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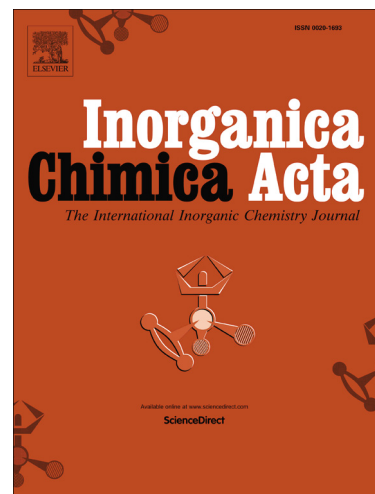
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Investigation of synthetic pathways of carboxylic acid phthalocyanines from glycolic and lactic acids

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Abstract

We present the study of synthetic pathways to prepare carboxylic acid substituted phthalocyanines from glycolic and lactic acids. Hydroquinone was used as an alternative catalyst for cyclotetramerization reaction of metal free and zinc phthalocyanines, which were characterized by ^1H MR spectroscopy, infrared absorption and mass analysis. The photophysical and photochemical properties in dimethyl sulfoxide (DMSO) were analyzed. We verified that the presence of the methyl radical group, that distinguish both structures, diminish the macrocycle aggregation in solution and promote higher quantum yields of fluorescence and for singlet oxygen generation.

Keywords: phthalocyanine, glycolic acid, lactic acid, photosensitizer, photodynamic therapy

1. Introduction

Phthalocyanines (Pc's) are aromatic macrocycles with highly conjugated π -electron structure [1, 2]. Although they have been mainly used as blue and green dyes in the textile and paper industries [1], their chemical, photochemical, and thermal stabilities

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