Special Issue

Preparation and Performance of Nano-Rare-Earth-Oxide Based Catalysts

Message from the Guest Editors

We have been engaged in the preparation, synthesis and performance testing of nano rare-earth catalysts. We have prepared a variety of rare-earth based catalysts and applied them to the catalytic degradation of VOCs gases, mainly benzene series gases, with satisfactory results. On this basis, noble metals were loaded or coated to further improve the activity of the catalyst. In addition, in order to increase the specific surface area of the catalyst, we synthesized rare-earth based catalysts with meso-porous and hollow structures by using a special preparation route, and precious metals were loaded on the surface of them. In the presence of interfering gases such as water and gas, catalysts still reflect good catalytic activity and excellent activity stability. With the help of a variety of test and characterization methods, the degradation mechanism of the catalyst is studied with respect to the microstructure of the catalyst, such as crystal surface activity, lattice defects, element doping and so on. We try to establish the relationship between the micro field and macro performance.

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