Curriculum Vitae

Thomas Jorgensen

2540 Research Park Dr, Lexington, KY, 40511 | thomas.jorgensen@uky.edu

EDUCATION

University of Kentucky

Doctoral Candidate for Doctorate Degree in Philosophy of Chemistry Aug 2019 – Present

Areas of Concentration: Environmental; Analytical Chemistry **In-Progress**

Thesis: Solvent Degradation Effects on Amine Scrubbing in Post-Combustion Carbon Capture

Indiana University

Bachelor of Science in Chemistry May 2016

Areas of Concentration: Environmental, Analytical Chemistry

Minor: Mathematics, Environmental Chemistry

Research Projects:

* Cr-VI Concentrations in Drinking Water Samples Coming from Three Different Sources of Water: Ground, Surface, and Well Waters
* Preparation of 1,3-dimethyl-4H-cyclopenta[c]thiophene-6-carbaldehyde

TEACHING EXPERIENCE

Jefferson Technical and Community College

Tutor – Natural Science and Mathematics Learning Center Aug 2013 – June 2015

Tutored Algebra, Calculus, General Chemistry, Organic Chemistry, Physics, and Trigonometry

Indiana University

Tutor – Natural Science Learning Center Jan 2014 – June 2016

Tutored General Chemistry, Analytical Chemistry, and Organic Chemistry

Teacher Assistant – Introductory Chemistry and General Chemistry I and II Laboratory Jan 2014 – June 2016

Assist in teaching introductory laboratory skills to students, grade lab reports, and set up laboratory experiments for students.

Supplemental Instructor – Introductory Chemistry and General Chemistry I and II Jan 2015 – June 2016

Provided additional lecture material and homework assistance to introductory and general chemistry students. Provided activities for students to learn and interact with the lecture material.

University of Kentucky

Teaching Assistant – General Chemistry II Laboratory Aug 2019 – June 2020

Lectured, graded assignments, and facilitated general chemistry laboratory under the guidance of the laboratory coordinator, Dr. April French.

Research Assistant – Center for Applied Energy Research June 2020 – Present

Performed research tasks and data analysis for carbon capture amine scrubbing. Research studies include degradation studies, equilibrium studies, and speciation studies using Thermo-fisher Ion Chromatography, Thermo-fisher and Metronome electrochemical probes, Bruker 600 MHz NMR, Omega Pressure transducers, and Omega RTD thermometers.

Professional Experience

Whip Mix

Associate Research Scientist Fed 2019 – June 2019

Provide research assistance and data analysis for photocatalytic material for 3D printing. Aided PI by performing catalyst synthesis and creating 3D structures studied for physical properties such as sheer or adhesion strength using Microsoft Excel and data plot software.

Aerotek Scientific – Dow Chemical Inc

Quality Control Laboratory Analyst Sept 2017 – Feb 2019

Provide QC analysis following SOP and customer specifications for silicon products. Performed physical property testing such as viscometry, shear and adhesion strength, and density. Performed chemical testing on Thermo-fisher ion chromatography, Agilent Gas Chromatography with thermal conductivity, and Agilent FTIR.

Aerotek Scientific – Catalent Inc.

Quality Control Laboratory Analyst April 2017 – June 2017

Provide QC analysis following SOP and customer specifications for pharmaceutical compounds in a GMP environment using Agilent Gas and Liquid Chromatography, UV-Vis Spectrophotometer, and a Thermo-Fisher FTIR. Presented the data for review by creating data analysis reports.

Creosalus

Quality Control Laboratory Analyst June 2016 – March 2017

Provide QC analysis following SOP procedures in a GMP environment for protein synthesis utilizing Water’s Acquity H class UPLC with a UVMS detector, Perkin Elmer Elemental Analyzer, and Water HPLC. Presented the data for review by creating data analysis reports.

Publication and presentations

## Publications

**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 CO2 chemical absorption. *International Journal of Greenhouse Gas Control* **2022,** *116*, 103646.

**Jorgensen, T. B**.; Thompson, J.; Sarma, M.; Abad, K.; Liu, K., Oxygen Solubility in Aqueous Amine Solvents with Common Additives Used for CO2 Chemical Absorption. *SSRN Electronic Journal* **2022**, 9.

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.

## Oral Presentations

“Conquering Oxidative Degradation”

Decarbonization Collaborative Review Meeting at UK CAER Nov 16-17, 2021

“*DO measurements in Amine Solvents*”

University of Texas – Austin Jan 25-27, 2022

“*Dissolve Oxygen Trends in Amine Solvents for Post-Combustion Carbon Capture”*

ACS Meeting Fall 2022 – Chicago ILAugust 20-25, 2022

## Poster Presentations

“Research into Reactions and Speciation for Common MEA Thermal Degradation Products using 13C- and 1H-NMR”

Post Carbon Capture Conference Sept 24-27, 2023

Professional Affiliations

American Chemical Society 2021 - Current