Special Issue

Porphyrin and Their Derivatives Synthesis, Characterization, and Applications

Message from the Guest Editors

Porphyrins represent a widely investigated class of macrocyclic coordination compounds with applications in multidisciplinary fields. They exhibit a strong absorption in the visible spectral region and near-infrared, while ordered aggregates consisting of self-assembled porphyrin molecules may enable ultra-fast energy and electron transfer because of the delocalized excited states present in the aggregates as compared to the localized π–π transitions within the monomer. Porphyrins and their derivatives, such as porphyrin triads, liquid–crystalline porphyrins have been widely used as photosensitizers in photodynamic, photothermal therapy (PTT and PDT) and dye-sensitized solar cells (DSSCs), as fluorescent materials in chemical sensors as light harvesting elements in organic solar cells (OSCs), and as charge transport materials in both OSCs and perovskite solar cells (PSCs). The aim of this Special Issue is to highlight the various aspects of their synthesis, functionalization, structural modification and potential applications, with emphasis on photodynamic therapy, photovoltaics, and sensors. Articles reporting novel results or reviews are welcome.

Guest Editors

Prof. Athanassios G. Coutsolelos

Department of Chemistry, University of Crete, Laboratory of Bioinorganic Chemistry, Voutes Campus, Heraklion, 70013 Crete, Greece

Dr. Maria Vasilopoulou

Institute of Nanoscience and Nanotechnology (INN), National Center for Scientific Research (NCSR) "Demokritos", 15341 Agia Paraskevi, Attica, Greece

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Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
materials@mdpi.com

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Materials (ISSN 1996-1944) was launched in 2008. The journal covers twenty-five comprehensive topics: biomaterials, energy materials, advanced composites, advanced materials characterization, porous materials, manufacturing processes and systems, advanced nanomaterials and nanotechnology, smart materials, thin films and interfaces, catalytic materials, carbon materials, materials chemistry, materials physics, optics and photonics, corrosion, construction and building materials, materials simulation and design, electronic materials, advanced and functional ceramics and glasses, metals and alloys, soft matter, polymeric materials, quantum materials, mechanics of materials, green materials, general. *Materials* provides a unique opportunity to contribute high quality articles and to take advantage of its large readership.

Editor-in-Chief

Prof. Dr. Maryam Tabrizian
1. Department of Biomedical Engineering, Faculty of Medicine and Health Sciences, McGill University, Montreal, QC H3A 2B6, Canada
2. Faculty of Dentistry and Oral Health Sciences, McGill University, 3640 Rue University, Montreal, QC H3A 0C7, Canada

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