# RAJ ZALA

647-527-8623
raj.zala@uwaterloo.ca
/in/raj-zala
rajzala.me

## SUMMARY OF QUALIFICATIONS

- Over 500 hours of laboratory experience cultivated through materials characterization, fabrication of OLED devices and perovskite solar cells
- Project-oriented experience in MATLAB, Python, JavaScript, C++, Excel, SolidWorks, ANSYS
- Analytical skills developed by using experimental data to identify OLED performance trends
- Proficient in vacuum deposition, AFM, DSC, TGA, tensile and impact testing, profilometry, electronic testing

## EXPERIENCE

### 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
- 250+ 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
- Performed extensive scientific literature review to write a review paper on plasmonic biosensors

### Materials and Research Team - Project Lead | UW Nanorobotics Group

SEPTEMBER 2018 – AUGUST 2019

- Developed flux pinning system to actuate a microgripper using superconductor material YBCO, with potential to grip and manipulate microscale objects for biological applications
- Designed and executed experiments to characterize flux pinning force of superconductor on a magnet

## PROJECTS

### Mars Airlock | Waterloo Airlock Design Team

- Designed a self-sustainable airlock system for Mars colonization using SolidWorks and ANSYS, wrote comprehensive 100-page engineering proposal on its development in collaboration with team

### Materials Characterization | AFM, DSC, TGA, Tensile and Impact Testing

- Characterized LDPE and HDPE compounded with different nanofillers using various characterization techniques to compare effects of fillers on mechanical and thermal properties

## EDUCATION

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

SEPTEMBER 2018 – APRIL 2023