AIMS AND SCOPE

Although total synthesis reached extraordinary levels of sophistication in the last century, the development of practical and efficient synthetic methodologies is still in its infancy. Achieving chemical reactions that are highly selective, economical, safe, resource- and energy-efficient, and environmentally benign is a primary challenge to chemistry in this century. Realizing this goal will demand the highest level of scientific creativity, insight and understanding in a combined effort by academic, government and industrial chemists and engineers.

Advanced Synthesis & Catalysis promotes that process by publishing high-impact research results reporting the development and application of efficient synthetic methodologies and strategies for organic targets that range from pharmaceuticals to organic materials. Homogeneous catalysis, biocatalysis, organocatalysis and heterogeneous catalysis directed towards organic synthesis are playing an ever increasing role in achieving synthetic efficiency. Asymmetric catalysis remains a topic of central importance. In addition, *Advanced Synthesis & Catalysis* includes other areas that are making a contribution to green synthesis, such as synthesis design, reaction techniques, flow chemistry and continuous processing, multiphase catalysis, green solvents, catalyst immobilization and recycling, separation science and process development.

Practical processes involve development of effective integrated strategies, from an elegant synthetic route based on mechanistic and structural insights at the molecular level through to process optimization at larger scales. These endeavors often entail a multidisciplinary approach that spans the broad fields chemistry, biology, and engineering and involve contributions from academic, government, and industrial laboratories.

The unique focus of *Advanced Synthesis & Catalysis* has rapidly made it a leading organic chemistry and catalysis journal. The goal of *Advanced Synthesis & Catalysis* is to help inspire a new era of chemical science, based on the efforts of synthetic chemists and on interdisciplinary collaboration, so that chemistry will make an even greater contribution to the quality of life than it does now.

Advanced Synthesis & Catalysis

succeeding Journal für praktische Chemie
(founded in 1828)

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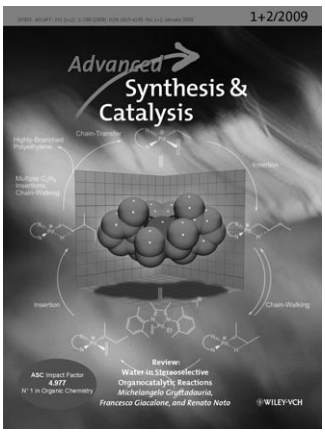
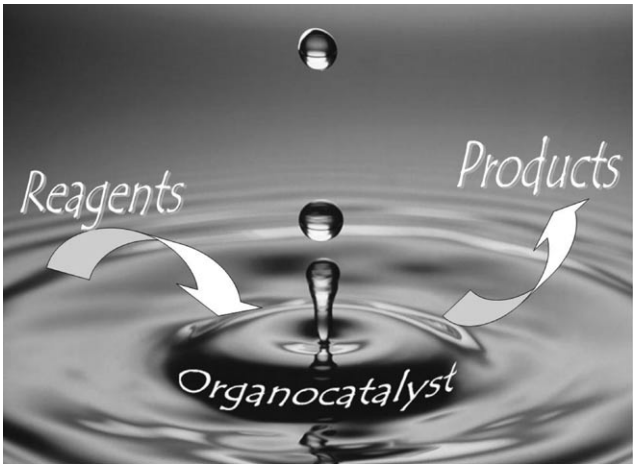


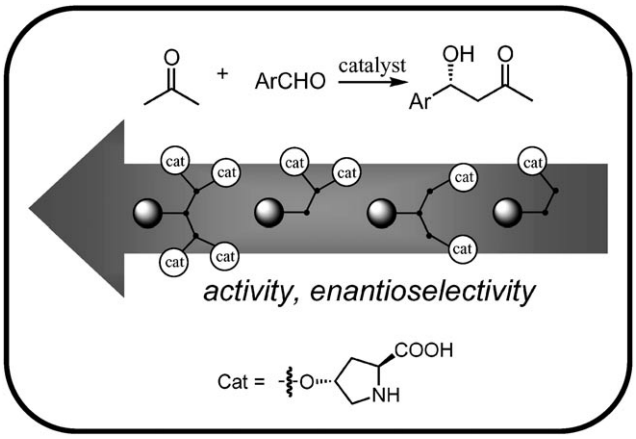
The cover picture, provided by Maurice S. Brookhart, shows an example of a cationic palladium diimine complex which catalyzes polymerization of ethylene to high molecular weight, highly branched polyethylene. The catalyst resting states are the alkyl ethylene complexes as modeled by the ethyl ethylene complex shown. Migratory insertion of these alkyl ethylene species leads to β-agostic complexes in which palladium can rapidly migrate along the chain ("chain-walking") through β-elimination/readdition reactions. Trapping of branched alkyl complexes followed by insertion leads to formation of branches in the polymer chain. Polyethylenes formed exhibit branches-on-branches since chain-walking through tertiary centers is facile.

