

we wish to present on the synthesis and evaluation of some benzyldiene-bis-(4-hydroxycoumarin) bearing thiourea derivatives as α -glucosidase inhibitor.

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SYNTHETIC STRATEGIES OF NATURE-INSPIRED PORPHYRIN MODELS FOR ARTIFICIAL PHOTOSYSTEMS

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Discovering of porphyrin in naturally-occurring system had attracted the attention to mimic their energy and electron transfer process for the artificial photosynthetic model which can be applied in developing optoelectronic devices. Well-organized porphyrin as the electron transferring centres and attached chromophores are important to ensure the ability of controlled energy and electron flow in the porphyrin building blocks. In this study, porphyrins with appended fluorenyl/fluorenone arms and methoxy/carboxy moieties as the electron donors-acceptor were synthesized and further assembled to form the porphyrin dimer and trimer arrays. The effect of naphthalene diimide (NDI) in the porphyrin trimer system was also investigated in order to increase the electron push-pull effect and π electron conjugation. The synthesis of porphyrin dimers and trimers began with their respective porphyrin monomers which was accessible through Adler Longo's mixed condensation reaction. The porphyrin mixture was then separated to obtain the desired (A₃B) and (A₂B₂)-type of porphyrin monomers. The fluorenone based porphyrin monomers were derived from the oxidation reaction of fluorenyl porphyrin mixture using Starks' catalyst/NaOH. The monomers were then binded using copper free Sonogashira coupling reaction to form the linearly linked dimer and trimer arrays. Similar reaction was utilized to obtain the targeted porphyrin-NDI models.

