Baeyer-Villiger Oxidation of Ketones using Molecular Oxygen with Metalloporphyrin bridged Periodic Mesoporous Organosilica

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Periodic mesoporous organosilicas (PMOs) are a special type of ordered mesoporous silica in which organic moieties are integrated onto the silica framework entirely or randomly to form hybrid organic-inorganic materials. The most important feature of PMOs are that they can incorporate various organo functionalities into inorganic frameworks to form organic-inorganic hybrid materials of which diverse organofunctionalities offer broad application. However, there are no reports on metalloporphyrin in PMO materials up to now. Herein, we report on PMOs containing metalloporphyrin (Cu,Fe). These catalysts are found to be active and selective for the Baeyer-Villiger Oxidation of ketones to lactones using molecular oxygen.