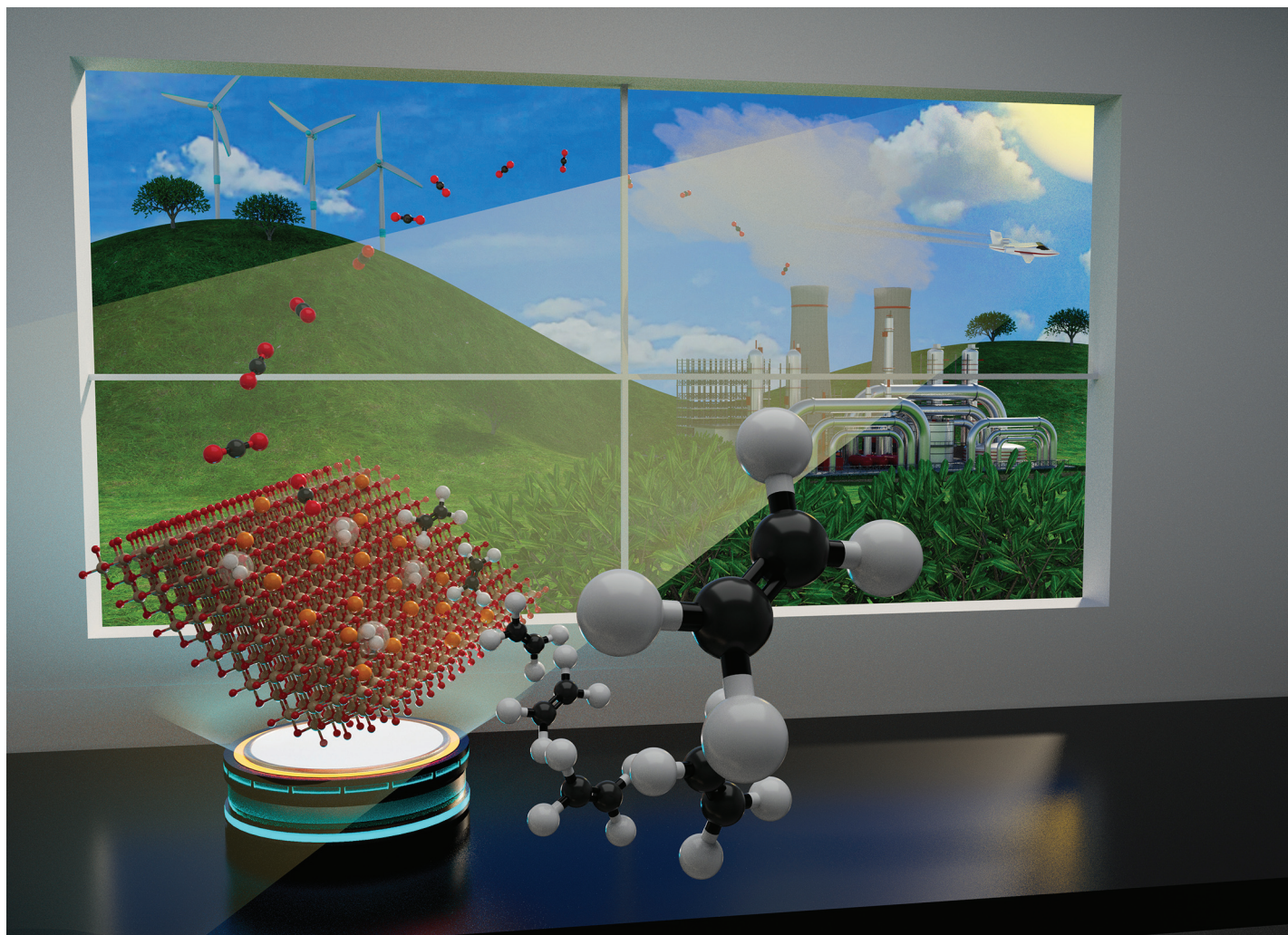




Showcasing research from Dr. Kothandaraman and co-workers, Pacific Northwest National Laboratory, Richland, WA, US.

Reactive direct air capture of CO₂ to C-C coupled products using multifunctional materials

A combined sorbent-catalytic material (Fe/K₂CO₃/Al₂O₃) has been developed for the Integrated Direct Air Capture and Catalytic (iDAC-CAT) process, which converts captured CO₂ from air into valuable C₂⁺ products such as olefins. Herein, the proximity between K and Fe was identified as critical for producing C-C coupled products from the captured CO₂. Initial technoeconomic and life-cycle assessments suggest that the proposed iDAC-CAT technology can considerably lower DAC costs and potentially produce renewable olefins with negative greenhouse gas emissions.

As featured in:



See Jotheeswari Kothandaraman et al., *Green Chem.*, 2024, 26, 8242.