

Clean Energy Conversions Laboratory – Colorado School of Mines

<http://cec-lab.mines.edu/>

The Clean Energy Conversions Laboratory at the Colorado School of Mines (CSM) is focused on trace metal (mercury, arsenic and selenium) and carbon dioxide capture and sequestration (CCUS) processes.

Central to the lab's approach is to connect with government labs and establish industry partnerships to assist in focusing and directing CEC's research efforts in a way that bridges atomistic scales to power-plant scales.



CEC's CCUS research efforts include investigation of adsorption and membrane processes for carbon capture applications. Breakthrough and isotherm experiments are carried out on carbon-based sorbents to investigate the kinetics and material capacities.

Simulations using Grand Canonical Monte Carlo are carried out to assist in sorbent design (pore structure and chemistry). Similar models are used to investigate gas (CO₂, methane, water) transport in nanoporous systems of coal and gas shale rocks. Nitrogen-selective membrane technology is also investigated for carbon capture.

NCC member, **Dr. Jennifer Wilcox**, Associate Professor in Chemical and Biological Engineering at CSM, is an Investigator with the Clean Energy Conversions Lab. She was recently featured in a "People Behind the Science" Podcast

<http://www.peoplebehindthescience.com/dr-jennifer-wilcox/>

