RAJ ZALA

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SUMMARY OF QUALIFICATIONS

- Over 400 hours of laboratory experience cultivated through materials characterization, fabrication of OLED devices and perovskite solar cells
- Project-oriented experience in MATLAB, Python, JavaScript, 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

EXPERIENCE

Process Engineer | OTI Lumionics

MAY 2019 – AUGUST 2019

- Produced Organic LEDs (OLEDs) with high performance through controlling production conditions
- Increased production throughput by 400% through optimizing OLED process line variables such as vacuum level of deposition chambers, rate, temperature, and concentration of material
- 250+ hours of cleanroom experience testing process line and maintaining vacuum chambers, QCMs, deposition sources, deposition masks, and other vacuum technology
- Led team of 4 engineers to perform luminance, degradation, and defect testing on over 4000 OLED devices

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

DECEMBER 2018 – PRESENT

- Improved perovskite solar cell fabrication efficiency through engineering an etching mechanism for FTO and ITO using SolidWorks and 3D printing
- Performed extensive scientific literature review to write a review paper on plasmonic biosensors
- Investigated effects of edge contact resistivity on graphene contact resistance for Pd and Ni

Mechanical Team - Project Lead | Waterloo Airlock Design Team

SEPTEMBER 2018 – AUGUST 2019

- Designed a hatch system to connect airlock to the atmosphere of Mars using SolidWorks and ANSYS
- Wrote comprehensive 100-page engineering proposal on the development of self-sustainable airlock system for Mars colonization to University of British Columbia in collaboration with team

PROJECTS

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

Gelatin and Starch-Based Bioplastics | Materials Testing

- Created bioplastics and conducted tensile and impact testing to investigate effects of various chemical compositions on mechanical properties

EDUCATION

Candidate for BASc in Nanotechnology Engineering | University of Waterloo

SEPTEMBER 2018 – APRIL 2023