

Synthesis of Heterocycles By Cyclizations and Functionalizations

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In general, the synthesis of complex biologically active molecules are problematic but the problems, encountered during the syntheses, can be a good source of inspiration to develop methods. One major challenge is the design of concise strategies as well as chemoselective and efficient methods that rapidly lead to the skeleton framework of natural and/or biologically active heterocyclic compounds.

In this context, we have explored the construction of heterocycles using catalytic reactions involving transition metal catalysts and heat. Metal catalysts and heat can induce rearrangements, cyclizations, functionalizations which can be highly diastereoselective and enantioselective if a chiral ligand is added in the reaction media. These reactions and their applications to the synthesis of heterocyclic natural and non-natural products will be presented.