



## SUMMARY OF QUALIFICATIONS

- Over 1,000 hours of laboratory experience cultivated through nanoparticle synthesis, fabrication of OLED devices, and nanoparticle/materials characterization
- Project-oriented experience in MATLAB, Python, JavaScript, C++, Excel, SolidWorks, ANSYS
- Lab equipment: UV-Vis spectrometer, centrifuge, oscilloscope, function generator, DMM
- Characterization methods: UV-Vis, TEM, DSC, TGA, AFM, profilometry, tensile and impact testing, electronic testing



## EXPERIENCE

### Research Assistant – Nanomedicine | Frank Gu Research Group - University of Toronto

JANUARY 2020 – PRESENT

- Optimized solution-based synthesis method for producing highly uniform nanoparticles of versatile compositions & morphologies within minutes
- Developed novel formulations for nanoparticles with characteristics undescribed in literature
- Characterized particle size & distribution (via TEM) to evaluate synthesis method, and evaluated resulting data to efficiently plan future experiments

### Process Engineer | OTI Lumionics

MAY 2019 – AUGUST 2019

- Increased production throughput of OLED devices by 400% through analyzing test data to optimize OLED process line variables such as vacuum level of deposition chambers, rate, and temperature of material
- Led team of 4 engineers to perform optical film characterization, electroluminescence, photoluminescence, lifetime, and defect testing on over 4000 OLED devices
- 300+ hours of cleanroom experience testing process line and maintaining vacuum chambers, QCMs, deposition sources, deposition masks, and other vacuum technology

### Research Assistant | Functional Nanomaterials Group, Nano and Micro Systems Lab

DECEMBER 2018 – PRESENT

- Fabricated perovskite solar cells, improved fabrication efficiency through engineering an etching mechanism for FTO and ITO using SolidWorks and 3D printing
- Investigated effects of edge contacts on graphene contact resistance for Pd and Ni



## PROJECTS

### Micro-Assembly YBCO Apparatus | Waterloo Nanorobotics Group

- Developed actuation system based on flux pinning between a magnetic microbot and a YBCO superconductor to actuate a microgripper with the potential to manipulate microscale objects

### Mars Airlock | Waterloo Airlock Design Team

- Led the design of an award winning self-sustainable airlock system for Mars colonization using SolidWorks and ANSYS, wrote comprehensive 100-page engineering proposal on its development with the team



## EDUCATION

### Candidate for BAsC in Nanotechnology Engineering | University of Waterloo

SEPTEMBER 2018 – APRIL 2023