

# Ahassan Ibrahim, Ph.D.

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## Professional Summary

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As a Postdoctoral Research Scholar in the Wood Science & Engineering Department at Oregon State University, I specialize in sustainable chemistry, particularly in the catalytic conversion of biomass into high-value biofuels and chemicals. With a robust background in chemistry and biology, coupled with extensive experience in pharmaceutical quality control, I bring a multidisciplinary approach to solving complex energy challenges. My research focuses on utilizing sustainable catalysts to enhance the efficiency and economic viability of biofuel and chemical production. My work is driven by a commitment to sustainability and innovation, making significant contributions to the fields of renewable energy and environmental chemistry.

## Education

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### Ph.D. in Sustainable and Environmental Chemistry

*Mississippi State University, United States.*

Graduated: May 2024

**Dissertation:** Catalytic upgrading of rice straw bio-oil with alcohols using different bimetallic magnetic nano-catalysts.

### Master of Science in Chemistry

*King Fahd University of Petroleum and Minerals, Saudi Arabia.*

Graduated: May 2020

**Thesis:** Synthesis and Characterization of Zeolite Catalyst for Dry Reforming of Methane.

### B.Sc. Biological Science (Chemistry)

*University of Ghana (UG), Ghana*

Graduated: May 2012

**Thesis:** chemical analysis of petroleum ether and ethyl acetate extract of the seeds of a medicinal plant known as *voacanga Africana* in column chromatography

## Professional Experience

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### Postdoctoral Research Scholar

*Wood Science & Engineering Department, Oregon State University*

May 2024 – Present

Leading research on the catalytic upgrading of biomass into biofuels, focusing on nanocatalysts to improve yield and efficiency.

Collaborating with interdisciplinary teams to integrate biofuel production with renewable energy systems, enhancing sustainability.

Mentoring graduate students in advanced research techniques such as microscopy, spectroscopy, and computational modeling.

Contributing to the department's efforts in securing research grants and publishing in high-impact journals.

### **Ph.D. Candidate**

*Department of Sustainable Bioproducts, Mississippi State University*

August 2021 – May 2024

Conducted pioneering research on catalytic upgrading of rice straw bio-oil, published in leading scientific journals.

Presented research at national conferences, receiving accolades for both poster and oral presentations.

Awarded the CFR Award for Most Outstanding Graduate Student of the Year (2023).

### **Quality Control Chemist**

*Pharmaceutical Industry*

August 2012 – January 2018

Spearheaded quality control processes, ensuring compliance with industry standards and regulations.

Conducted rigorous testing using advanced analytical instruments such as GC-MS, HPLC, and FT-IR.

Played a pivotal role in maintaining high product quality, contributing to the company's success.

## **Professional Development**

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### **Preparing Future Faculty (PFF) Program**

Mississippi State University, Completed April 2024

### **Advanced Data Analysis in Chemistry**

Oregon State University, Ongoing

**Grant Writing and Proposal Development Workshop**  
Oregon State University, Completed June 2024

## **Academic Distinction and awards**

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**CFR Award for Most Outstanding Graduate Student of the Year**, Mississippi State University, 2023.

**Best Annual Poster Presentation**, Mississippi State University, 2022.

**3rd Place, Graduate Research Symposium Oral Presentation**, Mississippi State University, 2023.

## **List of Publications**

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1. **Ibrahim, A.**, Elsayed, I., & Hassan, E. (2024). "Upgrading of Rice Straw Bio-Oil using 1-Butanol Over ZrO<sub>2</sub>-Fe<sub>3</sub>O<sub>4</sub> Bimetallic Nano-catalyst Supported on Activated Rice Straw Biochar". *Under Preparation*.
2. **Ibrahim, A.**, Elsayed, I., & Hassan, E. (2024). "Catalytic Upgrading of Rice Straw Bio-Oil via Esterification in Supercritical Ethanol over Bimetallic Catalyst Supported on Rice Straw Biochar". *Energies*, 17(2), 407. <https://doi.org/10.3390/en17020407>
3. Amen, R., **Ibrahim, A.**, & Hassan, E. (2023). "A Critical Review on PFAS Removal from Water: Removal Mechanism and Future Challenges". *Sustainability*, 15(23), 16173. <https://doi.org/10.3390/su152316173>
4. Sajid, S. M., Tanimu, A., **Ibrahim, A.**, & Alhooshani, K. (2023). "Development of Nickel Impregnated Nitrogen-Doped Activated Carbon for Micro-Solid-Phase Extraction of Chlorinated Hydrocarbons Assessment in Wastewater". *Arabian Journal for Science and Engineering*. <https://doi.org/10.1007/s13369-023-07625-y>

## **Conferences and Presentations**

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**Presenter**, *ACS Fall 2024 Conference, Denver, CO.*

Topic: "Nanocatalysts in Biofuel Production: Innovations and Future Directions"

Topic: "Upgrading Bio-Oil via Catalysis: Challenges and Solutions"

**Presenter**, *FPS International Conference, Morgantown, WV, June 6-8, 2023.*

Topic: " Production, Characterization, and Upgrading of Fast Pyrolysis Bio-Oil from Rice Straw Feedstock "

**Presenter**, *Chemindix 11th International Conference, Bahrain, October 2019.*

Topic: " Investigating the Effect of Ammonium Fluoride Media in Synthesis and Characterization of Zeolite Catalyst Material "

**Presenter**, *Saudi-Japan Symposium, Saudi Arabia, November 2019.*

Topic: " Investigating the Effect of Ammonium Fluoride Media in Synthesis and Characterization of a Metal Containing Zeolite Catalyst Material for Dry Reforming

## **Skills**

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**Research Techniques:** Advanced microscopy, spectroscopy, computational modeling, GC-MS, HPLC, FT-IR.

**Nanocatalysis:** Synthesis, characterization, and application in biofuel production.

**Leadership and Mentorship:** Guiding graduate students in research projects and professional development.

**Sustainable Chemistry:** Expertise in biofuel production, environmental impact assessment, and renewable energy solutions.

## **Professional Membership**

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American Chemical Society (**ACS**)

National Organization for the Professional Advancement of Black Chemists and Chemical Engineers (**NOBCChE**)

Forest Products Society (**FPS**)

International Society of Wood Science and Technology (**SWST**)

**Recommendation available on request**

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