

Nickel-Catalyzed Radical Cross-Coupling reactions with unconventional electrophiles



Our group is interested in the development and understanding of innovative catalytic approaches merging rational design of nickel-based catalysts with the use of photochemical and electrochemical approaches to convert readily available feedstock chemicals efficiently and sustainably to high added value organic scaffold.¹ Within this context, we are developing dual nickel-catalytic processes for the cross-coupling of electrophiles such as amides and alcohols and for the photocatalytic reduction of unsaturated substrates. Mechanistic studies including cyclic voltammetry, stoichiometric reactions, and isolation of catalytic intermediates provided a set of fundamental insights.³ The concept, scope, and limitations of photochemical and electrochemical approaches, as well as mechanistic investigation will be discussed.