Nickel-Catalyzed Cross-Electrophile Coupling using Electrochemistry

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.