

Einladung zum Vortrag von

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„Base metal catalysis for organic synthesis – from cross coupling of alkyl electrophiles to functionalization of alkenes and alkynes.“

Base metal catalysis, where the catalysts contain only elements abundant in the Earth's crust, offers potential advantages in cost, availability, scalability, and sometimes compatibility with health and the environment. Our lab is developing base metal catalyzed cross coupling reactions and functionalization of alkenes and alkynes.

We developed a well-defined Ni catalyst, Nickamine, that catalyzes the alkyl-alkyl, alkyl-aryl, and alkyl-alkynyl Kumada coupling of activated alkyl halides, as well as direct alkylation of alkynes and heterocycles. The mechanism of these reactions was thoroughly studied using radical probes, kinetics and DFT computations. A common bimetallic oxidative addition reaction pathway involving alkyl radical intermediates was found. Recently we developed chemoselective alkene hydrosilylation using similar nickel complexes as catalysts. We also developed several new synthetic methods for the addition of perfluoroalkyl iodides, alpha-carbonyl iodides, and non-activated alkyl halides to alkynes and alkenes using iron and copper catalysis. Finally new C-N cross coupling methods are developed as well.

Mittwoch, 14. Februar 2018, 11:00 Uhr
Seminarraum 2 der Fakultät für Chemie
Währinger Straße 42, 1090 Wien

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