

Yohannes Shuka Jara

(PhD Candidate in ACCES)

Department of Chemical, Biological,

Pharmaceutical and Environmental Sciences

University of Messina

Messina, Italy



Birth date: Dec 8, 1996 || Nationality: Ethiopian || Mobile: +251945010811 or +39 3393357466|| Passport: E00037839; Email: yohannes.suka@bru.edu.et or jraynn96t08z315u@studenti.unime.it

Education	**Achievement**	**Year**
PhD Candidate in ACCES at University of Messina, Italy	Progress	Since Nov 1/2025
MSc. degree in Physical Chemistry from Hawassa University, Ethiopia	CGPA: **4.00/4.00**	(**2024**)
BSc. degree in Chemistry from Dilla University, Ethiopia	CGPA: **3.78/4.00**	(**2019**)

Professional Experiences

- **Lecturer of Physical Chemistry**, Department of Chemistry, Collage of Natural and Computational Sciences, Borana University, **22 October, 2024 - 31 December, 2025.**
- **Chief-in Laboratory Chemist and Researcher**, Department of Chemistry, Collage of Natural and Computational Sciences, Madda Walabu University, **11 September, 2024- Nov 7, 2024**
- **Senior Lab Technical Assistance**, Department of Chemistry, Collage of Natural and Computational Sciences, Madda Walabu University, **10 Jan, 2020**-11 September, 2024

Research and Social Media

- **Google Scholar**
- **ORCID**
- **ResearchGate**
- **SciProfile**
- **Scopus ID**
- WoS ResearchID
- LinkedIn
- Scholar Profile
- **Facebook**
- **WhatsApp**
- Telegram-ID
- **YouTube**
- **Skype ID**
- **X - page**
- **Award Web**

Research Experiences and Interest Areas

Thematic areas: Green synthesis of Advanced Nanomaterials (nanoparticle, nanocomposite, quantum dot) and its semiconductors engineering for sustainable applications, including green energy conversion, CO_2 reduction, Harvesting of ROS, Green Chemical Fuel (H_2O_2, H_2, CH_4), Electrochemical Advanced catalysis design for EC sensors, Bio-nano sensors, EC, PC, PEC and PV/EC, Water Treatment Technology, and Environmental remediation.

Peer-Reviewed Publication

1. **Yohannes Shuka** Jara* Review on Adsorption Techniques for the Removal of Toxic Organic Dyes: Water Treatment Technology. JSM Chem 11(1): 1066 (**2025**).
2. **Yohannes Shuka** Jara* "Exploring the Extraordinary Property of CuO Nanoparticles for Nanomedicine and Nanotechnology" Journal of Recent Advances in Nanomedicine & Nanotechnology (JRANN); 01:555573 (**2025**). DOI: 10.19080/JRANN.2025.01.555573
3. Tesfahun Eyoel, **Yohannes Shuka*,** Sisay Tadesse, Tekalign Tesfaye, Mesele Mengesha ''Green

Energy: Power Generation Improvement in MFC Using Biosynthesized Polyaniline Coated Co_3O_4 Nanocomposite'' *Wiley-International Journal of Energy Research,* 1:16 (**2025**). https://doi.org/10.1155/er/2936572 2.

4. Jara, **Yohannes Shuka**, Endale Tsegaye Mohammed, and Tilahun Tumiso Mekiso. "Biosynthesized pure CuO, N-CuO, Zn-CuO, and N-Zn-CuO nanoparticles for photocatalytic activity: Enhanced optical properties through bandgap engineering." *Next Materials* 8 (**2025**): 100742. https://doi.org/10.1016/j.nxmate.2025.100742
5. Tekalign Tesfaye, **Yohannes Shuka***, Sisay Tadesse, Tesfahun Eyoel, Mesele Mengesha. ''Improving the power production efficiency of microbial fuel cell by using biosynthesized polyanaline coated Fe_3O_4 as pencil graphite anode modifier.'' *Scientific Report* 15, 587 (**2025**). https://doi.org/10.1038/s41598-024-84311-5
6. Mengesha, Mesele, **Yohannes Shuka***, Tesfahun Eyoel, and Tekalign Tesfaye. "Novel Biomaterial-Derived Activated Carbon from Lippia Adoensis (Var. Koseret) Leaf for Efficient Organic Pollutant Dye Removal from Water Solution." *American Journal of Applied Chemistry* 12, no. 3 (**2024**): 29-46. https://doi.org/10.11648/j.ajac.20241202.11
7. Jara, **Yohannes Shuka***, Tilahun Tumiso Mekiso, and Alemayhu Pawulos Washe. "Highly efficient catalytic degradation of organic dyes using iron nanoparticles synthesized with Vernonia Amygdalina leaf extract." *Scientific Reports* 14, no. 1 (**2024**): 6997. https://doi.org/10.1038/s41598-024-57554-5
8. Jara, Yohannes Shuka*, and Alemu Nigussie Gari. "The Impact of Land Use Types on Soil Physicochemical Properties and Agricultural Productivity: a Case of Gojera Kebele, Dinsho District, South Eastern Ethiopia." *Research square* (**2023**). https://doi.org/10.21203/rs.3.rs 3624549/v1
9. Jara, **Yohannes Shuka*** and Anbess, Mekonen Abera "Estimation of Citric Acid and Sugar Content and Its Nutritional Values of Selected Acidic Fruits, Available in Local Market, Robe Town, Ethiopia." *Journal of Equity in Sciences and Sustainable Development* 5, no. 1 (**2022**): 46 57. https://doi.org/10.20372/mwu.jessd.2022.1530

