B. L. TRUESDELL, T. B. HAMBY, C. S. SEVOV* (THE OHIO STATE UNIVERSITY, COLUMBUS, USA)
 General C(sp²)-C(sp³) Cross-Electrophile Coupling Reactions Enabled by Overcharge Protection of Homogeneous Electrocatalysts
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Nickel-Catalyzed Cross-Electrophile Coupling using Electrochemistry

Selected examples:

Synthesis of pridopidine:

Significance: The authors describe a general nickel-catalyzed cross-electrophile coupling of functionalized alkenyl, aryl, and heteroaryl halides with various primary and secondary bromides using electrochemistry. The alkylated products were obtained in high yields.

Comment: Key for high coupling yields was the use of the electron shuttle reagent Ni(η³-L)₂, which efficiently prevents over-reduction and thus decomposition of the unsaturated halides. Significantly, this enables an easy scale up by performing the reaction at high currents on a 75 mmol scale.

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