



Synthesis, Spectroscopic And Crystal Structure Studies of N-(Aryl)-4-Methoxybenzenesulfonamides: (4-OCH₃) C₆H₄-SO₂NH-C₆H₄(I-X)

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ABSTRACT

Synthesis of three N-(aryl)-4-methoxybenzenesulfonamides of the general formula, (4-OCH₃) C₆H₄-SO₂NH-C₆H₄(i-X) [where i-X = H (1), 4-OCH₃ (2) & 4-Cl (3)], by the reaction between 4-methoxybenzenesulfonyl chloride and different substituted anilines is described. IR, ¹H NMR, ¹³C NMR and single crystal X-ray analysis were carried out to determine the molecular and the crystal structure of the three compounds. The dihedral angle between the two aromatic rings is 55.14(1)° in 1, 56.34(1)° in 2 and 42.58(1)° in 3. The crystal structures of all the three compounds exhibit strong N-H...O hydrogen bonds running into C(4) chains. The crystal packing of 2 is further stabilized by two weak C-H...π interactions. The supramolecular architecture in 1 and 3 is one dimensional, whereas 2 exhibit's two dimensional architecture.

Keywords: Sulfonamides; X-ray analysis; N-H...O hydrogen bonds; C-H...π interactions; weak interactions.