Manuscripts under Review

1. Eco-Friendly Synthesis of Spinel Fe_3O_4/Co_3O_4 Nanocomposite and Its Photocatalytic Degradation Efficiency for Toxic Organic Dyes Under Solar Irradiation || **Status** –Accepted || **Journal** – Wiley - *J. Nanotechnology*
2. Catalytic Degradation of Toxic Rhodamine B and Safranin O Dyes with Green Synthesized Copper Nanoparticles || **Status** –Under Review || **Journal** – Spring - *Int J. for Envi. Eng*
3. A Novel Nano-Organocatalyst from Banana Peels for the Efficient Synthesis of Arylidene Malononitrile Derivatives: From Waste to Value || **Status** –Under Review || **Journal** – Wiley - *J. Nanotechnology*
4. Clean Environment: Highly Efficient *Vernonia Amygdalina* Biosorbent for the Wastewater Treatment || **Status** –Under Review || **Journal** – LIDSEN- J. *Adv. in Envi and Eng. Res.*

Manuscripts in Preparation

1. Nanotechnology as a Sustainable Solution for Catalytic Materials, Green Energy, Environmental Remediation, and Biomedical Applications: ***A Perspective Review***
2. A ***Review*** on Effective Adsorbents for Removal of Pesticide from Contaminated Water: Advances in Treatment Technologies
3. Photocatalytic Degradation of Crystal Violet Under Solar Irradiation Using a Biosynthesized ZnO-Based Polyaniline: ***Original Article***
4. Solar driven H_2O_2 Production as a Sustainable Fuel: Approaches, Advanced Materials, and Performance Enhancement Strategies: ***Systematic Review***

Ongoing Research

1) Production and Accumulation of High-Test Peroxide (H_2O_2) and Hydrogen (H_2) from Water and Sunlight for Space Propellant Applications: Advanced Materials and Method Design (***Active PhD Project, Under ERIC funded by Green Swap, EU Commission***)
2) Development of an Innovative PANI/Co_3O_4/Fe_3O_4 Nanocomposite Electrode to Enhance the Efficiency of CO_2 Conversion into Green Chemical Fuels (***Suspended PhD proposal***)
3) Exploring the potential of biosynthesized N-Zn-codoped CuO NPs using *Pycnostachys Abyssinica* for Biological activity (anti-malaria, antioxidant, anti-microorganism), Electrochemical activity (Bio-Nano-sensor), and Improving Green energy production in MFC (***Paused project***)
4) Assessment of Water Quality and Its Effect on Human and Domestic Animal Health in the Borana Zone, Southeastern Ethiopia: Integrating a One Health Approach (***Paused project***)

Journal Peer Reviewer and Membership

1. International Journal of Scientific Research and Innovation (5 Reviewing, Certified)
2. Journal of Food Science and Engineering (1 Reviewing, certified)
3. Physical Science International Journal (1 Review, Certified)
4. Sustainable chemical Engineering (1 Review, Certified)
5. Editorial Board Member at Deep Science Publishing (Certified)
6. Membership for International Research Excellence Awards, Book of Award (Certified)
7. Member for Establishment Committee of Borana University Journal – ***Under Foundation***
8. Member of Chemical Society of Ethiopia

Books and Laboratory Manuals

1. **Title**; Nutritional Values Analysis of the Acidic Fruits || **International Standard Book Number (ISBN)**: 978-620-6-15014-5|| **Publisher:** Lambert Academic Publishing, UK https://www.lap-publishing.com || Online available at; https://morebooks.de/shop-ui/shop/product/9786206150145 Currently the book translated in five language versions (***German, Portuguese, Russian, Spanish and Italian***)
2. **Practical General Chemistry laboratory manual**, Practical Physical Chemistry I laboratory manual, and Practical analytical laboratory manual || **Publisher**: Madda Walabu University, and Borana University, Ethiopia

