Aldehydes, ketones, Chalcones, Dibenzalacetone, and 1,3-dicarbonyl compounds as synthetic auxiliary have provided an efficient and effective methodology for the synthesis of various pharmaceutically and industrially important compounds.

Chalcones natural or synthetic compounds possess varied biological activities like antibacterial, antifungal, anticancer, antitumor, antiviral, antitubercular, antiulcer, antimalarial and antidiabetic agents. Halohydroxyacetophenones are the starting materials for the synthesis of 2'-hydroxychalcones, which are of great importance in medicinal chemistry. Many heterocyclic compounds which have been synthesized from chalcone such as pyrazolines and N-acetyl pyrazolines also having biological significance.

Transition metal ions bound to chalcones have been found to possess different activities and find wide applications in analytical, catalytical, biological, medicinal, microbial and insecticidal fields. The diverse applications of metal chelates maybe due to unused coordination sides of complexed ligand systems or due to selective oxidation states of complexed metal ions in coordination sphere.

The high biological activity of chalcon compounds helpful to synthesis of metal complexes. 2'-hydroxychalcone systems involving oxygen atoms prompted us the prospect of exploring the capabilities of such systems to act as mononegative bidentate chelate with biologically important metal ions to form stable complexes in solution and solid state.