

The *Trans* Effect in CO₂ Electroreduction

Scientific Achievement

Strong *trans* effect ligands and redox-active ligands synergistically support rapid CO₂ electroreduction.

Significance and Impact

New design principles emerge from the work.

The *trans* effect of supporting ligands can accelerate CO release, while the *trans* effect of CO itself can trigger decomposition. The redox-active terpyridine ligand helps manage electron flow.

Research Details

- Cyclic voltammetry kinetic studies varying complex geometry and overall charge reveal competing *trans* effects
- Rates of individual steps correlate with overall CO₂ electroreduction activity

Gonell, Assaf, Duffee, Schauer, Miller, *Submitted*.

Work was performed at University of North Carolina at Chapel Hill

