A number of useful C–C bond forming reactions have been developed by taking advantages of varied reaction modes of metal complexes. We have envisaged that the power of metal catalysis can be brought out further by designing cooperative catalysis derived from two or more different metal complexes. We show that some novel C–C bond forming reactions are enabled by cooperative catalysis with two different metal complexes. Examples include cyanofunctionalization and hydro(hetero)arylation reactions of alkynes and alkenes through C–CN, O–CN, N–CN, and C–H functionalization by nickel or palladium/Lewis acid double activation. We have also developed cooperative synergistic catalysis to develop novel C–C bond forming reactions such as arylboration of alkynes and alkenes by palladium/copper cooperative catalysis, giving functionalized organoboron compounds in a highly stereo- and regioselective manner.

Date: 16th September 2015 (Wednesday)
Time: 3:00pm-4:00pm
Venue: NTU SPMS CBC Building Level 2, Conference Room
Host: Assistant Professor Steve Zhou