Mustapha Bello, Ph.D.

Wisconsin, USA
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Chemical Engineering sustainability researcher with a focus on the Energy and Environment sectors. Research centers on converting CO_2 and CO into useful fuels, such as ethanol and vinegar, using electroreduction. Committed to sustainable energy and leading projects aimed at net-zero carbon emissions.

The love of teaching, mentoring, community engagement, and giving back to the community are central to this professional identity. These values shape my approaches to research, collaboration, and leadership in the field.

Academic Background

Ph.D., Cain Department of Chemical Engineering, with Minor in Global Leadership
Louisiana State University, Baton Rouge, Louisiana. USA

M.S., Leadership and Human Resources Development
Louisiana State University, Baton Rouge, Louisiana. USA

M.Sc., Reservoir Geoscience and Engineering
ENSPM - École Nationale Supérieure du Pétrole et des Moteurs (IFP School),
Rueil-Malmaison, France

Graduate Certificate, Future Faculty Readiness
Louisiana State University, Baton Rouge, Louisiana. USA

B.Sc., Chemical Engineering
University of Lagos, Lagos, Nigeria

Academic Research and Achievements

DISSERTATION:

Electrochemical Reduction of CO in Membrane Electrode Assembly Cells at Copper-Based Electrocatalyst

SELECTED PUBLICATIONS:

1. Anolyte Buffering and CO Coverage Effects in the Electrochemical Reduction of CO at Cu Electrocatalysts. ACS Applied Energy Materials. https://doi.org/10.1021/acsaem.5c01865
2. Highly Selective Electrolytic Reduction of CO2 to Ethylene. ACS Applied Energy Materials. ACS Applied Energy Materials. https://doi.org/10.1021/acsaem.5c01866
3. Electrochemical reduction of CO2: a common acetyl path to ethylene, ethanol or acetate. 2024. Journal of The Electrochemical Society. https://doi.org/10.1149/1945-7111/ad2cc1

4. Activity and Selectivity in the Electrochemical Reduction of CO2 at CuSnx Electrocatalysts Using a Zero-Gap Membrane Electrode Assembly. 2024. Journal of The Electrochemical Society. https://doi.org/10.1149/1945-7111/ad6fd7
5. Fundamental Insights into Copper-Epoxy Interfaces for High-Frequency Chip-to-Chip Interconnects. 2024. ACS Applied Materials & Interfaces. https://doi.org/10.1021/acsami.4c16414
6. A guide to design the trajectory of active particles: From fundamentals to applications. 2022. Current Opinion in Colloid & Interface Science. https://doi.org/10.1016/j.cocis.2022.101612
7. Biofilm Formation Influences the Wettability and Settling of Microplastic. 2022. Environmental Science & Technology Letters. ACS. https://doi.org/10.1021/acs.estlett.2c00728

SELECTED CONFERENCE PRESENTATION:

1. Comparative Selectivity of CO and CO2 Reduction Using Cu Electrocatalysts in Zero-Gap MEA Cells. Electrochemical Society Meeting. Prime, 2024
2. pH Effects in the Electrochemical Reduction of CO at Cu Electrocatalysts in an MEA Cell Configuration. Electrochemical Society Meeting, 245, 2024
3. Rolling of Janus particles in magnetic fluids. 96th ACS Colloids and Surface Science Symposium, Golden, Colorado School of Mines, July 12, 2022

FELLOWSHIPS:

1. Board of Regents Graduate Fellow
2. George A Daniels Graduate Fellow
3. Southern Regional Education Board (SREB) Fellow
4. NSBE/Intel Scholars

LEADERSHIP / LEADERSHIP AWARD:

1. Global Leadership Award (Awarded in Thailand)
2. President, African Graduate Student Association (AGSA) LSU, 2023-2024
3. President, African Graduate Student Association (AGSA) LSU, 2022-2023
4. President, Chemical Engineering Undergraduate Class, 2003-2008

ACADEMIC HONORS:

1. Best Graduating Student in Engineering, University of Lagos. 2008
2. Best Graduating Student in Chemical Engineering, University of Lagos. 2008
3. Academic Leadership Award, University of Lagos. 2008

