


SIBA MOUSSA, PMP

 sibamoussa.github.io

 sibakmoussa@gmail.com

 +1(514)559-0370

 www.linkedin.com/in/sibam

Education

Ph.D. Electrochemistry, McGill University, Montreal, Canada 2016 – Oct. 2021
Mini-MBA, Faculty of Management, McGill University, Montreal, Canada 2020
BSc. Chemical Engineering (Cum Laude), Texas A&M University, Texas, USA 2012 - 2016

Work Experience

Senior R&D Scientist, InnaMed, Philadelphia, Pennsylvania Oct.2021– Present

- Conducted meta-analysis on electrochemical data, built a CI/CD, TDD-based data analysis pipeline with version control through GitLab
- Leading the development of electrochemical technology for multiplexed analyte detection

R&D Scientist, Eli Health, Montreal, Quebec March – Oct. 2021

- Analyzed lateral flow immunoassay images with jupyter notebook and developed statistical parameters for experimental success
- Led the development of multiplexed imaging technology for at home hormone testing kits

Visiting Scholar, The Protein Factory- University of Insubria, Varese, Italy April – June 2019

- Developed python scripts to automate data analysis from large datasets
- Identified and expressed novel enzymes for incorporation into biosensors

Recognized Achievements & Awards

Mitacs Accelerate Fellowship 2021
T. Sterry Hunt Teaching Award, Clark-SELF Fellowship, MedTech Hackathon (1st place) 2020
Pharmahacks Hackathon (1st place), IUPAC Young Chemist Award, Graduate Mobility Award 2019
McGill Dobson Cup Startup Company Finalist, McGill Outreach Mentoring Award 2018
Cadence Micro-Nanosystems Design Award 2017
Texas A&M University Full Merit Scholarship, Dean's Honor Roll 2013 – 2016

Research Experience

PhD Candidate, McGill University, Montreal, Canada Sept. 2016 – Oct. 2021
Thesis: Development of Electrochemical Sensors for Neurological Applications

- Developed a graphical user interface using Python for automation of sensor data analysis, reducing analysis time by > 50% (PyQT-based)
- Initiated and managed 5 projects with local and international collaborators

Volunteer & Leadership Experience

Peer Reviewer- Journal of the Electrochemical Society 2020 - Current
Invited Panelist- McGill Chemistry Student Panel for STEM Diversity & Inclusion 2020 - Current
Member - McGill Outreach 2017 - Current
Volunteer- Syrian Kids Foundation Tutoring and Grant Writing 2016 - 2020
Vice President, Secretary-The Electrochemical Society Montreal Student Chapter 2016 - 2019
President- Omega Chi Epsilon Chemical Engineering Honor Society 2015 - 2016
Treasurer- Society of Women Engineers 2014 - 2015

Professional Organizations

Project Management Professional (PMP, received March 2021)
Life-Long Memberships: Omega Chi Epsilon, Tau Beta Pi

Skills

Technical: Python (Pytorch, Numpy, Scipy, Scikitlearn, etc), Docker, Electrochemistry, COMSOL, LC/MS, 3-D Printing (SolidWorks, AutoFusion), Matlab, Enzymes
Language: English (Native), Arabic (Native), French (Intermediate), Italian (Beginner)

