Available online at **www.joac.info**

ISSN: 2278-1862

Journal of Applicable Chemistry

2018, 7 (2): 382-389

(International Peer Reviewed Journal)

Synthesis, Characterization, Structural Elucidation and Hirshfeld Surface Analysis of a Novel *1H*-Imidazole Derivative

T.P. Jyothi[1], M.K. Shivanand[2], S.B. Benaka Prasad[3], M.K. Ravindra[4], K. M. Mahadevan[4], N.K. Lokanath[5] and S. Naveen[3*].

1. Department of Chemsitry, Channabasaveshwara Institute of Technology, Gubbi 572 216, **INDIA**
2. Department of Chemistry, University College of Science, Tumkur University, Tumkur 572 103 **INDIA**
3. Department of Basic Sciences, School of Engineering and Techinlogy, Jain University, Bangalore,562 112 **INDIA**
4. Department of Chemistry, Kuvempu University, P.G.Center, Kadur 577 548 **INDIA**
5. Department of Studies in Physics, University of Mysore, Manasagangotri, Mysuru, 570 006 **INDIA**

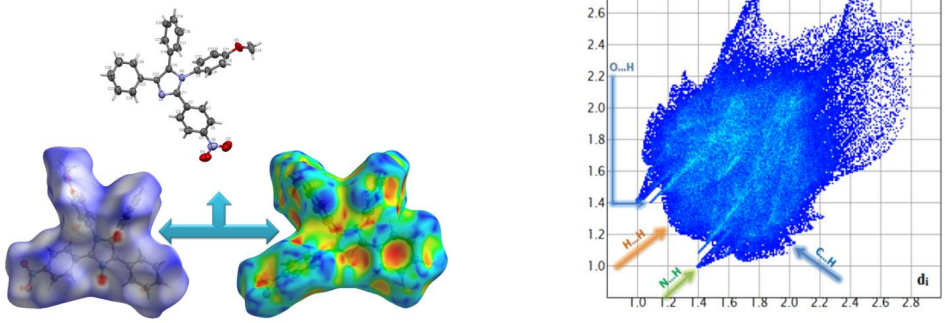
Email: s.naveen@jainuniveristy.ac.in

Accepted on 27th February 2018

ABSTRACT

A simple synthesis of 1-(4-methoxyphenyl)-2-(4-nitrophenyl)-4,5-diphenyl-1H-imidazole is reported. It is through one pot synthetic protocol by the reaction of mole quantities 4-methoxy aniline (1 mmol, 0.123g), benzil (1 mmol, 0.210g), ammonium acetate (1 mmol, 0.75g) and 4-nitro-benzaldehyde (1mmol, 0.150g) in glacial acetic acid medium. The IR, ^{1}H-NMR, ^{13}C NMR spectra, SEM and EDAX were used in structure elucidation. The crystal structure revealsπ electron delocalization in the molecule. Inter- and intra-molecular hydrogen bonds, C-H... π interactions and H...H contribute to the stability of structure.

Graphical Abstract



Keywords: 1-(4-methoxyphenyl)-2-(4-nitrophenyl)-4,5-diphenyl-*1H*-imidazole, synthesis, single crystal structure, SEM, EDAX, Hirshfeld Surface, C-H... π interactions