

## THOMAS JORGENSEN

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### 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, Trigonometry

Indiana University

**Tutor – Natural Science Learning Center**

Jan 2014 – June 2016

Tutored: General Chemistry, Analytical Chemistry, Organic Chemistry

**Teacher Assistant – Introductory Chemistry and General Chemistry I and II Laboratory**

Jan 2014 – June 2016

Assist professor teaching introductory laboratory skills to students, grade lab reports, and setup laboratory experiments for labs.

**Supplemental Instructor – Introductory Chemistry and General Chemistry I and II**

Jan 2015 – June 2016

Provide additional lecture material and homework assistance to introductory and general chemistry students, provided activities to students to learn and interact with the lecture material.

University of Kentucky

**Teaching Assistant – General Chemistry II Laboratory**

Aug 2019 – June 2020

Lectured and facilitate general chemistry laboratory under the guidance of the laboratory coordinator: Dr. April French. Responsible for grading assignments, giving lecture material to students, and facilitating lab for students.

**Research Assistant – Center for Applied Energy Research**

June 2020 – Present

Performed research and data analysis for carbon capture amine scrubbing. Performed degradation studies using Thermo-fisher Ion Chromatography, Thermo-fisher and Metronome electrochemical instruments.

### PROFESSIONAL EXPERIENCE

Whip Mix

**Associate Research Scientist**

Fed 2019 – June 2019

Provide research and data analysis for photocatalytic material for 3D printing. Analysis included shear strength, adhesion strength, analytical analysis on Microsoft Excel. Assisted lead researcher by performing synthesis of catalyst and created 3D structures that could have physical properties analyzed.

Aerotek Scientific – Dow Chemical Inc

**Quality Control Laboratory Analyst**

Sept 2017 – Feb 2019

Provide QC analysis following company procedure and customer specifications of silicon products using Thermo-fisher ion chromatography, Agilent Gas Chromatography with thermal conductivity, Agilent FTIR, physical properties such as viscometry, shear strength, adhesion strength on an Instron. Created data analysis reports for customers.

Aerotek Scientific – Catalent Inc.

**Quality Control Laboratory Analyst**

Utilize SOP and customer analytical methods to analyze different pharmaceutical compounds in a GMP environment using Agilent Gas Chromatography, UV-Vis Spectrophotometer, Agilent Liquid Chromatography, and a Thermo-Fisher FTIR and presented the data for review by creating data analysis reports.

**April 2017 – June 2017**

Creosalus

**Quality Control Laboratory Analyst**

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 to determine purity, elemental analysis, and concentration of synthesized compounds. Presented the data for review by creating data analysis reports.

**June 2016 – March 2017**

**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 CO<sub>2</sub> chemical absorption. *International Journal of Greenhouse Gas Control* **2022**, *116*, 103646.

**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 IL

August 20-25, 2022

**PROFESSIONAL AFFILIATIONS**

American Chemical Society

2021 - Current