Jeff Farnese

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Education

M.A.Sc. in Mechanical Engineering — *University of Waterloo* — Waterloo, ON
2018-07 – Present

B.A.Sc. in Mechanical Engineering (Thermofluids) — *University of British Columbia* — Vancouver, BC
Graduated 2018

Diploma of Technology, Plastics Engineering — *British Columbia Institute of Technology* — Burnaby, BC
Graduated 2008

Skills and Qualifications

- SolidWorks / Autodesk Inventor
- SolidWorks Flow Simulation
- ANSYS Fluent / Comsol Multiphysics
- MATLAB / Simscape Multibody
- 2D drawing development
- 3D model and assembly development
- Microsoft Office
- Sheet-plastics fabrication
- Metal machining (milling & turning)
- 3-axis CNC mill and water jet operation

Employment History

Undergraduate Researcher — *UBC Aerosol Lab* — Vancouver, BC
2016-05 – 2017-04

- The main project was to develop a transportable control box that could monitor temperatures of exhaust gas for a new particle measurement device being developed for gas emissions testing.
- Constructed a prototype laser diode driver circuit on a breadboard and carried out an analysis of components to optimize voltage and current regulation using an oscilloscope.
- The enclosure was designed to easily connect multiple thermocouples and BNC connectors to send a receive signals for process monitoring control using LABView.
- A comprehensive user manual was written to give users the proper background to operate the device safely and effectively.
- Developed a thermophoretic sensor for extreme outdoor emissions detection with the intention to be mounted on a drone for aerial sensing of flare gas emissions.

Medical Device Technologist — *Evasc Medical Systems Corp.* — Vancouver, BC
2011-12 – 2013-08

- Worked under an ISO 13485 quality system for the development of neurovascular implants made from the memory metal nitinol.
- Manufactured stents and components using a salt bath, electro-polisher and micro-blasting lathe.
- Designed jigs using SolidWorks 2013 for heat treating shape memory alloys (nitinol), and test equipment.
- Performed chromic-acid cleaning procedures in a fume-hood, wearing a Tychem suit and respirator.
- Worked in a class 10,000 clean room inspecting stent delivery systems.
- Performed clinical qualification test procedures.
- Wrote test reports, manuals, and quality procedures for clinical qualification submissions.
- Developed and performed incoming receiving inspections of outsourced components.

Product Designer *PlasticWorks Ltd.* Surrey, BC
2010-04 – 2011-11

- Fabricated custom acrylic projects such as fume hoods, display cases and brochure holders using solvent welding techniques.
- Fabricated various plastics materials with the use of routers, panel saws, and table saws.
- Operated a three axis CNC machine to router custom designed products.
- Advised customers in material selection; the most prominent families of materials being acrylics(PMMA), polycarbonates, ABS, PVC, and polyethylenes.

Production Supervisor *Precision Injection Molding Inc.* Langley, BC
2008-06 – 2009-08

- Managed a team of three fulltime assembly workers and two assistants.
- Managed inventory of incoming and outgoing molds and determined functionality status.
- Lead the team to achieve minimal machine downtime and a reject rate of less than 5% at all times as per company policies.
- Troubleshot problems in the molding process and assured a low defective rate of 5% or less was maintained.
- Utilized Statistical Process Control to monitor medical device tolerances using control charts.

Awards

Undergraduate Student Research Award
Natural Sciences and Engineering Council of Canada (NSERC)
2016-05

Organizations

Thermal Systems Team Lead *UBC Formula Electric* Vancouver, BC
2016-09 – 2017-08

- Developing mathematical models to determine heat dissipation effectiveness of the cooling systems, as well as pressure losses for all components to select an appropriate pump.
- Sourcing appropriate components that will be able to maintain motor and motor controller temperatures during high load operation of the vehicle.
- Used SolidWorks Flow Simulation to determine pressure drops over radiators and custom designed cooling plates.
- Developing test methods to validate simulation results.