unicat
Unifying Concepts in Catalysis

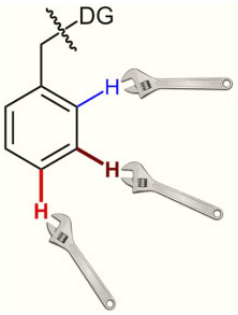
UniCat Colloquium

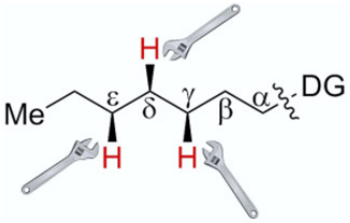
PROF. DR. DEBABRATA MAITI

Indian Institute of Technology Bombay, Mumbai, India

Selectively Reaching Out to Distal Places

Practical protocol to simplify complex synthesis by site selective C–H functionalization had always been a coveted target for chemists. Such targets are easily achieved by enzymes in nature with utmost precession. But attaining such perfection synthetically often deals with numerous challenges. Most often, assistance of directing group serves as an efficient strategy in ensuring promising regioselectivity and diverse functionalizations. Although such an approach has been implemented over decades, it is still confined to the proximal C–H bonds (ortho for arene and b for aliphatic). Despite significant progress, directing group assisted selective distal C–H functionalization remained an unexplored venture owing to the strained intermediates and transition states. In this presentation we would like to highlight few of our recent work on regioselective distal functionalization of both aromatic (meta and para) and aliphatic (g and beyond) systems. A novel class of cleavable and recyclable linker that direct efficient functionalization of distal C–H bonds are introduced. These directing templates allow the required flexibility in supporting the formation of an oversized macrocyclic pre-transition state. Using this strategy, regioselective distal C–H functionalizations were performed on a series of important classes of substrates. Applicability of these template based strategies has been demonstrated by synthesizing various natural products and complex molecules through post synthetic modifications. These distal C–H functionalization strategy is expected to streamline complex molecule synthesis in pharmaceutical and polymer industry.





Monday, June 25, 2018 at 5:15 PM
TU Berlin, Institute of Chemistry
Straße des 17. Juni 115, 10623 Berlin

Building C, Lecture Hall **C 243**

Prof. Dr. Ray (HUB)
Organizer