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Some approaches in the synthesis of particulate materials for heterogeneous catalysis

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Abstract

The design and synthesis of particulate materials for new catalyst systems with novel properties remain a big challenge today. Here an attempt has been made to synthesize particulate materials for several heterogeneous catalytic systems, which contain examples from our research projects in this area. The particulate catalysts have been designed for single centre catalyst, phase-boundary catalyst, bifunctional catalyst, photocatalyst and chiral catalyst. In our current research, the synthesis of well-aligned titanium dioxide catalyst with very high length to diameter ratio was also demonstrated for the first time by sol-gel method under magnetic field with surfactant as structure aligning agent.

Keywords: Particulate materials, Heterogeneous catalytic system, Phase-boundary catalyst, Synthesis of titanium dioxide under magnetic field.