Academic Community

ACADEMIC COMMUNITY ENGAGEMENT

1. Journal Peer Reviewer – Journal of Electrochemical Society (JES)
2. Journal Peer Reviewer – American Chemical Society (ACS)
3. Phi Kappa Phi (ΦΚΦ)
4. Electrochemical Society (ECS) Education Committee Member
5. Electrochemical Society (ECS) Student Ambassador
6. Illinois Science & Technology Coalition (ISTC) Mentor
7. Brave Space with Elaine (BSWE) Mentor
8. Environ Mentor (Louisiana State University)

ACADEMIC ASSOCIATION

1. Electrochemical Society (ECS)
2. American Chemical Society (ACS)
3. American Institute of Chemical Engineers (AIChE)
4. Society of Petroleum Engineers (SPE)
5. National Society of Black Engineers (NSBE)
6. National Organization for the Professional Advancement of Black Chemists and Chemical Engineers (NOBCChE)

Additional Academic Training

COLLABORATIVE INSTITUTIONAL TRAINING INITIATIVE (CITI PROGRAM)

1. Social and Behavioral Responsible Conduct of Research
2. Social & Behavioral Research

CENTER FOR THE INTEGRATION OF RESEARCH, TEACHING AND LEARNING (CIRTL)

1. An Introduction to Evidence-Based Undergraduate STEM Teaching, 2023

MASSIVE OPEN ONLINE COURSES (IFP SCHOOL, FRANCE)

1. MOOC Energy Transition, 2020
2. MOOC Energy Transition, 2019
3. MOOC Tomorrow's Mobility, 2018
4. MOOC Sustainability Mobility, 2017
5. MOOC From Exploration to Distribution, 2016

Teaching Experience

1. CHE 2171, Fundamental Material and Energy Balance
2. CHE 2172, Thermodynamics
3. CHE 3102, Heat and Mass Transfer
4. CHE 4253, Introduction to Industrial Pollution Control

Professional Experience

— Key Strengths and Productive Outcomes —

- Analytical thinking has led to new methods for CO_2 electroreduction and better process efficiency in lab and field work.
- Strong communication and teamwork have supported successful projects and published research.
- Creative problem-solving and clear communication with diverse teams have enabled cross-disciplinary innovations and new research techniques.
- Attention to detail in data analysis has improved experimental accuracy and reduced errors in academic and industrial settings.
- Meeting challenges has driven lab safety improvements, higher team productivity, and sustainable results in energy research.
- Hands-on skills with laboratory equipment have reduced downtime and ensured reliable results in demanding experiments.
- Safety focus in oil and gas operations has resulted in zero lost-time incidents and consistent safety compliance.
- Transformational leadership has improved team performance, fostered learning, and delivered measurable project results.
- Mentoring junior engineers and students has improved team skills and enabled successful project handovers.
- Recognition for leadership, safety, and efficiency has come from major industry organizations and through awards for team contributions and project outcomes.

BAKER HUGHES, a GE COMPANY (USA, Canada and Argentina)

- **Field Engineer General,** August 2019 to August 2020
- **Field Engineer Senior,** September 2018 to July 2019

An engaging and detail-oriented team leader with proven experience as a Field Engineer General. Skilled at acquiring, processing, and interpreting reservoir data to support operational decisions and drive results.

Selected Contributions:

- Resolved well-site problems of moderate complexity, improving efficiency and reducing downtime. Advised on logging and completion operations, enabling timely troubleshooting and better decision-making.
- Supervised and trained junior engineers and crews, increasing team competency and speeding up onboarding. Assisted with training in completion operations and maintenance.
- Coordinated with customer representatives and drill crews, ensuring smooth rig operations and reducing delays. Maintained strong customer relations, supporting client satisfaction and repeat business.
- Managed equipment and facility maintenance, reducing breakdowns and extending equipment life. Maintained accurate records for traceability, compliance, and audit readiness.
- Oversaw crews and equipment at well-sites and shops, improving service quality and reducing safety incidents. Consistently performed all responsibilities safely, achieving zero lost-time incidents and full compliance with HSE policies.
- Performed additional district duties, contributing to smoother cross-team operations and consistent project delivery. Adapted to extra duties as required, supporting district-wide goals.
- Conducted all business activities according to company legal, ethical, and HSE standards, maintaining high professional integrity.
- Recognized for leadership, safety, and efficiency by industry organizations and through awards for team contributions and project outcomes.

