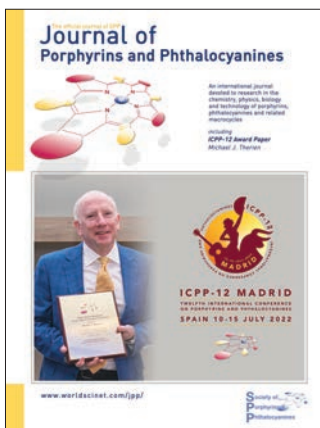


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About the Cover



Michael J. Therien is highlighted on the cover with his prestigious 2022 Lifetime Achievement Award at the occasion of the twelfth International Conference on Porphyrins and Phthalocyanines (ICPP-12) in Madrid, Spain, July 10-15, 2022. Congratulations once again to Mike !

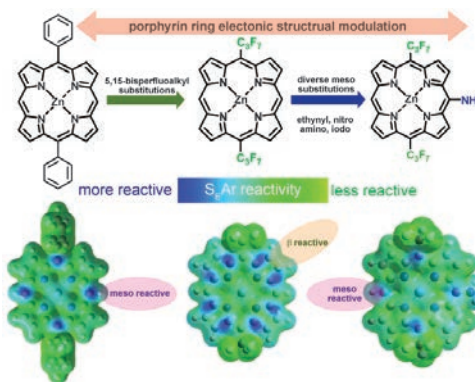
ICPP-12 Award Paper

pp. 741–756

Synthesis and functionalization of electron-deficient perfluoroalkyl porphyrin building blocks for supermolecular systems

Rui Liu, Jiaqi Zhu, Jeff Rawson, Lindsay R. Pederson, Victoria L. Cinnater, Jarrett P. Mansergh and **Michael J. Therien***

Electron-deficient meso-perfluoroalkylporphyrins bearing diverse functional groups pave the way for constructing supermolecular systems that function as novel n-type materials and high potential photooxidants.



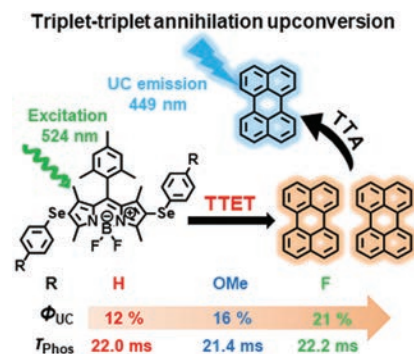
Articles

pp. 757–764

Tuning the triplet population of arylselanyl-BODIPY photosensitizers through substituents engineering for triplet-triplet annihilation photon upconversion with perylene

Ryohei Hasegawa, Masato Ito and Yuji Kubo*

Bis(arylselanyl)BODIPYs with different substituent groups were synthesized and evaluated as triplet sensitizers for upconversion (UC) systems with perylene. The introduction of a substituent group on the phenylselanyl group led to an increase in UC quantum yield. Among them, fluorine-incorporated BODIPY-dye with a long-lived triplet state was determined to be 21% in toluene. The UC efficiency depends on the sensitizers' lifetime, which would enhance the triplet-triplet energy transfer (TTET) efficiency from sensitizers to emitters.

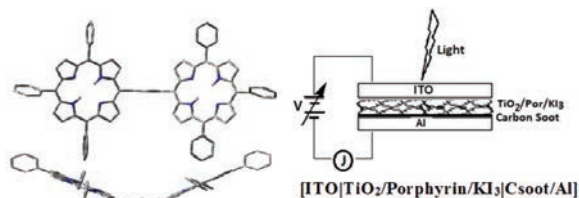


pp. 765–777

Photosensitization of asymmetric molecular, and bimolecular aliphatic- μ -bridged-*meso*-phenyl porphyrin

Isam M. Arafa*, Abeer H. Al-Qaderi, Abdellatif A. Ibdah and Mazin Y. Shatnawi

Current literature on the solid-state photoelectric properties of porphyrin derivatives emphasizes their closely interrelated photoconduction/photovoltaic processes. In the current manuscript, we examined the role of asymmetry on this property in a newly designed model employing standard photoelectrochemical bulk-heterojunction (BHJ) photovoltaic cell arrangement and found to behave as a photoconducting material.

