijfte (SCT & Novithera, France). The scientific advisory board comprised of Lian Hutchings (University of Durham, United Kingdom), Eva Harth (University of Houston, USA), Jean-Francois Lutz (Institut Charles Sadron, France), Fiilp Du Prez (Ghent University, Belgium) and Hölger Schonherr (University of Siegen, Germany).

More details and full program are available online <http://academic.sun.ac.za/apme>

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Polymer for Sustainable Development

by Chin Han Chan, Holger Schönherr, and Jyoti Giri

POLY-CHAR 2019 [Kathmandu], also known as International Polymer Characterization Conference, under the auspices of the Scientific Committee of POLY-CHAR and IUPAC, was hosted by the Nepal Polymer Institute (NPI) and the Research Centre for Advance Science and Technology (RECAST), Tribhuvan University, Nepal at Park Village Resort, Kathmandu, 19-23 May 2019. The theme of the conference was “Polymer for Sustainable Development.”

POLY-CHAR is a nonprofit, non-governmental organization devoted to create a friendly environment to share information, organize student exchange and cooperation, to hold international meetings and to provide a platform in the field of Materials Science, in particular Polymer Materials Science and Technology, for scientists from all over the world, disregarding where they are from. An important goal of POLY-CHAR is to offer a conference for PhD students and young researchers, so that they will create their own scientific



Opening ceremony. Front row: 2nd from left – Prof. Dr. Rameshwar Adhikari (Organizing Chairman of POLY-CHAR 2019); 2nd from right – Prof. Dr. Jean-Marc Saiter (President of POLY-CHAR Scientific Committee); and (far right) Prof. Michael Hess.

networks and experience a true scientific community. POLY-CHAR is rooted in polymer synthesis, characterization, processing, application, recycling, education and its environmental/social consequences.

A total of 7 keynote speakers, 30 invited speakers, 28 oral speakers, 45 poster presenters and 50 participants from 16 countries with more than 50 % of international participants participated in POLY-CHAR 2019 [Kathmandu]. This inaugural conference conducted two special symposia on

1. NMR on Biomolecules, and
2. Polymers Nanotechnology for Nepal.

The conference presentations were organised under the themes of:

1. Advances in Polymer Synthesis
2. Biomolecules, Biomedical Materials and Biotechnology
3. Nanomaterials, Smart Polymers
4. Polymer Characterization
5. Polymer Degradation, Recycling and Environment Protection
6. Polymer Electronics and Bioelectronics
7. Polymer Physics, Theory and Simulations
8. Rheology and Processing

The inauguration of the conference was made by Jhala Nath Khanal (Former Prime Minister of Nepal); the other dignitaries were Er. Ganesh Shah (former Science Minister of Nepal), Rajesh Pandit (President of Nepal Polymer Institute), Rameshwar Adhikari (Organizing Chair of POLY-CHAR 2019), Jean-Marc Saiter (President of POLY-CHAR Scientific Committee), Michael Hess (Vice President of POLY-CHAR Scientific

Committee) and Melissa Chan Chin Han (IUPAC Representative).

The POLY-CHAR Short Course was held on the first day of the conference, including five graduate-level tutorial presentations on the following topics:

- PVT for characterization of polymers; (Jürgen Pionteck, Leibniz Institute of Polymer Research Dresden, Germany)
- Thermal analysis: a focus on thermogravimetry; (Jean-Marc Saiter, Onyx Development, Nutriset Group, France)
- Viscoelastic properties of polymers; (Michael Hess, University of North Texas, USA)
- Morphology, mechanical properties and nanoscale analysis of polymer systems with atomic force microscopy; (Holger Schönherr, University of Siegen, Germany)
- Electron microscopic methods to investigate morphology and micromechanical processes of polymers; (Sven Henning, Fraunhofer Institute for Microstructure of Materials and Systems, Germany)

Outstanding researchers were honored with the POLY-CHAR awards, which are named in honour of three distinguished Nobel Laureates:

The Richard Robert Ernst Award went to Chuanliang Feng, Shanghai Jiaotong University, China; the Jean-Marie Lehn Award went to Ralph Paul Cooney, The University of Auckland, New Zealand and Pierre-Gilles de Gennes Award was awarded to Mehrdad Negahban, University of Nebraska, USA for their exemplary research work.

