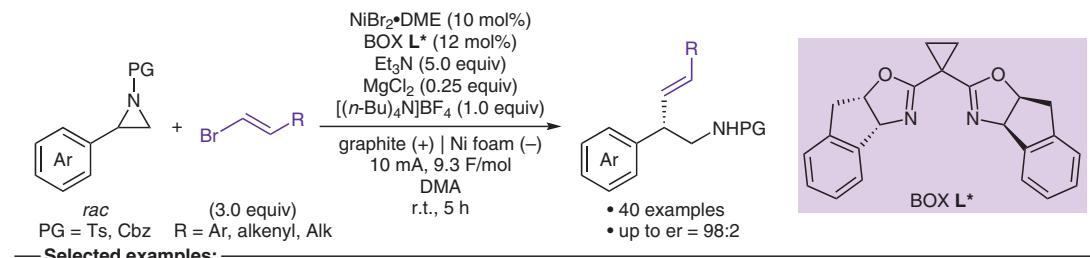


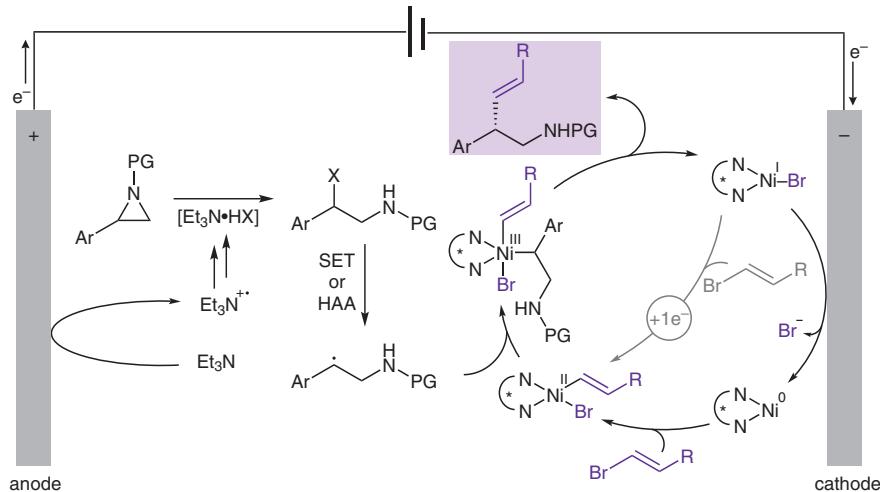
# An Electroreductive Approach to Nickel-Catalyzed Enantioselective Cross-Coupling of Aryl Aziridines



## Selected examples:

	R = H: 73% yield, er = 96:4 R = Me: 61% yield, er = 96:4 R = OMe: 70% yield, er = 97:3 R = OTBS: 70% yield, er = 95:5 R = Cl: 78% yield, er = 94:6 R = CF3: 94% yield, er = 95:5 R = Bpin: 60% yield, er = 96:4		R = t-Bu: 65% yield, er = 95:5 R = OAc: 68% yield, er = 96:4 R = F: 62% yield, er = 94:6 R = Br: 65% yield, er = 93:7 R = CO2Me: 75% yield, er = 94:6 R = CN: 60% yield, er = 91:9
	R = Ph: 76% yield, er = 97:3 R = Cy: 64% yield, er = 98:2 R = SiMe3: 42% yield, er = 98:2		64% yield, er = 90:10
			D-alanine derivative 86% yield, dr = 20:1

## 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  $\beta$ -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  $\beta$ -halo amines through nucleophilic halide ring opening.

Category
Metals in Synthesis
Key words
aryl aziridines
electrochemistry
homoallylic amines
nickel catalysis
reductive cross-coupling
vinyl bromides