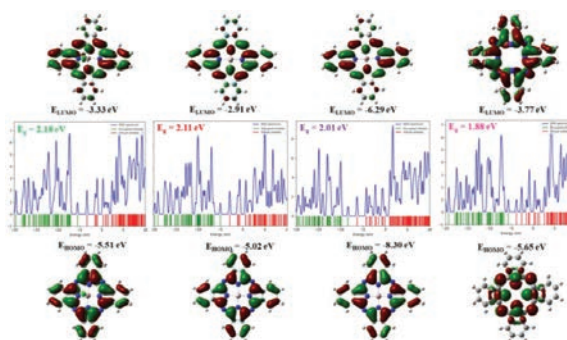


pp. 778–786

A comparative study on the optical properties of AlCl-Pc, AlH-Pc, Al-Pc and phthalocyanine organic compounds

A. Ben Ahmed, M. Benhaliliba*, Y.S. Ocak, C.E. Benouis and A. Ayeshamariam

We made AlPc-Cl and AlPc-H-based heterojunctions using low-cost methods. Current-voltage (I-V) characteristics are shown in a dark and ambient environment. We provide the results of experiments using Raman spectroscopy and UV-visible absorption. The second type of quantum chemical approach (TD-DFT and DFT) was used to investigate the vibrational activity, electronic spectra, energy gap analysis, and hyperpolarizability.



pp. 787–796

Interaction between DNA and cationic metalloporphyrins in ionic liquid solutions

Kaoru Nobuoka*, Kensuke Sumi, Eri Kitagawa, Kenta Sato, Ayumi Nakamura and Satoshi Kitaoka

The interaction between cationic metalloporphyrins and the DNA double helix in ionic liquid solutions was investigated using CD and absorption spectra. The dispersion of porphyrins improved in ionic liquid solutions, and *p*Py intercalated into the DNA double helix, while TMPyP could not interact with DNA. The solvation behavior of ionic liquids, which are organic salts and larger than inorganic salts, depends on the porphyrin structure and may have influenced the interaction between DNA and the porphyrins.

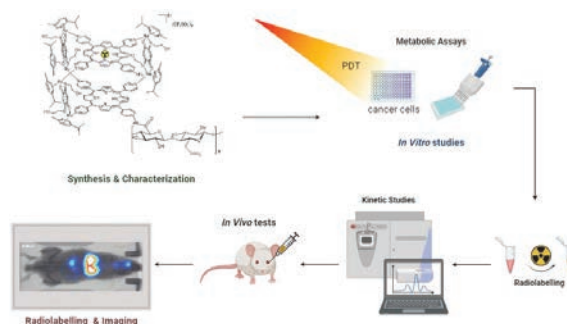


pp. 797–810

Porphyrin metalla-assemblies coupled to cellulose nanocrystals for PDT and imaging applications

João C. S. Simões, Georges Wagnières, Sophia Sarpaki, Vincent Sol and Bruno Therrien*

Radiolabeled photo-responsive metalla-assemblies have been linked to cellulose nanocrystals for improving solubility and biocompatibility. These theranostic agents show excellent PDT activity *in vitro* and great potential for *in vivo* imaging.



pp. 811–817

Effect of bovine serum albumin on the water solubility of hydrophobic corrinoids

Iliia A. Dereven'kov*, Ilya I. Dzvinkas, Vladimir S. Osokin and Sergei V. Makarov

The tight binding of water-insoluble heptaethyl and heptapropyl cobyrinates with bovine serum albumin resulted in the formation of water-soluble complexes. The solubility of heptabutyl cobyrinate in water was achieved by using a large excess of bovine serum albumin.

