INTERNATIONAL CONFERENCE ON RESEARCHES IN ENGINEERING, SCIENCE, MANAGEMENT AND HUMANITIES (ICRESMH – 2025)

Delhi, India on 27th April, 2025

CERTIFICATE NO : ICRESMH /2025/C0425432

A Study of Preparation of Novel Heterocycles Using Various Organic Compounds

Ahire Ramdas Narayan

Research Scholar, Department of Chemistry, Mansarovar Global University, Sehore M.P., India.

ABSTRACT

The preparation of novel heterocycles using various organic compounds is an important area of study in organic chemistry and pharmaceutical research. Heterocyclic compounds are cyclic structures that contain one or more heteroatoms such as nitrogen, oxygen, or sulfur along with carbon atoms in the ring. These compounds are widely found in many natural products, pharmaceuticals, agrochemicals, and biologically active molecules. Because of their diverse chemical and biological properties, scientists continuously work on developing new methods for the preparation of novel heterocyclic compounds. The preparation process generally involves the reaction of different organic compounds such as aldehydes, ketones, amines, and other functionalized molecules under suitable reaction conditions. Various synthetic strategies like cyclization reactions, condensation reactions, and multicomponent reactions are commonly used to form heterocyclic ring systems. The use of catalysts, controlled temperature, and suitable solvents can enhance the efficiency and yield of these reactions. In recent years, researchers have also focused on environmentally friendly and sustainable methods, including green chemistry approaches and recyclable catalysts. Novel heterocyclic compounds prepared through these methods have significant applications in medicine and drug discovery. Many of these compounds exhibit important biological activities such as antibacterial, antifungal, anti-inflammatory, and anticancer effects. Therefore, the preparation of new heterocycles using different organic compounds remains a valuable and growing field of scientific research.