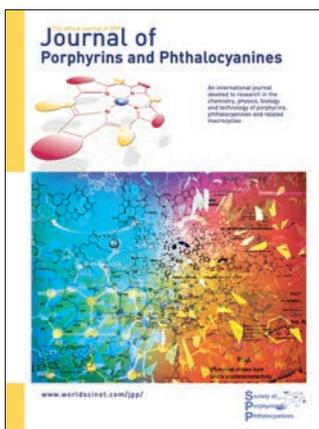


About the Cover



The cover shows a montage of the science presented in the current issue.

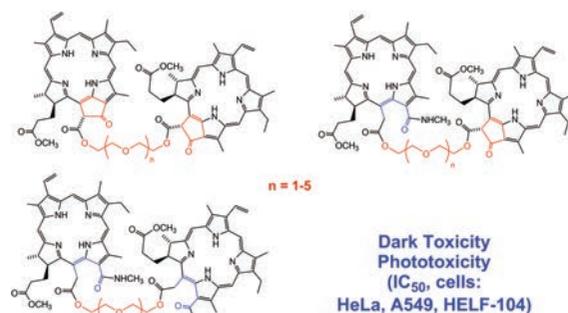
Articles

pp. 91–103

Dimeric derivatives of chlorophyll *a* with fragments of oligoethylene glycols as spacers between macrocycles: Synthesis, dark and photoinduced cytotoxic activity

Olga M. Startseva*, Yana I. Pylina, Dmitry M. Shadrin, Elena S. Belykh, Oksana G. Shevchenko, Ilya O. Velegzhaninov and Dmitry V. Belykh

New dimeric derivatives of chlorophyll *a* with oligoethylene glycol fragments as spacers between macrocycles were synthesized and their dark and photoinduced cytotoxic activities were studied by *in vitro* experiments. The photoinduced action of one of the most active compounds, a phorbins-chlorin dimer with a triethylene glycol fragment as a spacer between the macrocycles, was analyzed in more detail by *in vitro* experiments.

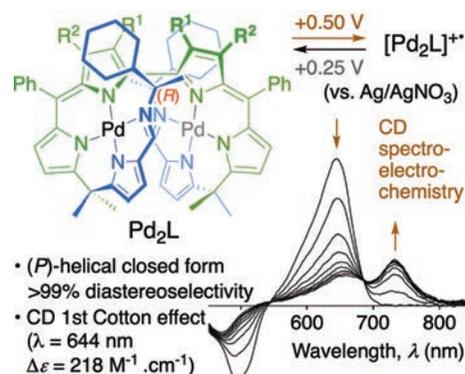


pp. 104–123

Stereochemistry and chiroptical properties of bimetallic single helicates of hexapyrrole- α,ω -dicarbaldimines with high diastereoselectivity

Thi Hien Thuy Nguyen, Chaolu Eerdun, Takuya Okayama, Satoshi Hisanaga, Takumi Tominaga, Tomoyuki Mochida and Jun-ichiro Setsune*

Stereogenic centers introduced at the terminal N-alkylcarbaldimines of the bimetallic oligopyrrole helicates induced high helical sense bias and their chiroptical properties in the Vis-NIR region were redox-tunable.

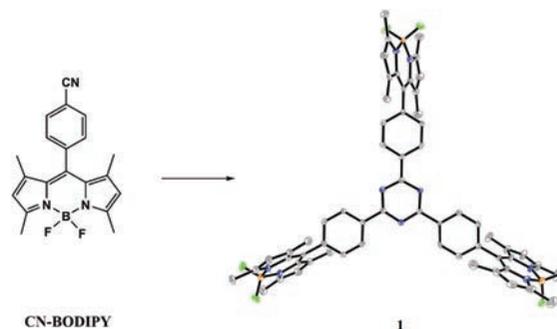


pp. 124–131

BODIPY trimer with 1,3,5-triazine core: Facile synthesis and crystal structure

Chunhua Huang, Bin Shen, Kaili Wang* and Xiaofei Sun*

A new triazine-based BODIPY trimer, 2,4,6-tris(8'-phenyl-1',3',5',7'-tetramethyl-4',4'-difluoro-4'-bora-3a',4a'-diza-s-indacene)-1,3,5-triazine (**1**), was synthesized and characterized. The BODIPY trimer structure of **1** with a triazine core was directly revealed on the basis of single crystal X-ray diffraction analysis with the intermolecular interactions investigated by Hirshfeld surface analysis.



pp. 132–139

Intra-supramolecular electron transfer of the light harvesting porphyrin–phthalocyanine complex in aqueous medium

Mohamed E. El-Khouly*, Ahmed M. Kobaisy, Gehan Sallam and Matsushita Yoshihisa

A good combination! A light harvesting donor–acceptor supramolecular system composed of phthalocyanine (Pc) and porphyrin (P) units to mimic the photosynthetic reaction center complexes. The formed supramolecular Pc-P complex has the advantages of high solubility and stability in an aqueous medium, absorbing light in a wide range of the solar spectrum (UV-Vis-NIR) and with an efficient electron transfer.

