

Novel bithienyl-benzimidazoles: one-pot synthesis and optical and solvatochromic studies

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Abstract:

Benzimidazoles are a group of heterocyclic compounds which have been applied in numerous aspects of science and technology. As a result of their interesting electronic and optical properties when incorporated in push-pull systems, benzimidazole derivatives found application as solvatochromic and fluorescent probes, chemosensors, organic light emitting diodes (OLEDs) and non-linear optical (NLO) chromophores.^[1]

In the last decade our research group has reported experimental and theoretical results regarding the auxiliary donor/acceptor effect of electron deficient benz-X-azole derivatives in push-pull systems.^[1b-c, 1e, 1g-i] In this work we describe the synthesis, UV-visible absorption, fluorescence and solvatochromic studies of a series of heterocyclic chromophores of the benzimidazole type. These new bithienyl-benzimidazoles were synthesised in good to excellent yields, by metal-free one-step reaction of *o*-nitroanilines in the presence of formyl-bithiophenes, *via* a reductive cyclization, and their optical and solvatochromic properties were evaluated in solvents of different character.

References:

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