Certificates of Academic Trainings, Conference attending, Recognition

1. Certificate of Recognition Scitechseries and Organizing Committee for my exceptional contribution as a **speaker** at the "2nd World Congress on Nanotechnology" held at London, UK on November 06-07, 2025. Official Conference Website profile
2. Certificate of Recognition for my contribution as a "**Member of the Scientific Committee**" at the "**Annual International Congress on Nanoscience and Nanotechnology**", organized by Oxford University, which was held in a hybrid format (Oxford, UK/Online) on April 24-25, **2025.**
3. Certificate of Achievement on "***Master Class for Teaching Online (Open edX)***" a course study offered by MoE, Ethiopia, in partnership with MasterCard Foundation, EdPuls Arizona State University, USA and SHAYAHONE. Verified Certificate, issued by Jan 17, **2025**
4. Certificate of Achievement on "***e-SHE: CE101's SS 6 How to study effectively***" a course study offered by MoE, Ethiopia, in partnership with MasterCard Foundation, EdPuls Arizona State University and SHAYAHONE. Verified Certificate, issued by Dec 19,**2024**
5. Certificate of Community Services participation on "***Organizing Chemistry laboratory at Misra Secondary School, Bale Ethiopia and providing training on basic skills of lab handling for the instructor and Lab technicians to improve skills''*** from Nov-Dec, **2024** under guidance and support of Technology Transfer Community Services Directorate of MWU.
6. Certificate of attendance of training on "***Induction and Pedagogical sciences Training for HEIs Instructors***" from Dec 5, 2024 to Dec 7, 2024 organized by Directorate of Academic quality enhancement, Borana University, Yabello, Ethiopia.

7. Certificate of participation of training and innovative competition on "***Solve IT Innovative competition 2023***" From Aug 8-Sep 7, **2023** organized by, iCog Anyone Can Code, Wolaita Soddo, Ethiopia.
8. Certificate of attendance of training on "***Effective scientific communication skills and writing***" from May 19-23, **2022** organized by, academic affairs vice president, Madda Walabu University, Bale Robe, Ethiopia
9. Certificate of recognition on the valuable contribution in the "***Production of MWU COVID 19 Sanitizer***" in the community service project to control the COVID 19 pandemic from May 1, 2020 to Sep 13, **2020** organized by, academic affairs vice president, Madda Walabu University, Bale Robe, Ethiopia.
10. Certificate of attendance of training on "***Safety Procedures & Practical Works in Natural science Laboratory***" from June 9, 2020 to June 13, **2020** organized by Chemistry Department, Madda Walabu University, Bale Robe, Ethiopia

Awards, Honors and Grants

1. **Best Researcher Award in Metallurgical Engineering** recognized for outstanding contributions and innovative research in the field of Metallurgical Engineering by metallurgicalengineering.org, a Scifax Company Group (Reg. No. 159522). Awarded on June 17, **2025**, with approval from the Ministry of Corporate Affairs. Certified.
2. **Presidential Award for graduating with outstanding honors** from Hawassa University for excellence in academic and research achievements during my Master's studies, awarded on July 2, 2024. Certified.

Software and Programming Skills

1. **Software**: Advanced MS offices, SPSS, OriginLab-2018, LabVIEW, ChemDraw, Pcoteng, Gaussian view 09 and Panalytical High X'pert, rGIS and R software by different formal and self-training.
2. **Programming Fundamentals**: Verified Certificate of Completion for the Nanodegree Program in Programming Fundamentals (Coding, Python, JavaScript and C^{++}, Website developing) by Udacity, in collaboration with the Ministry of Labor and Skills and the Ministry of Innovation and Technology of Ethiopia, as well as the Government Experience Exchange Office and the Ministry of Cabinet Affairs of the UAE, issued on Oct 10, 2024.
3. **Artificial Intelligence Fundamentals**: Verified Certificate of Completion for the Nanodegree Program in Artificial Intelligence Fundamentals (AL, ML, Deep Learning, NLP, ChatGPT, RL) by Udacity, in collaboration with the Ministry of Labor and Skills and the Ministry of Innovation and Technology of Ethiopia, as well as the Government Experience Exchange Office and the Ministry of Cabinet Affairs of the UAE, issued on June 25, 2025.

Skills in technical and laboratory instrumentations

1. **Lab Technical Skills:** Experiment designing, Instrument Calibration, Data Analysis, Quality Control, Troubleshooting, Data Documentation, Lab management, Safety Protocols, Solution preparation, Advanced nanomaterials synthesis, Characterization, PC/EC/PV measurement, Electrochemical setup, Production H_2O_2, Green chemical fuel.
2. **Laboratory Instrumentation Skills:** Hands-on experience in common laboratory apparatus, equipment's and some advanced analytical techniques like UV-Vis, Potentialstato, XPS, SEM/TEM, XRD, FT-IR, CV, HPLC, GC-MS, FAAS.

References

1. Prof. Sisay Tadesse (Ph.D, Professor of Physical Chemistry), Hawassa University, Ethiopia. Mobile number: +251916823612; Email: sisaytad@gmail.com
2. Dr. Fikadu Roge (Ph.D, Aossc. Professor of Organic Chemistry), Madda Walabu University, Ethiopia. Mobile number: +251902305975 ; Email: fekroge@gmail.com
3. Mrs. Bilen W/Geberieal (PhD Candidate, Assi. professor of Analytical chemistry), Norwegian University of Life Sciences (NMBU), Norway. Phone No.: +251915875986 || E-mail: letshw2006@gmail.com

