



Einladung zum Vortrag von

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„Pd, Ag and Au in C-H arylation: reactivity and selectivity control”

The development of greener and more efficient synthetic methodologies is essential for organic chemistry to reach its full potential in its application to many applied and fundamental scientific problems. Biaryls are structural motifs predominant in numerous pharmaceuticals, agrochemicals, chiral catalysts, liquid crystal displays, and even molecular switches and motors. The most common methodology for their synthesis involves the traditional cross-coupling between an organometallic compound, Ar-M, and a haloarene, Ar-X. In the last few years, two promising alternatives to these cross-couplings *have emerged*: *direct C-H arylation*, where a readily available Ar-H is coupled with Ar-X, and *oxidative double C-H activation*, where two different Ar-H are cross-coupled. These approaches use non-prefunctionalized starting materials, thus eliminating several synthetic steps and consequent chemical waste associated to traditional cross-couplings. However, several challenges have to be resolved before this new approaches can be widely applied: 1) the development of mild reaction conditions with a broad scope, 2) the control of the regioselectivity of C-H activation and, in the case of oxidative couplings, 3) the control of the selectivity of homo- versus cross-coupling, and 4) the development of conditions that can be safely used in industry.

In this talk I will present some of our group's approaches towards addressing these challenges. In particular, we will discuss bimetallic synergistic systems utilizing Pd/Ag, Pd/Cr and Au/Ag based methodologies that allow enhanced selectivity control and reactivity.

Mittwoch, 06. April 2016, 16:15 Uhr
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