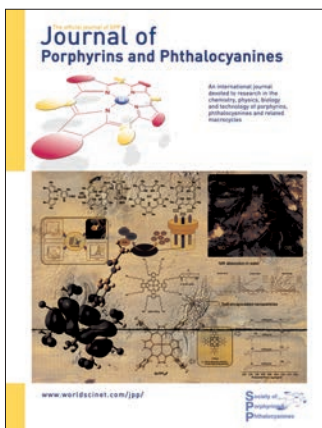


About the Cover



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

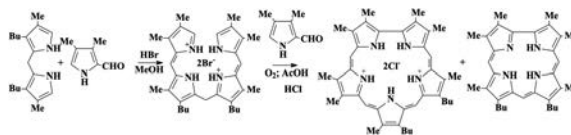
Articles

pp. 73–79

Structure, acidic properties and the coordination ability of sapphyrin with an unsymmetric substitution system

Yulia B. Ivanova, Svetlana G. Pukhovskaya, Mikhail M. Lukanov, Aleksandr S. Semeikin, Arthur S. Vashurin* and Sergey A. Syrbu

Synthesis of unsymmetrically substituted 2,3,7,13,16,17,22,23-octamethyl-8,12-di-*n*-butylsapphyrin dichloride ($H_5P^{2+}Cl_2$) was carried out. Stability of the anionic complex and the acidic properties of $H_5P^{2+}Cl_2$ were studied. The geometric and electronic structures of the molecular and ionic forms of the resulting sapphyrin were calculated using density functional theory (B3LYP/Def2TZVPP with an empirical correction for GD3 dispersion).

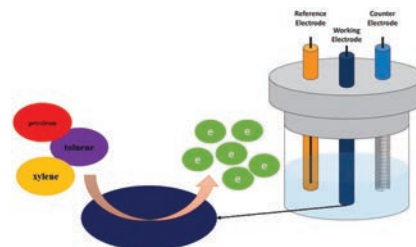


pp. 80–87

Electrocatalytic oxidation of petroleum, toluene and xylene on the Ni-porphyrin-modified graphite electrode

Arezo Bahrami, Majid Jafarian, Ghodsiyeh Sadat Ferdowsi* and Saeed Rayati

The electrochemical oxidation of petroleum was performed for the first time. Since petroleum is a rich source of hydrocarbons, its oxidation and electron production resulting in the production of electricity, which is green energy, is much more efficient than burning it. Electrochemical oxidation of petroleum was carried out using a synthesized metalloporphyrin. Since porphyrins have unique physical and chemical properties, they have recently been of great interest for catalytic reactions.



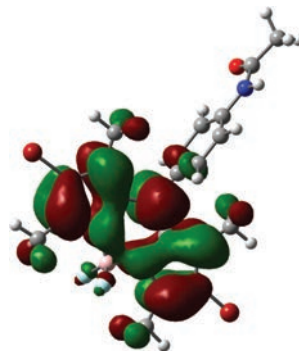
Articles

pp. 88–96

Photodynamic antimicrobial activities of a series of *meso*-substituted 2,6-dibrominated 1,3,5,7-tetramethyl-BODIPY dyes

Awiye K. May, Bokolombe P. Ngoy, John Mack* and Tebello Nyokong

The photodynamic antimicrobial chemotherapy (PACT) activities of seven 1,3,5,7-tetramethyl-2,6-dibromoBODIPY dyes with 4-acetamidophenyl, 2-iodophenyl, 3-iodophenyl, 4-iodophenyl, 2-bromophenyl, 5-bromothiien-2-yl, and methylphenyl ester *meso*-substituents were studied against *Staphylococcus aureus* through irradiation with a 530 nm LED to identify structure-property relationships related to modifying the *meso*-aryl substituent.

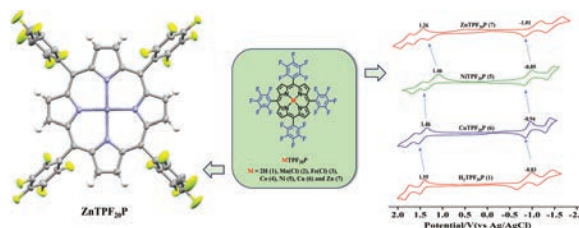


pp. 97–106

Structural, photophysical, and electrochemical redox properties of *meso*-tetrakis(pentafluorophenyl)porphyrins

Ankit Kumar Deval and Muniappan Sankar*

The transition metal complexes of *meso*-tetrakis(pentafluorophenyl)porphyrin (MTPF₂₀P) where M = Mn(III), Fe(III), Co(II), Ni(II), Cu(II) and Zn(II) were synthesized and their structural, electronic spectral, and electrochemical redox properties are compared.

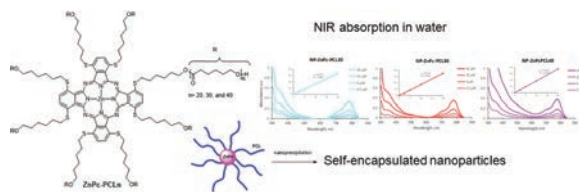


pp. 107–113

Near infrared-absorbing self-encapsulated phthalocyanine-cored polycaprolactone star polymeric nanoparticles

Aymen Nabeel Yaseen, Atefeh Emami, Haifa Ben Aziza, Merve Dandan Doganci, Ümit İşçi, Ayşe Gül Gürek, Erdinc Dogancic and Fabienne Dumoulin*

Self-encapsulated phthalocyanine-cored polycaprolactone star polymeric nanoparticles obtained by nanoprecipitation exhibited excellent near-infrared absorption in water.

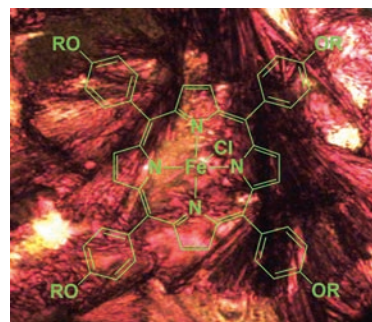


pp. 114–120

Liquid crystalline behavior of porphyrin iron(III) chloride complexes with different alkyl chain lengths

Dumrongsak Aryuwananon, Suttinun Phongtamrug and Buncha Pulpoka*

Novel functionalized porphyrin iron(III) complexes with different long alkyl chains (C₁₂ and C₁₈) were synthesized and characterized by NMR, FT-IR, UV-Vis, MS and EPR spectroscopic techniques. Their liquid crystalline properties were investigated by DSC, XRD and POM and confirmed that the alkyl chain C₁₂ and C₁₈ porphyrin iron(III) complexes both exhibited multi-mesogenic transitions over a wide temperature range. Both complexes exhibited the columnar mesophase type.



Articles

pp. 121–133

Bismuth porphyrin anchored reduced graphene oxide nanocomposites as a fascinating photocatalyst for rhodamine B dye degradation

Rehana Yasmeen, Gauri Devi Bajju and Haq Nawaz Sheikh*

Bismuth porphyrins anchored to reduced graphene oxide nanocomposites were synthesized and further utilized as versatile catalysts for the degradation of rhodamine B dye under visible light.