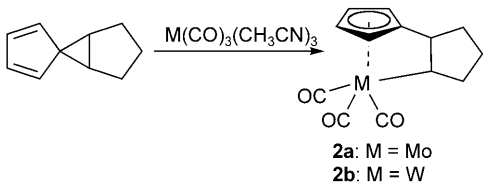
COMMENTARY

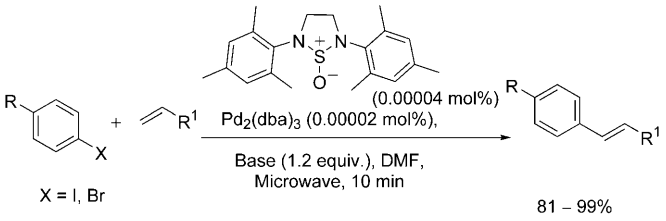
REVIEW

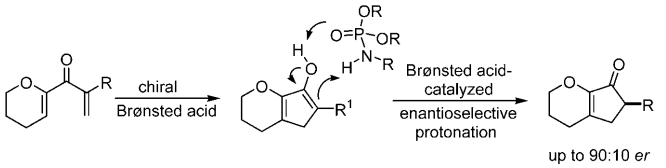


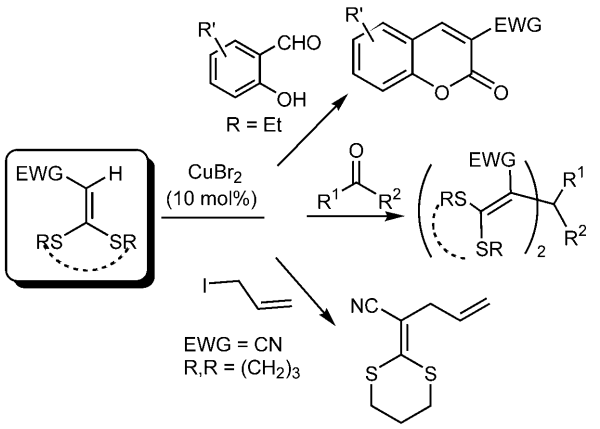
COMMUNICATIONS

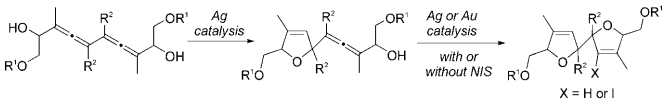


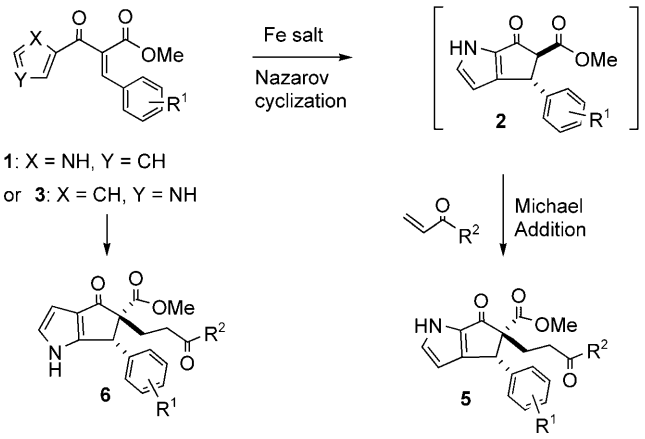


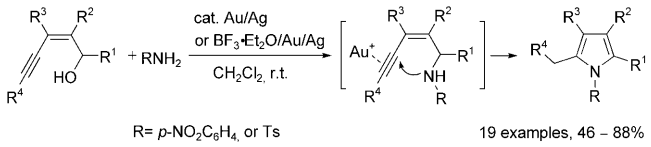


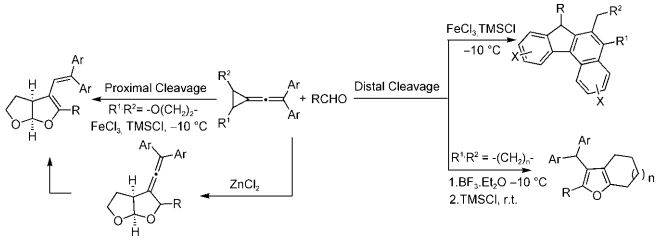




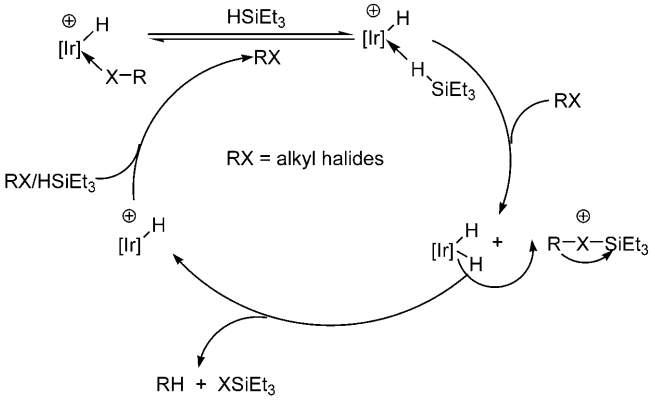


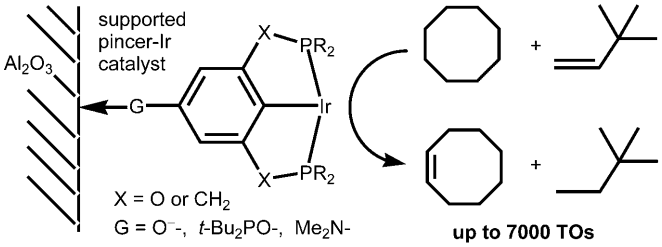


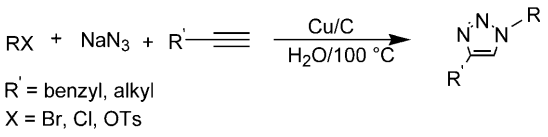


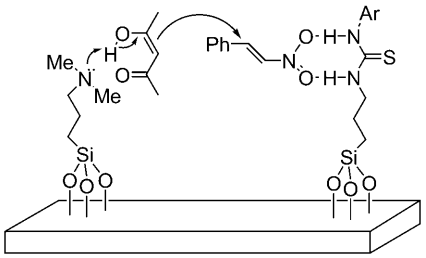


