


# SIBA MOUSSA, PMP

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## 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**, Montreal, Quebec Oct.2021– Present  
*Leading the development of electrochemical technology for point of care testing*

**R&D Scientist, Eli Health**, Montreal, Quebec March – Oct. 2021  
*Leading the development of multiplexed sensing technology for at home hormone testing kits*

**Visiting Scholar, The Protein Factory- University of Insubria**, Varese, Italy April – June 2019  
*Identified and expressed novel enzymes for incorporation into biosensors*

**Reservoir Testing Lab Engineer Intern, Schlumberger PVT Lab**, Saudi Arabia June – Aug. 2016  
*Analyzed oil/gas content in samples from exploration sites using characterization methods*

## Recognized Achievements & Awards

Mitacs Accelerate Fellowship 2021  
T. Sterry Hunt Teaching Award, Clark-SELF Fellowship, MedTech Hackathon (1<sup>st</sup> place) 2020  
Pharmahacks Hackathon (1<sup>st</sup> 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*
- *Trained 50+ scientists on electrochemistry techniques & fundamentals*
- *Initiated and managed 5 projects with local and international collaborators (published 5+ papers in peer-reviewed journals)*

## 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:** Electrochemistry, COMSOL, LC/MS, 3-D Printing, SolidWorks, Spectroscopy, Python, Matlab, Machine Learning, PyMOL, Liquid Handling Robot (Perkin-Elmer), Cell Culture, Enzymes  
**Language:** English (Native), Arabic (Native), French (Intermediate), Italian (Beginner)

## Publications

- 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. **(1<sup>st</sup> 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 H<sub>2</sub>O<sub>2</sub> 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**, 7<sup>th</sup> 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.