**Almost Alchemy: Radical Ligands Facilitate Palladium-Like Coupling Reactions at Manganese and Cobalt**

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**Abstract:**

The remarkable utility of palladium in coupling catalysis derives from its ability to mediate two-electron oxidative addition and reductive elimination steps for selective assembly of carbon–carbon bonds. This seminar will present our recent successes in utilizing "non-innocent" redox-active ligands for selective two-electron palladium-like C–C coupling reactions at naturally abundant metal centers, including cobalt-catalyzed cross coupling of unactivated alkyl halides with organic nucleophiles and manganese-catalyzed aerobic oxidative homocoupling of alkyl-, alkenyl-, alkynl-, and aryl-carbanions.