

# CURRICULUM VITAE

KEEMA ABAD

keemia.abad@uky.edu

## EDUCATION

University of Kentucky

PhD Candidate in Chemistry

2020- present

Areas of concentration: Analytical and Environmental Chemistry

Regent State University of New Jersey

Bachelor of Arts in Genetics

2015

## RESEARCH EXPERIENCE

University of Kentucky

Lead of Decaband Edge Adaption

2024 Present

Research Scientist Senior

2024 present

## PUBLICATIONS AND PAPERS

- Kharel, S. L.; Gnanamani, M. K.; Hoque, M. A.; **Abad, K.**; Huang, N.; Gao, X.; Liu, K.; Mosebi, A.; Thompson, J. Copper-Doped Tin Oxides Supported on Mesoporous Carbon Xerogel for Boosting the Electrochemical Reduction of CO<sub>2</sub> to Formate in Bicarbonate Solution Coupled with CO<sub>2</sub>. *Industrial & Engineering Chemistry Research* 2024, 63 (14), 6158-6168.
- Hoque, M. A.; **Abad, K.**; Kharel, S.; Mosebi, A.; Thompson, J. Downstream Separation of Formic Acid with Anion-Exchange Resin from Electrocatalytic Carbon Dioxide (CO<sub>2</sub>) Conversion: Adsorption, Kinetics, and Equilibrium Modeling. *Industrial & Engineering Chemistry Research* 2024, 63 (6), 2779-2790.
- Abad, K.**; Bhatnagar, S.; Jorgensen, T.; Sarma, M.; Liu, K.; Thompson, J. G., Removal of CO<sub>2</sub> Capture Solvent Contaminants and Degradation Products Using Activated Carbon. *Industrial & Engineering Chemistry Research* 2024, 63 (1), 498-507.
- Toma, S.; Mosebi, A.; Gao, X.; **Abad, K.**; Bhatnagar, S.; Qian, D.; Liu, K.; Thompson, J. G. Targeted electrochemical reduction of carcinogenic N-nitrosamines from emission control systems within CO<sub>2</sub> capture plants. *Chemosphere* 2023, 333, 138915.
- Xiao, M.; Sarma, M.; Nguyen, D.; Ruelas, S.; Yang, L.; Bhatnagar, S.; Jorgensen, T.; **Abad, K.**; Liu, K.; Thompson, J., Efficient carbon capture using sub-textured polymer packing surfaces via 3D printing. *Chemical Engineering Science* 2023, 267, 118320.
- Moreno, D.; Mosebi, A.; Jeon, B. W.; **Abad, K.**; Kim, Y. H.; Thompson, J.; Liu, K. Electrochemical CO<sub>2</sub> conversion to formic acid using engineered enzymatic catalysts in a batch reactor. *Journal of CO<sub>2</sub> Utilization* 2023, 70, 102441.
- Jorgensen, T. B.; **Abad, K.**; Sarma, M.; Guzman, M. I.; Thompson, J. G.; Liu, K., Research on oxygen solubility in aqueous amine solvents with common additives used for CO<sub>2</sub> chemical absorption. *International Journal of Greenhouse Gas Control* 2022, 116, 103646.
- Thompson, J.; Matin, N.; Mosebi, A.; Moreno, D.; **Abad, K.**; Liu, K., Electrochemical CO<sub>2</sub> conversion to formic acid through the Andora process. *SSRN Electronic Journal* 2022.
- Jorgensen, T.; Thompson, J.; Sarma, M.; **Abad, K.**; Liu, K., Oxygen Solubility in Aqueous Amine Solvents with Common Additives Used for CO<sub>2</sub> Chemical Absorption. *SSRN Electronic Journal* 2022.
- Sarma, M.; **Abad, K.**; Nguyen, D.; Ruelas, S.; Liu, K.; Thompson, J., Investigation of chemical stabilities and contact angle of 3D printed polymers with CO<sub>2</sub> capture solvents to enhance absorber performance. *International Journal of Greenhouse Gas Control* 2021, 111, 103478.
- Moreno, D.; Mosebi, A.; **Abad, K.**; Jeon, B. W.; Landon, J.; Liu, K.; Kim, Y. H.; Thompson, J., Electrochemical Utilization of CO<sub>2</sub> From Coal Power Plants. *SSRN Electronic Journal*

Schuyler, T. J.; Irvin, B.; **Abad, K.**



American Chemical Society  
The National Society of Leadership and Success

SKILLS AND TRAINING

Instrumentation Agilent TOF-MS, Dionex IC, Agilent IC -MS, Agilent GC/MS, 3D printer, CR,  
Gel electrophoresis, microwave digestion  
Software Masshunter, MSD Chemstation, Chromeleon, JM , Matlab, Cura