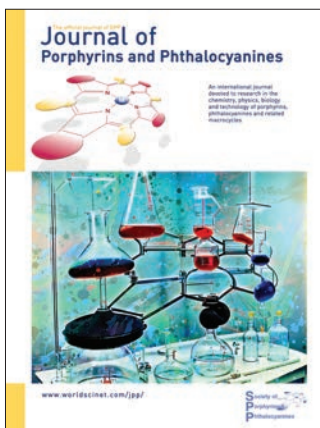


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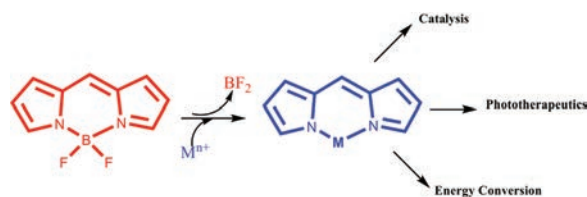
Review

pp. 1573–1597

Transition metal dipyrromethenes: Seeking alternatives to BODIPY dyes

Shawn Swavey*

Dipyrromethenes are essential for BODIPY synthesis, offering exceptional photophysical properties. Inserting transition metals of varying oxidation states in place of boron has generated considerable interest for metal-dipyrin complexes due to numerous applications beyond those of traditional BODIPY dyes. This review describes some of the more recent advances in the synthesis, intrinsic properties, and applications of transition metal-dipyrin complexes.



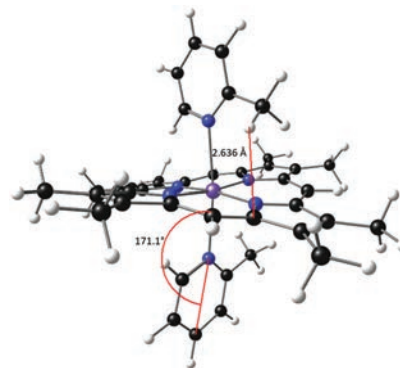
Articles

pp. 1598–1608

Investigating axial ligand impact on pinch-porphyrin peroxidase activity with [bis(o-methylpyridino)(dimethylesterprotoporphyrinato)Fe(III)] chloride

Alejandra Romero-Morán*, Samuel Hernández-Anzaldo, Hugo Vazquez-Lima and Yasmi Reyes-Ortega*

The compound [bis(o-methylpyridino)(dimethylesterprotoporphyrinato)Fe(III)] chloride was synthesized and characterized. The investigation revealed that a heterohydrocarbonated chain can improve oxidant activity control, and the contribution of S=3/2 in iron(III)-based complexes affects peroxidase activity. The findings provide insight into the design and development of new compounds for potential applications.



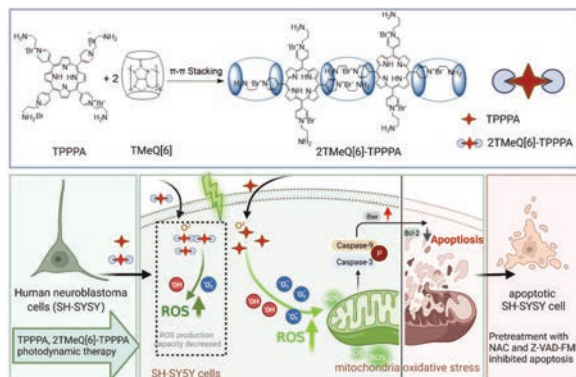
Articles

pp. 1609–1617

The mechanism of novel potential porphyrin photosensitizer mediated phototherapy in SH-SY5Y cell lines and the effect of TMeQ[6] self-assembly in therapy

Zhouxia Lu, Yan Guo, Conghui Wang, Xuelian Luo and Song Xiao*

The self-assembled compound 2TMeQ[6]-TPPPA (TPPPA : TMeQ[6] = 1:2) was synthesized using TPPPA [5, 10, 15, 20-tetra (4-pyridyl, N-propyl ammonia)] and TMeQ[6]. TPPPA-mediated photodynamic therapy is an effective treatment option for SH-SY5Y cells, which is sufficient to destroy SH-SY5Y cells through the ROS-induced apoptotic pathway. After self-assembly with TMeQ[6], the apoptotic pathway induced by TPPPA did not change, which has the characteristics of being a carrier but is not conducive to the photodynamic enhancement of TPPPA.

