

International Conference on

Industrial Chemistry

June 27-28, 2016 New Orleans, Louisiana, USA



Radhey Srivastava

University of Louisiana at Lafayette, USA

Metal-catalyzed asymmetric C-H amination of alkenes

The central importance of organonitrogen compounds, especially amine derivatives, as both synthetic intermediates and useful end-products provides a powerful incentive to develop efficient, selective, and sustainable methods for the formation of C-N bonds from abundant feedstocks. The growing ability of transition metal compounds to activate and transform C-H and C-C bonds of hydrocarbons offers new opportunities for the development of metal catalyzed C-N bond-forming reactions. The discovery and development of new, synthetically useful metal-catalyzed hydrocarbon nitrogeneration reactions will be greatly facilitated by elucidating the reactivity of organonitrogen-metal complexes toward unsaturated and saturated hydrocarbons. The Chiral version of amines is a powerful pharmacophore for defining new pharmaceutical drugs but perhaps this is not surprising due to their high density of structural information which is augmented by their propensity for hydrogen bond formation. Transition metal-catalyzed asymmetric allylic amination (AAA) have been reported. Among those Pd- and Ir-catalytic methods found to be the most common using mainly pre-functionalized olefins such as allyl halides and allyl acetates (nucleophilic allylic substitutions) and simple olefins (allylic C-H amination). These methods though find practical applications in the synthetic chemistry, most of them suffer due to the requirement of olefin pre-functionalization and byproducts such as salts. In order to overcome the existing limitations, the more economical and useful catalytic allylic C-H amination of simple olefins is required. Recently we have made progress in developing copper-catalyzed asymmetric allyl amination of alkenes using aryl hydroxylamine as nitrogen fragment donors, which has not been reported so far. The result of this study will form the subject matter of the present talk.

Biography

Radhey Srivastava started his academic journey after graduating from India and Japan. He was trained in organometallic chemistry by Prof. Akio Yamamoto, Tokyo Institute of Technology, Japan. He has enjoyed working with several distinguished scientists in the field around the globe. This interaction offered him an excellent opportunity to perform high quality research in inorganic and organometallic chemistry. His research lies in field of homogeneous catalysis and ruthenium anticancer drugs. His group's current research project includes metal-catalyzed functionalization of C-H bond with special reference to C-N bond formation including asymmetric allylic C-N bond formation. In addition to C-H bond functionalization, he is also engaged in the metal catalyzed deoxydehydration (DODH) of biomass derived polyols to energy and value-added chemicals.

rss1805@louisiana.edu