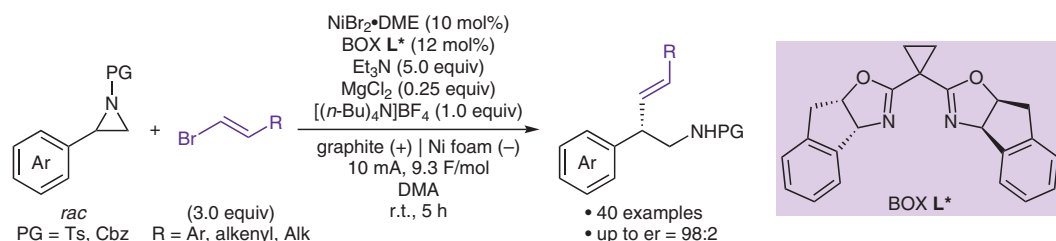
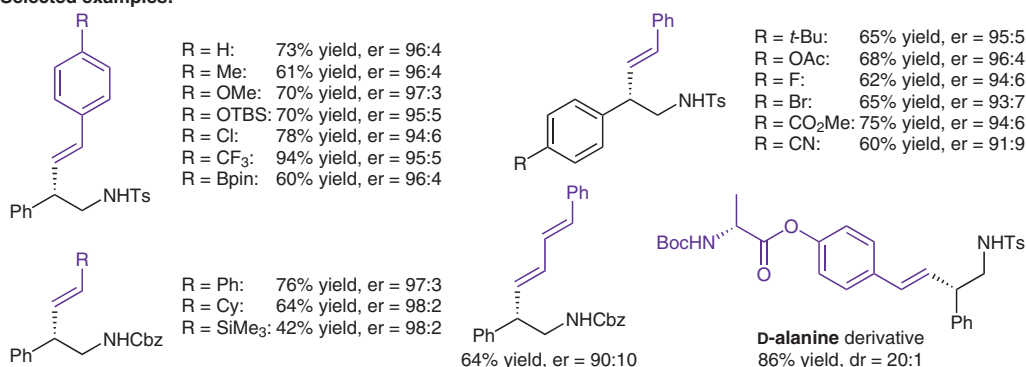


X. HU, I. CHENG-SÁNCHEZ, S. CUESTA-GALISTEO, C. NEVADO* (UNIVERSITY OF ZURICH, SWITZERLAND)
 Nickel-Catalyzed Enantioselective Electrochemical Reductive Cross-Coupling of Aryl Aziridines with Alkenyl Bromides
J. Am. Chem. Soc. **2023**, *145*, 6270–6279, DOI: 10.1021/jacs.2c12869.

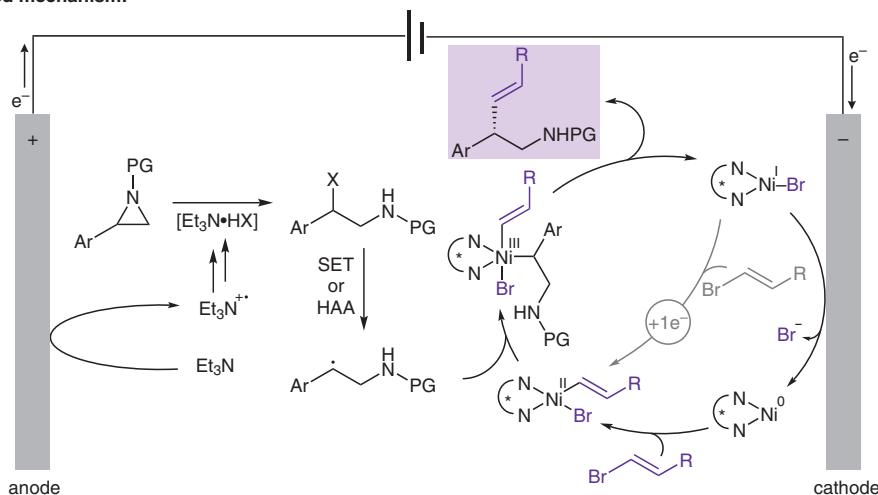
An Electroreductive Approach to Nickel-Catalyzed Enantioselective Cross-Coupling of Aryl Aziridines



Selected examples:



Proposed mechanism:



Significance: Nevado and co-workers report an electroreductive strategy for the stereoconvergent nickel-catalyzed cross-electrophile coupling of aryl aziridines with vinyl bromides. This method features excellent functional group tolerance and remarkable stereocontrol, providing access to a broad range of highly enantioenriched β -aryl homoallylic amines.

Comment: Mechanistic investigations, including radical trapping experiments with TEMPO and cyclic voltammetry studies, support the shown catalytic cycle. The stereoconvergent nature of this process relies on the intermediate formation of β -halo amines through nucleophilic halide ring opening.

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Category

Metals in Synthesis

Key words

aryl aziridines
 electrochemistry
 homoallylic amines
 nickel catalysis
 reductive cross-coupling
 vinyl bromides

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