NOVELLA, an IQVIA COMPANY (USA)
Research Associate, December 2016 to March 2018

Maximized operational efficiency as the primary contact between Novella, investigational sites, and pharmaceutical partners. Coordinated all correspondence and ensured timely transmission of clinical data and technical reports. Provided structure through study initiation, protocol review, regulatory monitoring, and eCRF training. Led site evaluation visits and authorized site audits for data integrity. Ensured completion of study deliverables and conducted field visits and training for research associates.

Selected Contributions:

- Improved project timelines by ensuring prompt study initiation and efficient coordination between all parties.
- Enhanced data quality and compliance by verifying electronic CRF data and source documents.

- Increased staff capacity and reduced errors through targeted EDC system training and site computer verification.
- Supported regulatory compliance and data integrity by leading site audits and monitoring visits.
- Achieved full study deliverables on schedule, contributing to successful project closeouts and client satisfaction.
- Strengthened team skills and knowledge by providing field training and mentoring to research associates.
- Recognized for leadership and performance with Team Recognition for Excellence, Client Recognition for Excellence, and Manager Recognition for Perfect Metrics.
- Maintained high standards of communication and documentation, supporting audit readiness and operational transparency.

SCHLUMBERGER (Saudi Arabia, United Arab Emirates, and India)
Field Engineer Senior, April 2012 to October 2016

- **Schlumberger Middle East** - Saudi Arabia
  Senior Field Engineer, May 2015 to October 2016

- **Schlumberger Asia Services Limited** - India
  Senior Field Engineer, September 2012 to April 2015

- **Schlumberger Middle East** – United Arab Emirates
  Field Engineer, April 2012 to September 2012

Created long-lasting success through leadership and supervision of sophisticated Oil Field Operations; Exhibited calm, clear-headed leadership through management of oilfield crew during preparation, initiation, and finalization of oilfield operations.

Selected Contributions:

- Increased operational efficiency by submitting all required reports and data on time, supporting faster decision-making and regulatory compliance.
- Delivered high-quality service to oil producers, leading to repeat business and strong client relationships.
- Applied technical expertise in open-hole and cased-hole logging, coring, formation pressure testing, and seismic/explosive operations. This improved data reliability and reduced non-productive time.
- Maintained strict safety standards for personnel and equipment. Achieved incident-free operations and extended equipment life through regular calibration and maintenance.

- Enhanced planning and execution of well-site operations, minimizing delays and optimizing resource use.
- Led and supervised oil field crews, resulting in improved team performance and operational consistency.
- Trained and developed junior staff, raising team competency and supporting workforce retention.
- Recognized for reservoir optimization in high-profile projects, contributing to increased production and resource recovery.
- Earned awards for leadership, safety, and efficiency from Oil and Natural Gas Corporation India, reflecting industry best practices and positive safety culture.
- Received recognition for both offshore and onshore safety, supporting a record of zero lost-time incidents and full compliance with HSE standards.

TOTAL

Reservoir Engineer (USAN FIELD), July 2011 to December 2011

- Applied new ideas and technical skills to complex projects. Delivered results in Well Interference Design, Rock Compressibility Data Analysis, and Gas Management Design.
- Wrote program code to optimize reservoir production. Improved output and efficiency.
- Analyzed well interference and rock data. Supported better reservoir management decisions.
- Enhanced gas management plans. Helped balance production and safety needs.
- Recognized by the Project Manager for its direct impact on project success.
- Contributed to team goals by providing precise, actionable data and solutions.
- Maintained high standards in all project work. Supported company objectives and operational targets.

Professional Development

1. Radiation Level 2 Certified (Radiation Safety Officer)
2. Explosive Level 2 Certified (Explosive Safety Officer)
3. QHSE Certified
4. Crew Management

ADDITIONAL AWARDS AND CERTIFICATIONS

1. Offshore and Sea Survival Training
2. Safety Award