

SPECIAL
ISSUE

Biofest: Bioinspired Chemistry, Biomaterials and Bioelectrochemistry

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The idea behind this special issue was to showcase how a multidisciplinary approach can lead to important scientific insights in three separate bio-related themes at the interface between biology and chemistry. This project was spear-headed by our late colleague and *ChemPlusChem* board member, Silviu Bablaban, and this issue is dedicated to his memory. An obituary recounting Silviu's fine contribution to science can be found on page two of this editorial, and was kindly written by Prof. Jean Weiss and Prof. Jean-Marie Lehn.

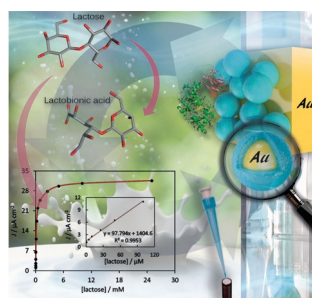
Silviu guided the section in this special issue on bioinspired chemistry, which includes papers on flexible metal–porphyrin dimers (Kobayashi), supramolecular organogel prepared from natural chlorophylls (Tamiaki), the design of chemo-enzymatic catalysts (Tron), mixed-valent complexes as mimics for the active site of methane monooxygenases (Réglie), and a Minireview on hemoproteins to self-assembled molecular wires (Weiss).

Meanwhile, selected articles featuring bioelectrochemistry include two highly important papers (HIP) on cubosomes for drug delivery analyzed through electrochemistry (Bilewicz), an intrinsic self-charging biosupercapacitor (Schuhmann), and a Minireview on enzymatic bioelectrosynthetic ammonia production (Milton & Minter). Plus a very important paper (VIP) on understanding the extremely active [FeFe] hydrogenase from *Desulfovibrio desulfuricans*, which is an excellent candidate for use in solar-to-hydrogen devices (Rüdiger).

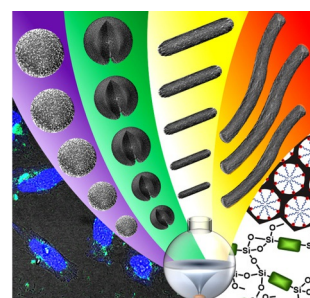
Lastly, the biomaterials section is represented by studies on ultrasmall iron oxide nanoparticles for reduced protein corona

formation (Stephan), organosilica nanoparticles with tunable morphologies (Khashab), glucose-modified silicon nanoparticles for cellular imaging (De Cola), and a HIP on magnetic nanoparticles anchored with dendrons and their imaging capabilities (Begin-Colin).

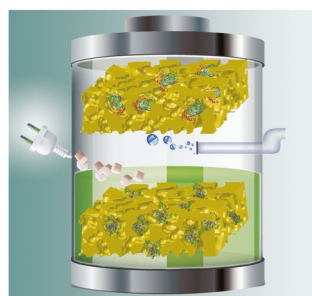
The issue is organized in three sections in which papers from each theme are grouped together for straightforward access. Place your cursor over the any author name within this Editorial to get direct access to that paper. The exciting research within is further highlighted on the covers by the international groups of L. Gorton (Sweden), N. Khashab (Saudi Arabia), E. Magner (Ireland), and S. Shleev (Russia).



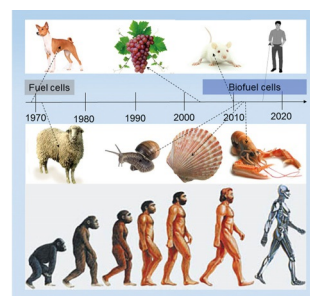
L. Gorton et al.



N. Khashab et al.



E. Magner et al.



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Teodor Silviu Balaban (1958–2016)

When Professor Teodor Silviu Balaban passed away, the sad news struck the scientific community and, in particular, all the colleagues who had recently or in the past shared enjoyable moments with him around a publication draft, at a scientific meeting or over a drink. Last November the field of supramolecular chemistry lost not only an esteemed colleague, but also a friend and a mentor for many young scientists.

Born in Bucharest, Romania, Silviu started his career by earning a diploma in engineering before obtaining a PhD in organic chemistry in 1990 from the Polytechnic University of Bucharest under the guidance of Prof. Dr. E. Cioranescu-Nenitzescu. He then held successive post-doctoral positions in Germany with Prof. Dr. G. Snatzke in Bochum, Prof. Dr. K. Hafner in Darmstadt and Prof. Dr. K. Schaffner in Mülheim as an Alexander von Humboldt and Max Planck Gesellschaft fellow. In 1998 he joined the Université Louis Pasteur in Strasbourg, France, and held a senior researcher position at the Collège de France in Paris while working under the supervision of Jean-Marie Lehn. In 2000 Silviu gained his Habilitation from the Université Louis Pasteur and led a research group at the Institute of Nanotechnology of the Research Center Karlsruhe, Germany, until obtaining a full professorship at the University of Aix-Marseille, France.

From the beginning, Silviu's career path illustrates the variety of his interests and the broad scope of his scientific impact. From the mathematical aspects of chemistry with the design

of topological indexes^[1] to the chemistry of pyrylium salts^[2] and molecular dynamic processes in cyclic pyrylium and pyridinium derivatives, he rapidly found his home in the multidisciplinary study of the self-organization of biological assemblies involved in photosynthesis.^[3] Understanding all the fundamental supramolecular aspects^[4] to decipher the algorithm of the interactions involved in the structuring of chlorosomes and light-harvesting systems was the focus of Silviu's research during the last decades. He was particularly interested in the role played by chirality in the control of self-assembly processes and mentioning the subject at any time would lead to enthusiastic debates and a sparkle in his eyes.^[5]

His passionate interest in natural processes and the design of artificial energy-converting prototypical devices led Silviu to extend his research interests to inorganic semiconductors^[6] and carbon nanostructures,^[7] as well as fundamental photo-physics.^[8] Furthermore, his contribution to the understanding of the role played by chirality in supramolecular chemistry is also an important part of his legacy and will be a source of inspiration for the next generation of chemists.^[9] Silviu Balaban, dedicated scientist and warm human being, will be deeply missed by his friends and colleagues.

Jean Weiss (Strasbourg Institute of Chemistry)

Jean-Marie Lehn (Institut de Science et d'Ingénierie Supramoléculaires)

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