第329回触媒化学研究センターコロキウム

Multitasking Nanostructures: From Tandem Catalysis to Sorbent-Assisted Catalysis

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2013年8月12日（月）13:30—15:00

Seminar Room C, Sousei Hall, Hokkaido University

（創成科学研究棟4階セミナー室C）

http://www.cat.hokudai.ac.jp/access.html

We investigate the synthesis and multifunctionalization of nanostructured materials with the purpose of building smart heterogeneous catalysts. Each functional component in these nanostructures is designed for a specific task that will ultimately assist and maximize the activity of supported catalysts. Some of the tasks achievable through multifunctionalization include binding and pre-organizing reactants through non-covalent interactions, stabilizing transition states through cooperative interactions, and creating local environments to tune the activity and selectivity of the catalytic sites. The concept of multitasking is not limited to the synergistic action of multiple components to control reactivity, but also includes the simultaneous assembly of multiple catalysts within a single support to allow for tandem catalysis, or the combination of selective adsorbents along with catalysts to create single pot refinery units. These systems are expected to save energy, solvents and time in the processing of complex biorenewable feedstocks to give fuels and chemical commodities. We envision that establishing cooperation ties with researchers at the CRC will increase our understanding of multitasking systems and lead to collaborative development of increasingly sophisticated and powerful catalysts.

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329th Catalysis Research Center (CRC) Colloquium