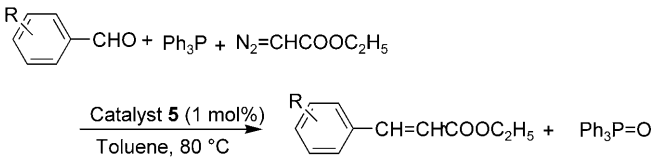
FULL PAPERS



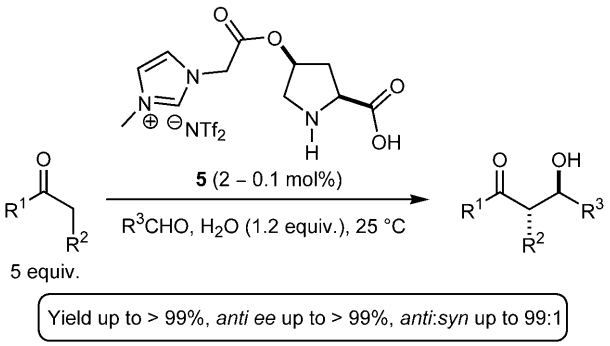


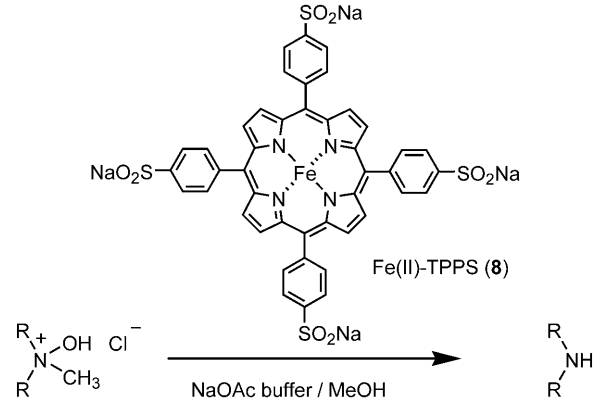






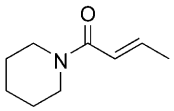
UPDATES





CORRIGENDUM

In the paper by Yongnian Gao and Yulin Lam in Issue 18, 2008, pp. 2937 – 2946 (DOI: 10.1002/adsc.200800500), in Table 5 on page 2940, the structure of the product for entry 2 should be as follows:



10b

Supporting information on the WWW (see article for access details).

*Author to whom correspondence should be addressed.

