

### Catalytic oxidation over Ti containing 3-D mesoporous silica

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Ti-incorporated mesoporous silica has been used as an excellent catalyst for various industrial fundamental applications such as oxidation reactions. The Ti-TUD-1 type hierarchical mesoporous silica materials having three-dimensional pore structure were prepared by non templating method. The TUD-1 could be synthesized by using an oligomizable monomer such as TEA (Triethanolamine) with microwave. The TEA is used as excellent chelating agent provoked a surfactant-free pathway and assisted well homogeneously dispersion of metal complex onto mesoporous surface. The Ti-containing TUD-1 mesoporous silica has high catalytic activity and selectivity in the oxidation of olefins due to especially excellence in metal or metal oxides incorporation and impregnation, and high surface area.

#### Reference

- [1] Z. Shan, E. Gianotti, J.C. Jansen, J. Peters, L. Marchese, T. Maschmeyer, Chemistry-A European Journal (2001), 7(7), 1437-1443
- [2] Z. Shan, J.C. Jansen, L. Marchese, Th. Maschmeyer, Microporous and Mesoporous Materials 48 (2001) 181-187