

Using Domestic Microwave for solvent free organic synthesis reactions, An environmental point of view

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Abstract

Long time ago, it has been known that molecules should undergo excitation with electromagnetic radiation. This effect is used in domestic microwave ovens to heat up food. Some of the first tries gave reasonable results, which led to a flood of interest in microwave-accelerated synthesis methods. However, scientists have been using microwaves as a reaction methodology for a few years; no studies were conducted on using domestic microwave ovens in organic synthesis.

This paper discusses the use of domestic microwave units for solvent free synthesis reactions, which are often for reasonable prices. Unmodified house microwave units are suitable in many cases. However, some modifications (for example, a reflux condenser) can raise the safety factor. Reactions which need to be done using High-pressure should only be carried out using special reactors with a microwave oven specifically designed for this purpose. This study give a spot light on using this microwave units for organic synthesis with some modifications and make comparison between its results and the results given by the synthesis specifically designed microwaves.

Biography:

Dr. Alaa F. Mahmoud has completed his PhD at the age of 35 years from Minia University and postdoctoral studies from Minia University faculty of sciences. He is the director of faculty development sector,. He has published more than 10 papers in reputed journals and has been serving as referee member of some scientific journals.

Speaker Publications:

1. Microwave Assisted One-pot Synthesis of 2-Amino-4H-chromenes and Spiropyran[2,3-d]pyrimidine
2. Facile One Pot Microwave Assisted Solvent-Free Synthesis of Novel Spiro-Fused Pyran Derivatives via the Three-Component Condensation of Ninhydrin with Malononitrile and Active Methylene Compounds
3. Synthesis of 2-thioxopyrido[2,3-d]pyrimidine-4-ones and 1,4-bridged bis-2-thioxo-1,2,3,4-tetrahydro-5-pyrimidine carboxylic acid ethyl ester derivatives

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