

Contribution of electrochemistry to organometallic catalysis

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Transition metal catalyzed reactions proceed via catalytic cycles which are a succession of elemental steps involving organometallic species whose metal exhibits different oxidation states. Most organometallic complexes may be oxidized or reduced. Consequently they can be detected, generated and characterized by electrochemical techniques (cyclic voltammetry, chronoamperometry, etc...). Moreover, their reactivity can be followed by the same techniques, taking advantages that currents are proportional to the concentrations of electroactive species. It becomes possible to investigate the rate and mechanism of all steps of a catalytic cycle, to determine factors that control the efficiency of the catalytic reaction. The mechanism of palladium-catalyzed cross-coupling reactions will be presented.

References (reviews)

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