Publications

- Moussa S., Mauzeroll J., **Sensorlyze: Software for Biosensor Data Analysis**, 2021 (In preparation)
- Moussa S., Chitsaz D., Kennedy T., Pollegioni L., Mauzeroll J., **Scanning Electrochemical Cell Microscopy with Enzymatic Electrochemical Biosensors Reveals D-serine Release from Primary Rat Astrocytes**, 2021 (In preparation)
- Moussa S., Rossini E., Pollegioni L., Mauzeroll J., **A High-throughput Methodology for Glycine Oxidase Biosensor Development Shows Glycine Release from HEK Cells**, *Analytical Chemistry*, 2021 (Accepted)
- Moussa S., Murtas G., Pollegioni L., Mauzeroll J., **Enhancing Electrochemical Biosensor Selectivity with Engineered D-amino Acid Oxidase Enzymes for D-serine and D-alanine Quantification**, *ACS Applied Biomaterials*, 2021, 4 (7), 5598-5604
- Moussa S., Chhin D., Pollegioni L., Mauzeroll J., **Quantitative Measurements of Free and Immobilized RgDAAO Michaelis-Menten Constant Using an Electrochemical Assay Reveal the Impact of Covalent Cross-linking on Substrate Specificity**, *Analytical and Bioanalytical Chemistry*, 2021, 1-10
- Moussa S., Van Horn M., Shah A., Pollegioni L., Thibodeaux C.J., Ruthazer E.S., Mauzeroll J., **A Miniaturized Enzymatic Biosensor For Detection of Sensory-Evoked D-serine Release in the Brain (Editor's Choice)**, *Journal of the Electrochemical Society*, 2021, 168, 025502
- Noyhouzer T., Payne N.A., Moussa S., Beaulieu I., Mauzeroll J., **Portable and Sustainable Device for Arsenic and Lead Water Purification**, *Environmental Science: Water Research & Technology*, 2021
- Zhou H., Yu R., Ran G., Moussa S., Song Q., Mauzeroll J., Masson JF. **In-situ dynamic reaction of Ag NPs: Strategy for the Construction of a Sensitive Electrochemical Chiral Sensor**, *Sensors and Actuators B: Chemical*, 2020, 128315
- Moussa S., Mauzeroll J., **Microelectrodes: An Overview of Probe Development and Bioelectrochemistry Applications from 2013 to 2018**, *Journal of The Electrochemical Society*, 2019, 166 (6), G25

Oral Presentations

- Moussa, S.; Mauzeroll, J. (2018) **Microelectrodes: An Overview of Probe Development and Bio-electrochemistry Applications from 2013 to 2018**, XVIème colloque du Groupe Français de Bioélectrochimie, Sète, France, September 24.
- Moussa, S., Pollegioni L.; Mauzeroll, J. (2018) **Towards Neuronal Cell Studies: D-serine detection with Miniaturized Enzymatic Biosensors**, 8th Electrochemical Society Montreal Student Symposium, UQAM, Montreal, Canada, June 15.
- Moussa, S.; Mauzeroll, J. (2017) **A Micro-liter Temperature-Controlled Flow Cell for Small Scale Studies of CYP 3A4 Enzyme Behavior**, TEXPO 2017, Centre Mont-Royal, Montreal, Canada, September 25. **(1st Place Winner for Best Presentation)**
- Loutfy H., Osman Y., Moustafa S., Abdul Salam A., Moussa S., Najjar A., Darey M., Ahmed B., Salama G. (2015) **Incorporating Design-Based Learning Engineering Experiences in Secondary Science Subjects in Qatar**, INTED 2015, Madrid, Spain, March 2.

Poster Presentations

- Moussa S., Kennedy T., Pollegioni L., Mauzeroll J. (2019) **Quantification of D-amino Acid Release from Primary Rat Astrocytes Using Enzymatic Electrochemical Biosensors**, International Society for Neurochemistry-ASN Meeting, Palais de Congress, Montreal, Canada, August 4-8
- Moussa, S., Kennedy T., Pollegioni L.; Mauzeroll, J. (2018) **Enzymatic Biosensors for Neurochemistry: Biosensor Design Optimization for D-serine Release Measurements from Primary Neuronal Cells**, 18th International Biotechnology Symposium and Exhibition, Palais de Congress, Montreal, Canada, August 12.
- Moussa, S., Ducharme, J. , Auclair, K. , Mauzeroll, J. (2017) **Monitoring H₂O₂ Production from Human Cytochrome P450 3A4**, 7th Electrochemical Society Montreal Student Chapter Symposium, McGill University, Montreal, Quebec, Canada, May 26th.
- Moussa S., Saha N., Vechot L. (2016) **Assessment of Maximum Gas Production Rate of an Untempered System Under Runaway Conditions**, 7th Qatar Process Safety Symposium, Doha, Qatar, April 18.
- Moussa S., Saha N., Vechot L. (2015) **Determination of the Maximum Gas Generation Rate Following the Decomposition of Cumene Hydroperoxide under Runaway Conditions for Pressure Relief Vent Sizing Determination**, AIChE Annual Meeting, Salt Lake City, Utah, USA, November 9.