Organic Chemistry: An Indian Journal

Editorial | Vol 15 Iss 4

Microwave-Assisted Organic Chemistry Reactions

Amelia Hawking*

Editorial office, Trade Science Inc., UK

***Corresponding author:** Amelia Hawking, Editorial office, Trade Science Inc., UK, E-mail: hawkss_a@hotmail.com

Received: April 09, 2021; **Accepted:** April 23, 2021; **Published:** April 30, 2021

Editorial

Microwave Assisted Organic Syntheses (MAOS), which transform small molecules into large polymers in a fraction of the time, have sparked a revolution in organic compound synthesis. The demand for various organic compound libraries for drug discovery, biomaterial production, automated library screening, proteomics, and other applications has fueled the development of novel MAOS technologies. In previous reviews on this topic, the emphasis on MAOS reactions has been on the method rather than the importance placed on the applications. The different applications of microwave assisted synthesis of organic polymeric compounds have been extensively discussed in this editorial, with a focus on aspects of speed, reproducibility, and scalability. It is clear from this editorial that data consistently points to MW as a novel and powerful tool that has enabled the synthesis of a number of new compounds and highlights the need for further research in this field, regardless of the type of organic material. Microwave assisted irradiation reactions have been accepted as a valuable tool for accelerating the production of a wide variety of organic molecules. Small molecules are formed up into large polymers in a fraction of the time when opposed to thermal methods, ensuring the acceptance of Microwave assisted irradiation reactions as a valuable tool for accelerating the development of a wide variety of organic molecules.

Microwave assisted technology in organic chemistry dates back to the mid-1980s, and since the 1990s, the number of publications on Microwave Assisted Organic Reactions (MAOS) has increased significantly due to the increased benefits associated with the technique. Microwave assisted reactions in organic chemistry have increased the pace, reduced the cost, and reduced the amount of energy used, making it a more efficient operation. They are widely hailed as "green chemistry" initiatives whose applications are promoted today to reduce the use of non-renewable resources and polluting solvents, to reduce the production of secondary products, which are often toxic, as well as the emission of harmful gases. In organic chemistry, microwave aided reactions achieve the same result by facilitating faster reactions in bulk conditions while also reducing reaction time. The need for different organic compound libraries for drug discovery, biomaterial growth, automated library screening, proteomics, and other applications has fueled the development of innovative MAOS synthesis technologies. The ability to reduce reaction times from days to hours to minutes using microwave assisted reactions has aided the adoption of microwave technology in combinatorial chemistry and drug discovery, as there is a reliance on the generation of a large number of compounds whose development has been diversified and enhanced due to MAOS, as there is increased production of cleaner reactions and more pure products. Because of the importance of microwave assisted reactions in organic chemistry, a number of reviews have been written on the subject. In review articles, the relevance of MAOS applications has been overshadowed by the emphasis on the mechanism of MAOS reactions.

As a result, after a brief introduction to the microwave process and the equipment used, this editorial focuses on the most recent developments in this field. Solid-phase synthesis, biopolymer synthesis, applications in proteomics, parallel processing in microwave reactors, and automated library generation using sequential microwave irradiation methods are only a few of the new areas where MOAS has been used.

Citation: Hawking A. Microwave-Assisted Organic Chemistry Reactions. Org Chem Ind J. 2021;15(4):11