

From Milligrams, to Kilograms, to Tons: Scaling Electrochemical CO₂ Reduction From the Bench to the Consumer

Seminar

**Monday
Sept. 21, 2026**

3:00 – 4:00 p.m.

**Beaupre Center,
Room 105**



From milligrams, to kilograms, to tons: scaling electrochemical CO₂ reduction from the bench to the consumer. Electrochemical CO₂ reduction to formate is among the most credible near-term targets to produce carbon neutral chemical fuels. This talk outlines the development of CO₂-to-formate electrolyzers at RenewCO₂ with a particular focus on performance metrics that govern commercial viability at scale. These metrics include current density, energetic efficiency, and long-term stability. First, the scale-up and 1000-hour test of an early generation cell architecture will be examined. Notable challenges and effects on key performance metrics will be included. Next, the development of a second-generation electrolyzer using lessons learned from the earlier model will be outlined. The talk closes with a comparison of how electrocatalysis research is practiced across academia, national laboratories, and industry start-ups. This includes differences in success metrics, testing timescales, reproducibility, and the balance between catalyst discovery and the systems engineering that ultimately determines commercial viability.

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