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Recent Advances of Modified TiO_2 Nanostructure as Heterogeneous Catalyst in Organic Transformations

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Abstract: *This review highlights the different strategies of modified TiO_2 nanostructure as heterogeneous catalyst in organic transformations. The modification in TiO_2 nanostructure have been achieved by doping with metal and non-metal, composing with other material such as metals, metal oxides, nonoxides, semiconductor and nanostructure carbon materials. The influence of modification in TiO_2 nanostructure on catalytic properties in organic synthesis also discussed. Different modifications of TiO_2 extend the catalyst selectivity and reusability over unmodified TiO_2 nanoparticles. Recent investigations have shown that modified TiO_2 nanostructures utilised as active catalysts or catalyst support in organic transformations including C-C, C-N, C-S, C-O bond formation reactions, multicomponent reactions (MCR), oxidation- reductions.*

Keywords: Heterogeneous Catalyst, TiO_2 Nanoparticles, Organic Transformations, TiO_2 as Support, Supported Nanoparticles

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