

Conference Call

The program focused on nine topics:

- Advances in polymer synthesis
- Polymers for separations and environmental protection
- Polymers in medicine, biochemistry and agriculture
- Novel functional polymers
- Polymers for catalysis and energy applications
- Biocatalysis and polymers synthesis
- Biopolymers and their applications
- Functional Metal-Organic Frameworks and Coordination Polymers, synthesis and applications
- Polymers in Cultural Heritage

POC-16 attracted nearly 150 participants from 29 countries. There was a strong presence of young researchers, with students making up ~ 40 % of the participants. There were two Plenary Lectures, "Polyhomologation: From organic to polymer chemistry" by Nikos Hadjichristidis (KAUST, Saudi Arabia) and "Photosensitive polymeric materials", by Maria Vamvakaki (Foundation for Research and Technology Hellas, and University of Crete), together with nine invited talks given by Steven Armes (Polymerisation induced self-assembly), Christine Jerome (Polyphosphoesters as a new platform for the design of particulate drug delivery systems), Barbara Fowler (filling in for Judit Puskas, Novel UV-curable rubbers for biomedical applications), Corneliu Davidescu (Chemically modified polymer matrices with applications in environmental protection), Gheorghe Ilia (Modern methods used in synthesis of polyphosphoesters), Spiros Anastasiadis (Structure and dynamics in polymer nanocomposites), Theoni Georgiou (Designing well defined polymeric materials), and Joanna Pietrasik (Polymer brushes: From synthesis, through properties to applications). These were accompanied by 63 oral presentations, in addition to two poster sessions at which 57 communications were presented. The meeting allowed ample time for discussion, both inside and outside the lecture and poster sessions, and greatly benefited from the presence of enthusiastic young researchers.

Many of the presentations from this Conference will be published in a special issue of *Pure and Applied Chemistry*.

The next POC Conference (POC-17) will be held in 2018 in Montpellier, France and will be organized by Prof. Ghislain David. We anticipate that this will be as successful and enjoyable as POC-16.

Phosphorus Chemistry

by *Nikolay E. Nifantiev*



Held for the first time in Russia, the 21st International Conference on Phosphorus Chemistry (ICPC-2016) took place 5-10 June 2016, in Kazan, the capital of the Republic of Tatarstan. ICPCs are typically organized bi-annually in the world's largest scientific centers. Since the first ICPC, which took place in 1964 in Germany, these conferences have played an important role in the development of phosphorus chemistry. ICPCs are often endorsed by IUPAC because of their outstanding scientific level and international importance.

The decision of the IUPAC Organic and Biomolecular Chemistry Division (Division III) to support ICPC-2016 was based on two principle arguments in favor of Tatarstan and its capital Kazan. First, this region is known world wide in the chemical community because of the many eminent researchers belonging to the renowned Kazan school of chemists. This school is one of the world leaders in the number of discovered named reactions and fundamental chemical approaches. The Kazan school was initiated in the 19th century by Professors Klaus and Zinin and was continued by the great Butlerov, followed by Markovnikov, Zaytsev, Vagner, and Reformatsky. The twentieth century gave brilliant phosphorous chemists—Academicians Alexander Arbuzov and his son Boris, Professors Pudovik, Abramov and later on Academicians Alexander Konovalov and Oleg Sinyashin (the Chair of ICPC-2016; Director of A.E. Arbuzov Institute of Organic and Physical Chemistry, Kazan Scientific Center, Russian Academy of Sciences), and many other renowned researchers.

The second reason is the regional excellence of Tatarstan with regard to the level of its chemical and petrochemical industries. They are of priority for regional development and it is not surprising that the government, and personally The President Minikhanov, have provided support to make this conference successful and productive. Specifically, it should be mentioned that the chemical companies of Tatarstan meet the requirements of IUPAC's "Responsible Care" initiative, aimed at promoting an understanding of chemists' responsibility in using, handling, and producing chemicals. One of the leaders in this field is PJSC «Nizhnekamskneftekhim». Local companies intend to join as Company Associates of IUPAC for the

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exchange of information regarding current issues of relevance to Chemistry and Industry relationships.

The team of the A.E. Arbuzov Institute of Organic and Physical Chemistry managed the organization of ICPC-2016, which took place at the modern International Congress Centre "Korston". This provided an excellent infrastructure for the opening ceremony, plenary, and thematic parallel scientific sections. The intensive scientific program included 12 plenary and 41 keynote lectures, 75 oral and 24 flash presentations, as well as 180 poster communications, which were enjoyed by about 350 participants from 26 countries all over the world.



*Medal of the
Arbuzovs Prize*

In 1997, and by the Order of the President of the Republic of Tatarstan, the International Arbuzovs Prize in Organophosphorus Chemistry was established in the memory of the renowned Russian chemists Alexander and Boris Arbuzovs. The Prize is awarded

to researchers with outstanding achievements in the field of phosphorus chemistry. Over the last decade, 10 world-famous scientists from Russia, USA, Poland, France, Germany, Japan, UK, and Ukraine have been awarded the prize. At the Opening Ceremony of ICPC-2016 the President of the Republic of Tatarstan presented the Prize for the eleventh time: Professor Yufen Zhao from Xiamen University (China) was pronounced as the new Arbuzovs Prize laureate. She made a great contribution to fundamental phosphorus chemistry and her works helped to connect various scientific



Professor Yufen Zhao (China), the Arbuzovs Prize laureate.

fields, including elemento-organic synthesis, molecular biology, and medicinal chemistry. During the award ceremony, Prof. Zhao said "I am very proud getting this Prize. It's my first visit to Kazan. Kazan is a very beautiful city, but first of all I would like to express my admiration for the development of science in Tatarstan and especially the attention and kindness to scientific problems from the Tatarstan Government". Prof. Zhao gave the Arbuzovs Prize lecture, "Phosphorous Chemistry and Evolution of Biological Molecules", which opened the scientific program of ICPC. It covered all key research directions of phosphorus chemistry and focused on the progress in organophosphorus chemistry, new phosphorus reagents in organic synthesis, phosphorus in coordination and inorganic chemistry, phosphorous in catalytic processes and life sciences, and industrial phosphorous chemistry including new age materials design.

An important part of the scientific program was devoted to School-Conference "Rational Design of Phosphorus Substances with Desired Properties". A number of IUPAC members, including Professors G.M. Blackburn (UK), M. Mikolajczyk (Poland), J.J. Weigand and E. Hey-Hawkins from Germany, K. Lammertsma (Holland), D. Gates (Canada), X. Chen and Z. He from China, I.P. Beletskaya, N.P. Tarasova (current IUPAC President), A.G. Gabibov, and N.E. Nifantiev (the latter four from Russia) reported on recent research results achieved in their laboratories.

In addition to the exciting scientific sessions and productive discussions, a very interesting social program was organized during ICPC-2016, which left unforgettable personal impressions of the ancient but also very modern Tatarstan, as well as its amicable citizens.



Greetings of the Arbuzovs Prize laureates by the President of the Republic of Tatarstan: (from left to right): Marian Mikolajczyk (laureate 2009), Masaaki Yoshifuji (2005), Rustam Minnikhanov (President of the Republic of Tatarstan), Yufen Zhao (most recent laureate, 2015), Michael Blackburn (2011), and Francois Mathey (2001).