Ashley Dodge

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Experience

Desktop Metal, Burlington, MA **Aug 2019 - