Chemistry of Energy & Food — 245th American Chemical Society (ACS) National Meeting and Exposition, 7 – 11 of April 2013, New Orleans, Louisiana, USA

On April 7 – 11, 2013, the American Chemical Society (ACS) held its 245th National Meeting and Expositions in New Orleans (Louisiana) – for the 10th time in this city. The ACS Meeting is one of the largest world-wide conferences and expositions concerning chemistry and other related sciences. Moreover, the whole academic community all over the world highly appreciates scientific contact with the ACS Society managed by its president - Ph.D. Marinda Li Wu. This year New Orleans welcomed more than 15,000 chemists, academics, students and other professionals from the USA and abroad. Participants had opportunities to hear news and lectures about the relationship between chemistry, energy and food and they could discuss the newest trends in progress and scientific achievements in these fields in order to find something to satisfy their needs and expectations. The 245th ACS National Meeting was attended by 11 presidents of chemical societies from around the world, as well as leaders from industry, academia, government, and small businesses; all of whom have accepted invitations to speak at the symposia.

The general theme for the meeting in New Orleans was Chemistry of Energy and Food. This theme engages many of the ACS Divisions by involving biotechnology, agricultural, food chemistry, environmental issues regarding food vs. fuel, the new science of nanotechnology, analytical advances ensuring food and environmental safety, and fundamental chemistry behind biofuels and bio-based products derived from a variety of "green" feedstocks.

In the course of the congress, 9 plenary lectures and 11,798 ordinary lectures (30 min. each) were given in 29 divisions during 111 simultaneous sessions in the vast Morial Convention Center and in conference rooms of a dozen or so New Orleans' hotels. Besides the lectures, 4,500 poster presentations prepared by scientists from the whole world as well as 250 exhibitions presenting relevant equipment and appliances, materials and services offered by industry were exhibited. The technical program of the congress was so extensive that its description took up 490 pages despite having left out lecture abstracts.

During the National Meeting, in order to commemorate the distinguished French scientist Anselme Payen – discoverer of cellulose, the annual award bearing his name has been given since 1920 by the Cellulose & Renewable Materials Division of ACS. The Anselme Payen Award is given annually to honour and encourage outstanding professional contributions to science and chemical technology of cellulose as well as its allied products. It is the most prestigious and internationally recognized award in the field of cellulose research.

This year's Anselme Payen Award was bestowed on Prof. Hans-Peter Fink, head of the Fraunhofer Institute for Applied Polymer Research in Potsdam, Germany. The Fraunhofer Institutes constitute the largest applied research organisation in the European Union and Prof. H.-P. Fink - long-standing partner in many scientific projects of research and development teams of Prof. Andrzej K. Bledzki of University of Kassel (Kassel, Germany) and West Pomeranian University of Technology (Szczecin, Poland) is the first recipient of this Award coming from any of Fraunhofer Institutes.

In the Anselme Payen Award Symposium honoring Prof. Fink that was entitled "From Cellulose Raw Materials To Novel Products", 42 scientists were personally invited by the Cellulose & Renewable Materials Division of the ACS to deliver a lecture. Prof. Fink held a very interesting lecture called "Novel Cellulose Materials and Processing Routes" in which WAXS and 13C-CP/MAS-NMR investigations concerning the supermolecular structure and phase transitions of cellulose by alkalisation were presented. He proved that bio-component cellulose-lignin fibers can be considered as potential precursors for carbon fibers, and finally that the use of rayon tire yarn as an existing technical cellulose fiber opens up novel prospects for fully bio-based composites. Prof. Fink's co-worker Dr. Johannes Ganster (co-authors: Jens Erdmann and Huihui Zhang from Fraunhofer Institute) held a lecture entitled "Cellulose Fiber Reinforcement For Improved PLA Heat Stability Via Accelerated Crystallization". He presented the influence of interfacial modification, i.e., strong and weak fiber-matrix adhesion, on PLA crystallisation and showed the effect of crystallinity on the resulting mechanical properties of PLA and PLA composites as a function of the annealing time and temperature. Some conclusions regarding the injection moulding of PLA and rayon reinforced PLA shaped bodies with higher heat resistance were also drawn.

Representing the West Pomeranian University of Technology, Dr. Magdalena Urbaniak bestowed a Congratulation Letter of the Senate of this university for the honorable Award of the ACS upon Prof. Fink, and then held her lecture entitled "Cellulose Fiber Reinforced Bio-Based Epoxy Resins" (co-authors: Prof. Andrzej K. Bledzki – West Pomeranian University of Technology and University of Kassel, M.Sc. Christian Berger – University of Kassel, Dr. Axel Boettcher – Boettcher Consult, Germany). She presented research activities focused upon the thermal and mechanical behaviour of cellulose fiber reinforced bio-epoxy materials with assorted formulations. These formulations were based on standard epoxide and epoxidized plant oil with varying bio-hardeners in differing matrix formulations and fiber contents. The results obtained of the thermal and mechanical tests revealed possibilities for the replacement of petrochemical epoxy systems with materials made from renewable resources in many technical applications.

Among other lectures held in the Cellulose & Renewable Materials Division, worthy of mention is the lecture entitled "Microwave-Assisted Synthesis, Dissolution, And Fiber Spinning Of Cellulose Carbamates" given by Jinping Zhou (with co-authors: Feiya Fu, Xuemei, Lina Zhang from Wuhan University, Wuhan, China and Daoxi Li from Hubei Tiansi Technology Co. Ltd., Xiogan, Hubei, China and Tetsuo Kondo from Kyushu University, Fukuoka, Japan). In this study, an efficient and green method for the synthesis of cellulose carbamates from a mixture of cellulose and urea by microwave heating was presented. Such an environmentally friendly process could have a great impact on current cellulose industries.

The 245th American Chemical Society National Meeting and Exposition in New Orleans was a distinguished event, not only in terms of science and industry, but in regards of logistics as well. Day by day 56 sessions proceeded on the premises of the New Orleans' Morial Convention Center simultaneously, while 55 other sessions took place in conference rooms in hotels in New Orleans at the same time without any disturbance. One ought to marvel at the competent and efficient arrangement and organisation of the congress conducted by the ACS. Information concerning the 245th ACS Meeting and Exposition can be found on the website www.acs.org/neworleans2013.

Dr. Magdalena Urbaniak - West Pomeranian University of Technology, Szczecin