

# Enhanced Catalyst Durability and Sulfur Tolerance by Atomic Layer Deposition



## Goals:

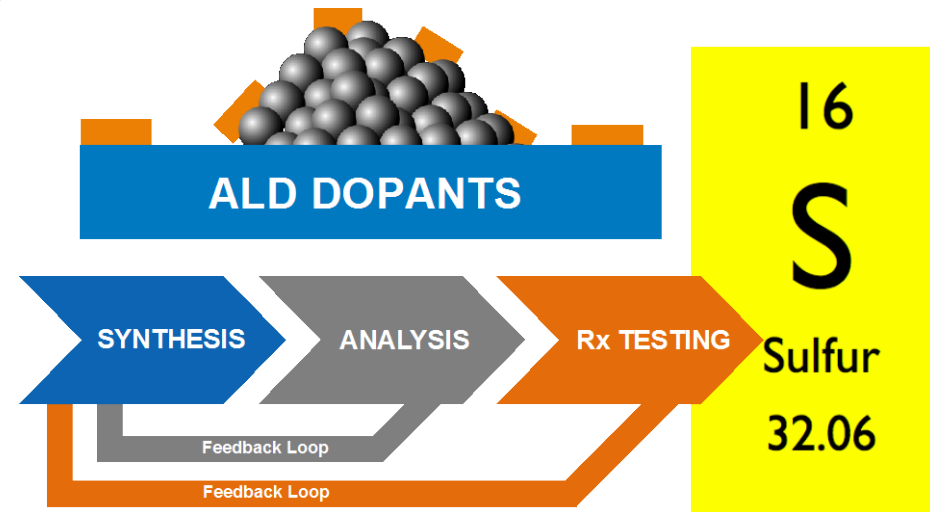
- Improve understanding of atomic layer deposition (ALD) dopant-catalyst interactions for sulfur tolerance
- Demonstrate 2x lifetime gains for ALD catalysts during biomass upgrading

## Approach:

- Develop sulfur tolerance relationships for ALD dopant-metal-support interfaces
- Measure improved catalyst S-tolerance when upgrading bioderived intermediates

## Impact on the Bioenergy Industry:

S-tolerant catalysts can potentially reduce the frequency of catalyst regeneration, Rx downtime, and separation burdens that are pain points for the bioenergy industry



## ChemCatBio Capabilities Leveraged:

- Catalytic Upgrading of Biological Intermediates (CUBI)
- Advanced Catalyst Synthesis & Characterization (ACSC)
- Consortium for Computational Physics and Chemistry (CCPC)