Hybrid Nanocomposites for Catalytic Applications

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To meet the challenges for green and sustainable productions, the team is interested in developing multifunctional catalysts that are highly active in catalyzing chemical reactions and show have high recyclability. One novel strategy is to design new catalyst systems based on hybrid nanocomposites. We have demonstrated two major research thrusts:

1) Molecular catalysts based on functionalized magnetic nanoparticles as hybrid nanocomposites for organic reactions.
2) Porous molecular materials functionalized with noble metal nanocatalysts for sustainable catalytic reactions.

In this program, we will develop new multifunctional catalysts with different architectures, such as dimer and core-shell structures. The aims are to use materials design approach for making high value products, including the reaction based on click chemistry and other reactions.

Recent publications: