

# Mikhail Trought

Email: [matrough@mtu.edu](mailto:matrough@mtu.edu), [mikhailtrought@gmail.com](mailto:mikhailtrought@gmail.com)

LinkedIn: <https://www.linkedin.com/in/mikhail-trought-399058b0/>

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## PERSONAL STATEMENT

I am a 5<sup>th</sup> year PhD candidate, who will be graduating in May 2021. I was born and raised in Jamaica, and I am the second child of a family of four children. My goal in life is to do science that can help unravel environmental reactions that directly affect climate change and/or elucidate reactions that help to mitigate anthropogenic pollution.

## EDUCATION

**PhD. in Chemistry**, Michigan Technological University, Houghton, MI. (Sept. 2016-Present)

Research Advisor: Dr. Kathryn A. Perrine

**BSc. in Chemistry** (Major) / Chinese (Minor), Lawrence University, Appleton, WI. (Sept. 2012-Jun. 2016)

Research Advisor: Dr. Deanna Donohoue

## EXPERIENCE

**Research Assistant**, Michigan Technological University, Houghton, MI. (Sept. 2016 - Present)

- Investigated atomic layer deposition (ALD) of metal oxides on 2D materials using area activation ALD
- Explored functionalization of 2D materials using wet chemical etching methodologies
- Investigated surface reactions in ambient pressure conditions using ambient pressure X-ray photoelectron spectroscopy (AP-XPS)
- Developed an atomic force microscopy (AFM) teaching laboratory for the Physical Chemistry II course.
- Investigated in-situ reactions of metallic surfaces using Liquid AFM
- Implemented various surface characterization techniques in research

## AWARDS

- 1<sup>st</sup> Place Awardee- Poster Presentation (Physical and Computational Chemistry Division), National Organization for the Professional Advancement of Black Chemists and Chemical Engineers (NOBCCHE) Fall Virtual Conference (Sept. 2020)
- The Chemistry Department Graduate Student Leadership Award (Apr. 2020)
- Outstanding Graduate Chemistry Teaching Assistant Award (Mar. 2020)
- Ambassador Award for (Chemistry) Departmental Outreach and Public Relations Activities (Apr. 2019)
- ACS Honorable Mentioned Awardee-Poster Presentation at the ACS Student Upper Peninsula Regional Research Symposium, Marquette, Michigan (Apr. 2018)

## PUBLICATIONS

- **Trought, M.**; Wentworth, I.; Leftwich, T. R.; Perrine, K. A., Effects of Wet Chemical Oxidation on Surface Functionalization and Morphology of Highly Oriented Pyrolytic Graphite. *ChemRxiv. Preprint* **2020**, <https://doi.org/10.26434/chemrxiv.12907604.v1>.
- Degaga, G. D.; **Trought, M.**; Nemsak, S.; Crumlin, E. J.; Seel, M.; Pandey, R.; Perrine, K. A., Investigation of N<sub>2</sub> adsorption on Fe<sub>3</sub>O<sub>4</sub> (001) using ambient pressure X-ray photoelectron spectroscopy and density functional theory. *The Journal of chemical physics* **2020**, 152 (5), 054717.
- Forooshani, P. K.; Polega, E.; Thomson, K.; Akream, M. S.; Pinnaratip, R.; **Trought, M.**; Kendrick, C.; Gao, Y.; Perrine, K. A.; Pan, L., Antibacterial Properties of Mussel-Inspired Polydopamine Coatings Prepared by Simple Two-Step Shaking-Assisted Method. *Frontiers in Chemistry* **2019**, 7, 631.
- **Trought, M.**; Wentworth, I.; de Alwis, C.; Leftwich, T. R.; Perrine, K. A., Influence of surface etching and oxidation on the morphological growth of Al<sub>2</sub>O<sub>3</sub> by ALD. *Surface. Science.* **2019**, 121479.