The POLY-CHAR Best Oral Presentations were awarded to:

- Jiji Abraham, Mahatma Ghandi University, Kottayam, India, for her work on Ionic liquid modified carbon nanotube based styrene butadiene rubber nanocomposites
- Rongyu Xia, Peking University, China for his work on Effect of fiber treatment and process and process variation on morphology, thermal, mechanical and water absorption behaviours of natural fiber nanocomposites
- Netra Lal Bhandari, Tri-Chandra Campus, T.U. Nepal, for his work on Steering elastic sheerhorizontal waves by tunable locally resonant metasurface
- Bhim Kafle, Kathmandu University, Nepal, for his work on Reduced graphene oxide (rGO) films for hole transport layer for perovskite solar cells.

Three IUPAC Awards for Best Student Posters were awarded to:

- Arpita Roy, IIT (ISM) Dhanbad, India for his work on β -cyclodextrin based dual responsive hydrogel for colonic drug delivery
- Achyut Nepal, Department of Physics, Amrit Science Campus, Kathmandu, Nepal for his work on TiO_2 nanoparticles as an electrode of dyes sensitized solar cells (DSSC)
- Chanda Bhandari, College of Biomedical Engineering and Applied Sciences, Kathmandu, Nepal, for her work on Application of zinc oxide nanoparticles loaded with slug slime as surgical glue for wound closure and healing

Three POLY-CHAR Best Student Posters were awarded to:

- Lucas Grossmann, Hof University of Applied Science, Hof, Germany for his work on Investigation of the influences of composition and processing of pressure sensitive adhesive polymeric materials laminated with textiles
- Tabli Ghosh, IIT Guwahati, Guwahati, India, for her work on Development of non-toxic magnetic cellulose nanofiber dispersed chitosan based edible nanocoating
- Yuchen Shi, Hefei National Laboratory for Physical Sciences at the Microscale, Hefei, China, for his work on Novel electrochromic-fluorescent bi-functional devices based on aromatic viologen derivatives

The coming POLY-CHAR conferences were planned for POLY-CHAR 2020 [Venice], Italy, 18-22 May 2020 and POLY-CHAR 2021 [Auckland], New Zealand, 25-29 January 2021.

Macrocyclic and Supramolecular Chemistry

by Pierangelo Metrangolo

The **14th International Symposium on Macrocyclic and Supramolecular Chemistry** (ISMSC2019, www.ismsc2019.eu) was held from 2 to 6 June 2019 in Lecce, Italy. The symposium was organized by Politecnico di Milano and Fondazione Politecnico di Milano, and chaired by Pierangelo Metrangolo, Francesca Baldeli Bombelli, and Giancarlo Terraneo. Co-organizers of the event were the local academic and research institutions, such as Università del Salento, and its School of Advanced Studies, ISUFI, the Nanotechnology Institute (Nanotec) of the National Research Council (CNR), and the Center for Biomolecular Nanotechnologies (CBN@UniLe) of the Italian Institute of Technology (IIT).

The symposium was attended by 712 scientific participants from 43 different countries. The program included 2 Nobel Laureate lectures (45 minutes each), 3 Award lectures (40 minutes each), 22 keynote talks (30 minutes each), and 24 invited talks (20 minutes each). In addition, there were 12 oral (15 minutes each) and 24 short paper (5 minutes each) contributions selected by the organizers from the submitted abstracts. The poster session enabled 550 participants to share their work in this exciting meeting for the supramolecular chemistry community. In particular, ISMSC2019 hosted lectures from the 2016 Nobel Laureates in Chemistry (Sir James Fraser Stoddart, and Bernard L. Feringa), as well as from the 2019 Izatt-Christensen Award (Luisa De Cola), Cram-Lehn-Pedersen Prize (Xiaopeng Li), Sessler Early Career Researcher Prize (Ross Stewart Forgan), and the Natural Product Reports Emerging Investigator Lectureship (Konrad K. Tiefenbacher) winners.

The symposium received the endorsement, among others, of IUPAC, the International Year of the Periodic Table of Chemical Elements (IYPT2019), the European Chemical Society (*EuChemS*), the Italian Chemical Society (SCI), and the Materials Research Society (MRS). As far as IYPT2019 is concerned, ISMSC2019 was selected by IUPAC as the venue for the announcement of ten elements of the Periodic Table of Younger Chemists celebrating IUPAC 100.

IUPAC supported the Microsymposium **“New Directions in Supramolecular Chemistry: Nanomedicine”**, which was held within the ISMSC2019 program and has shown how, recently, Supramolecular Chemistry (*i.e.*, use of inter-molecular interactions to build-up self-assembled systems) has been exploited