



Synthesis, Characterization, Crystal Structure and Hirshfeld Surface Analysis of 4-(1-(4-methoxyphenyl)-4,5-diphenyl-1H-imidazole-2-yl) Phenyl Carboxylic acid Monohydrate

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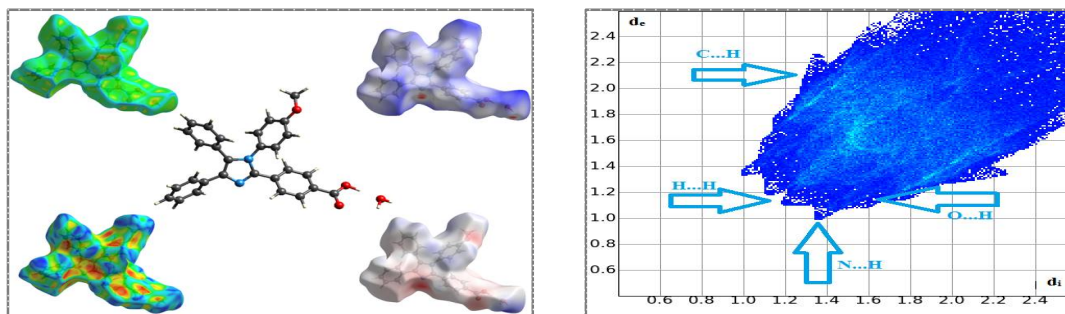
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Accepted on 21st April, 2018

ABSTRACT

A novel and rapid procedure for the synthesis of 4-(1-(4-methoxyphenyl)-4,5-diphenyl-1H-imidazole-2-yl)phenyl carboxylic acid through a multi-component reaction of 4-methoxyaniline, Benzil, Ammonium acetate and 4-formyl-benzoic acid in glacial acetic acid and catalytic amount of concentrated H₂SO₄ has been reported. The product obtained was characterized by IR, ¹H-NMR, ¹³C NMR, SEM and EDAX spectroscopic techniques and finally the structure was confirmed by X-ray diffraction studies. The crystal structure reveals π electron delocalization in the molecule. Inter- and intra-molecular hydrogen bonds of the type O-H...O and C-H...O interactions help in the stability of the structure.

Graphical Abstract



Fingerprint plot of the title compound (Atom_{inside}...Atom_{outside}).

Keywords: 4-(1-(4-methoxyphenyl)-4,5-diphenyl-1H-imidazole-2-yl)phenyl carboxylic acid, Synthesis, X-ray diffraction, SEM, EDAX, Hirshfeld Surface, C-H... π interactions.