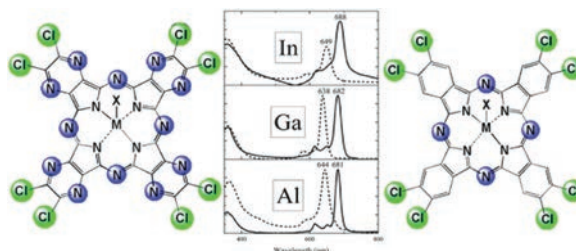


pp. 1618–1629

Spectral-luminescence, redox and photochemical properties of Al^{III}, Ga^{III} and In^{III} complexes formed by peripherally chlorinated phthalocyanines and tetrapyrzino porphyrazines

Daniil N. Finogenov*, Dmitriy A. Lazovskiy, Alina S. Kopylova, Yuriy A. Zhabanov and Pavel A. Stuzhin*

Complexes of Al^{III}, Ga^{III} and In^{III} with peripherally chlorinated phthalocyanine (Cl₈PcM) and tetrapyrzino porphyrazine (Cl₈TPyzM) were prepared and studied using spectral and electrochemical methods. This work shows the effect of peripheral chlorination and aza substitution on properties of the phthalocyanine-type macrocycle.

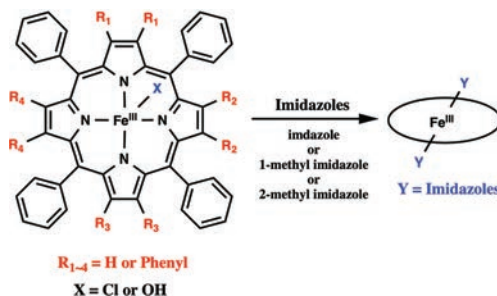


pp. 1630–1641

Distortion effect on the ligation of imidazoles to water-insoluble iron(III) porphyrin

Hirofumi Konno*, Yoichi Nonomura and Yasushi Kishimoto

The distortion effect on the ligation of imidazoles to an iron(III) porphyrin was investigated spectroscopically. The stability of bis-ligand iron(III) porphyrin complexes depends on the increase in distortion of the porphyrin ring and the type of distortion. In addition, the ligation of 1-MeIm to the hydroxo complex may involve a reaction mechanism different from that of the general reaction.

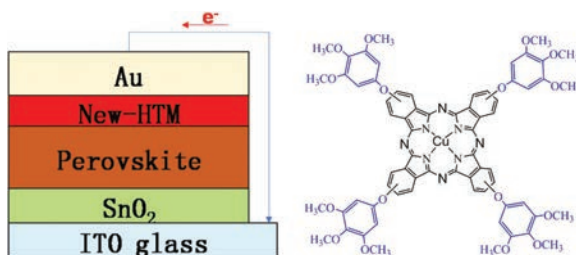


pp. 1642–1649

Thermally stable dopant-free soluble phthalocyanines as hole transporting materials for Perovskite solar cells

K.S. Srivishnu, Sai Prasanna Palacharala and Lingamallu Giribabu*

A series of soluble phthalocyanines were designed bearing 3,4,5-trimethoxy phenoxy substituents at peripheral positions with Cu, Zn metal derivatives along with free base and were applied as hole transporting materials for perovskite solar cells.



Articles

pp. 1650–1658

Fluoro-2,6-dimethylphenyl mono-hydroxychlorin and porphyrin congeners

Cierra Brown, Brandon M. Campbell, Tina Chen, Richard K. Darkwa, Geena Kim, Danielle J. Kranchalk, Hannah Lamport, Colin M-D. Le, Jenny Lu, Giovan N. McKnight, Nejc Nagelj, Nikhil V. Seshadri, Kristopher G. Reynolds, Shao-Liang Zheng and Dilek K. Dogutan*

17,18-dihydro-18-hydroxy-5,10,15,20-tetrakis-(4-fluoro,2,6-dimethylphenyl)-porphyrin together with the corresponding freebase porphyrin were obtained under mild conditions. The freebase porphyrin (TFP) was metalated with FeBr_2 and $\text{MgBr}_2 \cdot \text{OEt}_2$, resulting in the metalloporphyrins Fe(III)TFP(Cl) and Mg(II)TFP which have been structurally characterized by single-crystal X-ray crystallography. We found that the excited state properties of the mono-hydroxychlorin are similar to that of its parent TFP and Mg(II)TFP porphyrin congeners.

