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Volume 11

**Chapter 3**

**The Use of Nanocatalysts in the Synthesis of Heterocycles: A Contemporary Approach**

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**Abstract**

Nanocatalysis is the latest development in the field of synthetic chemistry that has revolutionized the process of chemical transformation. The nanocatalysts offer several advantages as compared to conventional catalysts such as simple and inexpensive methods of preparation, high surface to volume ratio, large number of active sites, high selectivity, enhanced stability, easy recovery and recyclability. In recent years, the nanomaterials have been widely used in the synthesis of heterocyclic molecules. This chapter aims to highlight the role of diverse nanocatalysts in the synthesis of various five-, six- and seven-membered heterocycles. An update on catalytic efficiencies of various nanocatalysts such as magnetic nanocatalysts, functionalized metal oxides, (Zr, Ti, Sn, Cu, Fe, Al, TiO<sub>2</sub>, etc.) and their applications in the synthesis of heterocycles.

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