

Preface

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The 24th IUPAC International Conference on Physical Organic Chemistry (ICPOC 24)

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The IUPAC sponsored biennial Conference on Physical Organic Chemistry (ICPOC) series bear a long history and a solid reputation as the leading international gatherings on Physical Organic Chemistry. Since their first installment in Crans sur Sierre (Switzerland) in 1972, ICPOC meetings have been held in Noordwijkerhout (The Netherlands, 1974), Montpellier (France, 1976), York (UK, 1978), Santa Cruz (USA, 1980) Louvain-la-Neuve (Belgium, 1982), Auckland (New Zealand, 1984); Tokyo (Japan, 1986), Regensburg (Germany, 1988), Haifa (Israel, 1990), Padua (Italy, 1994), Incheon (Korea, 1996), Florianopolis (Brazil, 1998), Göteborg (Sweden, 2000), San Diego (USA, 2002), Shanghai (China, 2004), Warsaw (Poland, 2006), Santiago de Compostela (Spain, 2008), Busan (Korea, 2010), Durham (UK, 2012), Ottawa (Canada, 2014), Sidney (Australia, 2016). The 24st IUPAC International Conference on Physical Organic Chemistry (ICPOC 24) was held at the University of Algarve, in Faro, Portugal, July 1–6, 2018.

Traditionally, Physical Organic Chemistry relates molecular structure to chemical behavior, by means of the study of structure, reactivity, mechanism and equilibrium in organic systems, aiming at the quantitative, molecular level understanding of their properties. Today, Physical Organic Chemistry encompasses a broader range of context, further expanding into materials science, biology and systems chemistry. For the organizers of ICPOC 24, the main goal has been to offer a scientific program that reflects the comprehensive and multidisciplinary approach associated to Physical Organic Chemistry and pinpoints current developments in the area, thus promoting the vibrant and enlightening scientific discussions usually held in ICPOC meetings.

The scientific program of ICPOC 24 comprised 12 plenary lectures (by Bernard Feringa, Carlos Afonso, David Collum, Frances Arnold, Guy Lloyd-Jones, Janine Cossy, Jinpei Cheng, João Rocha, Manabu Abe, Peter Chen, Stefan Grimme and Tito Scaiano), 11 keynote lectures, 11 invited lectures and 58 oral communications, split among three parallel sessions and 114 poster presentations, associated to the three streams of the conference: Physical Foundations of Organic Reactivity, Mechanism and Catalysis, Supramolecular and Systems Chemistry.

ICPOC 24 gathered, at the University of Algarve, 250 participants, from 34 countries and five continents. We were particularly happy with the participation of young colleagues in ICPOC 24 (over 60 % of the participants, including PhD students and post-docs). From the representative participation of young colleagues, and given the quality of the presentations that, we hope, will be reflected in this special issue of *Pure and Applied Chemistry*, we foresee a healthy future for Physical Organic Chemistry.

Article note: A collection of invited papers based on presentations at the 24th IUPAC International Conference on Physical Organic Chemistry (ICPOC 24) held in Faro, Portugal, 1–6 July 2018.

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ICPOC 24 was linked to the celebrations of the International Year of the Periodic Table of Chemical Elements. On July 1st, 2018, in Australia, the first four elements to be portrayed on the celebratory IUPAC100 Periodic Table of Younger Chemists were announced. On the same day, in Portugal, the opening session of ICPOC 24 was hosted by the Faro Municipality, at the Municipal Theatre, in Faro. The session, offered to ICPOC participants and to the general public, comprised two plenary lectures, delivered by Bernard Feringa (2016 Nobel laureate) and Frances Arnold (2018 Nobel laureate). Chemistry teachers from secondary schools in the Algarve were invited to attend. This session truly highlighted the breath of Physical Organic Chemistry, creating the atmosphere and setting the standards for the scientific exchange and debate held throughout the ICPOC 24 conference and thus paving ways toward further developments in Chemical Sciences (<https://www.teatrodasfiguras.pt/pt/agenda/51389/24th-iupac-int-conf-on-physical-organic-chemistry.aspx>).

The venue of ICPOC 24, Faro, is the main city of Algarve. Not far from Faro, near the southwestern most point of continental Europe, lies Sagres, a sacred promontory to the Romans. It was in Sagres that, legendarily, prince Henry the Navigator dreamed and planned the Portuguese discoveries in the 15th century, searching for the unknown while expanding frontiers, in the quest to discovering a sea route to India. In a similar way, physical organic chemists search for new molecules and find new properties, often inspired by nature, in the quest to discovering ways to help solving major societal challenges, thereby contributing to the construction of a better world. Together with an outstanding scientific program, the participants were exposed to the colors, flavors, tastes, history and traditions of Portugal. The conference excursion, offered to all participants, comprised a visit to Fortaleza de Sagres, Cabo de S. Vicente, Forte do Beliche and Lagos. The conference dinner was held in Palácio de Estoi.

We would like to express our gratitude to everyone who supported this conference, from the attendees through the various members of our committees and to our extensive list of sponsors; special acknowledgements are offered to the University of Algarve and the Center of Marine Sciences (CCMAR), to the Portuguese Chemical Society (SPQ), to the municipalities of Faro (CMF) and of Vila do Bispo (CMVB), to HOVIONE and to the Luso-American Foundation for Development (FLAD).

Local Organizing Committee: Maria de Lurdes Cristiano (chair), João Lourenço (co-chair), Ana Garcia, André Lopes, José Moreira, Custódia Fonseca, Carolina Rio, Lília Cabral, Patrícia Amado, Elisa Brás, Bruno Guerreiro, Catarina Pires, Rosário Lopes, and João Duarte (Department of Chemistry and Pharmacy, University of Algarve).

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