



# CROSS COUPLING AS A PLATFORM FOR OLEFIN DICARBOFUNCTIONALIZATION

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Integration of cross-coupling, a reaction with unlimited depth and breadth of industrial and academic applications, into tandem reaction manifolds has the potential to create a methodology of unparalleled synthetic power for making complex molecular architectures including highly diversified carbo- and heterocycles that form the cores of natural products, pharmaceuticals and biologically active molecules. However, the development of this important method has met with only limited success due primarily to complications by  $\beta$ -hydride elimination from organotransition metal complexes that are generated in situ as reaction intermediates. In this talk, we will present our different strategies that enable Cu, Ni and Pd-catalysts to difunctionalize olefins with aryl halides and organometallic reagents/enolates in a wide variety of molecular backbones. Mechanistic pathways pertaining to these new reactions will also be discussed.