

## Synthesis of Fe-containing mesoporous silica catalysts for phenol hydroxylation using $H_2O_2$

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Several Fe-containing mesoporous silica materials were prepared by different synthetic routes. Synthesized materials have iron oxide species located either within the mesoporous silica framework as Si-O-Fe, or nano-sized iron oxide particles (FeOx) inside the pore or mostly on the external surface of a mesoporous silica. Ferric nitrate / chloride salts or iron pentacarbonyl were used as a synthesis reagent depending on the synthesis scheme. Catalysts prepared were characterized by XRD, N<sub>2</sub> adsorption-desorption, TEM/SEM, UV-Vis and FT-IR spectroscopies. Catalytic activities were compared by carrying out phenol hydroxylation with hydrogen peroxide as oxidant.