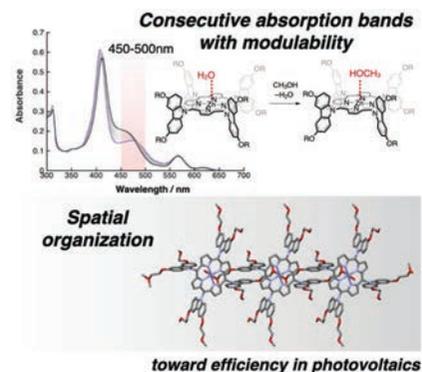


pp. 140–146

Metalloporphyrins substituted with *N*-carbazoyl groups quadruply at *meso* positions

Shin-ichiro Kawano, Sae Kawada, Atsuya Matsubuchi and Kentaro Tanaka*

Porphyrins with *N*-carbazoyl groups exhibit a characteristic broadband in the range of 450–500 nm, which is ascribed to the charge transfer band from carbazole to porphyrin. Ligand exchange at the axial position of the zinc complex with an aquo ligand affects the absorption spectrum. The zinc-porphyrin is self-assembled into a one-dimensional coordination polymer by axial coordination in the solid state.

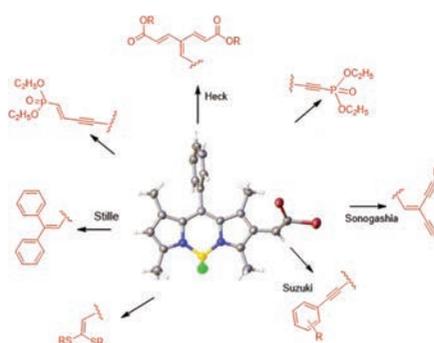


pp. 147–161

Pd-catalyzed synthesis of C–C (Sonogashira, Suzuki, Heck, Stille), C–P and C–S linked products using *gem*-dibromovinyl BODIPY

Hasrat Ali, Brigitte Guérin and Johan E. van Lier*

The BODIPY core can be easily modified with desired functionalities *via* the selective coupling of *gem*-dibromovinyl at either the *p*-position of 5-phenyl or β -position of the pyrrole ring to ethynyl alkyl and aryl, vinylaryl, (Sonogashira Suzuki, Heck, Stille cross-coupling) and phosphonate and thiol groups using well-known Pd-catalyzed coupling reactions. This provides a straightforward approach for preparation of a large variety of “Y-enyne” BODIPY compounds.

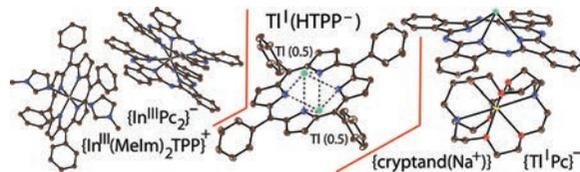


pp. 162–170

Interaction of In^{III}CIPc and Tl^{III}CIPc phthalocyanines with deprotonated porphyrin HTPP⁻ anions. Metal-centred reduction of Tl^{III}CIPc

Nikita N. Romanenko, Maxim A. Faraonov, Salavat S. Khasanov, Evgeniya I. Yudanov and Dmitri V. Konarev*

Reactions of In^{III}CIPc or Tl^{III}CIPc phthalocyanines with monodeprotonated tetraphenylporphyrin HTPP⁻ anions allowing the preparation of {In^{III}(*N*-MeIm)₂(TPP²⁻)}⁺{In^{III}(Pc²⁻)₂}⁻•C₆H₄Cl₂ (**1**) and Tl^I(HTPP⁻) (**2**) and showing that deprotonated porphyrins can abstract metal atoms from the phthalocyanines. The reduction of Tl^{III}CIPc is metal-centered yielding the {Cryptand(Na⁺)}(Tl^I(Pc²⁻))⁻•C₆H₄Cl₂ (**3**) salt. The structure and optical spectra of the obtained compounds are discussed.

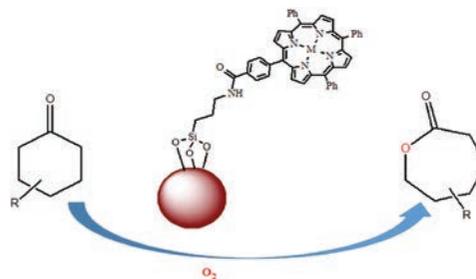


pp. 171–179

3D-Network porous polymer bonded metalloporphyrin: An efficient and reusable catalyst for the Baeyer-Villiger oxidation

Sheida Hamid and Arash Mouradzadegun*

The synthesis of a novel, green and recoverable heterogeneous catalyst was investigated by grafting Cu-porphyrin on the surface of polymeric calix[4]resorcinarene for Baeyer-Villiger oxidation. The catalyst demonstrated excellent activity, especially in the case where cyclic aliphatic ketone oxidation was easily performed under mild conditions with high yields.



pp. 180–185

Copper macrocyclic complex with *trans*-di[benzo]porphyrazine and two oxo ligands: DFT quantum-chemical design

Oleg V. Mikhailov* and Denis V. Chachkov

Using density functional theory (DFT) with B3PW91/TZVP and OPBE/TZVP levels, the possibility was shown for the existence of a copper heteroligand complex with *trans*-di[benzo]derivative of 3,7,11,15-tetraazaporphine (*trans*-di[benzo]porphyrazine) and two oxygen (O²⁻) ions which remains still unknown for this element and the key structural parameters of its molecular structure were calculated.

