

UniSysCat Colloquium

Prof. Dr. Rhett Kempe

Universität Bayreuth

Start Time: Wednesday, January 8, 2020 05:15 pm

End Time: Wednesday, January 8, 2020 06:45 pm

Chemistry Building, C 264
Technische Universität Berlin, Straße des 17. Juni 115, 10629 Berlin

Catalysis for a more sustainable chemistry

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Dwindling reserves of crude oil and other fossil carbon sources combined with environmental concerns have resulted in a call for the use of alternative, preferably renewable, resources. Renewable lignocellulosic materials or waste are abundantly available, indigestible and therefore not useful as food products, and can be processed to give alcohols and polyols. Thus, there is a high demand for new reactions that utilize alcohols and convert them into key chemicals.

Recently, our group introduced the concept of acceptorless dehydrogenative condensation (ADC) for the catalytic synthesis of important aromatic N-heterocyclic compounds. In such reactions, alcohols become selectively hetero-connected via C-C and C-N bond formation steps. The deoxygenation of alcohols takes place via condensation steps and liberation of H₂ leads to aromatization. In the talk, the development of (a) the ADC concept, (b) novel ADC reactions, (c) the development of robustly supported reusable catalysts, and (d) the search for Mn catalysts for ADC and related reactions are discussed.

Prof. Dr. Christian Limberg (HU Berlin)

Organizer