

Catalysis with Fe, Ti and Mn

Rhett Kempe

*Lehrstuhl Anorganische Chemie II – Katalysatordesign, Sustainable Chemistry Centre (SC₂),
University Bayreuth (speak „Bye-roit“), 95440 Bayreuth, Bavaria, Germany. Email:
kempe@uni-bayreuth.de.*

The SC₂ is interested in homogeneous and heterogeneous catalysis and our main interest is the discovery of novel sustainable reactions. Our tool in hand to discover these reactions is catalyst design: identifying (and understanding) the catalyst enabling the transformations desired. In recent years, we focused on catalysts based on the most abundant transition metals of the Earth's crust (Fe, Ti and Mn). Two projects are discussed in the talk namely the *polymerization project* and the *sustainable synthesis project*. In the *polymerization project*, we have an interest in the synthesis of branched α -olefins from ethylene [1, 2]. α -Olefins are very important compounds and the synthesis of branched α -olefins is challenging and ethylene is an attractive feedstock. In the *sustainable synthesis project*, we introduced the concept of acceptor-less dehydrogenative condensation (ADC) for the catalytic synthesis of important aromatic N-heterocyclic compounds. Alcohols become selectively hetero-connected via C-C and C-N bond formation steps in such reactions and H₂ is liberated and can be collected and used if wanted. In the talk, the development of the ADC concept and more recent work are discussed [3, 4, 5].

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References

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