



## Microwave Organic Synthesis

Gedye microwaves used in organic synthesis, etc., can greatly speed up the reaction rate was found to reduce reaction time. They compared the results of esterification, hydrolysis, oxidation and nucleophilic in the microwave and conventional substitution reaction conditions, it was found permanganate oxidation of toluene carried out in the microwave oven for the reaction of toluene acid five times faster than conventional reflux, and the reaction of 4-cyano phenate and benzyl chloride in 240 times faster.

Because the rate of organic reactions under microwave irradiation method several times faster than conventional heating to thousands of times, and is easy to operate, high yield, easy purification product characteristics, so microwave organic synthesis is developing very rapidly, was now studied organic synthesis there esterification reaction, Diels-Alder, rearrangement, Kcioevenagel, Perkin -,  $\gamma$ -: benzoin condensation, Reform: ursicy, Deckman, acetal (ketone), Wining, light aldehyde condensation, open-loop, alkylation, hydrolysis olefin addition, the elimination of the Han Dynasty, free radicals, stereoselectivity, a ring, a ring reversal purpose unitary exchange unitary purpose of condolence, T hydrogenated, off the shuttle, carbohydrates, organic metals, radiopharmaceuticals and other reactions . Microwave polymerization in a polymer, there are many applications, such as microwave polymerization initiator polymer solution, polymer bulk polymerization, the polymer cured on the carrier polymer polymerization. Microwave can be used for the preparation of a high concentration of a narrow distribution of particle-free soap latex polymer nano.

Many organic compounds does not significantly absorb microwaves, but the use of certain strongly absorb microwaves "after sensitizer ", the microwave energy into heat to pass these substances catalyze chemical reactions, this" sensitizer "as a catalyst or catalyst carrier, can be microwave induced catalytic reaction, the reaction has been realized using this catalytic decomposition of methane, hydrocarbon oxidation, chemical reaction simulation photosynthesis.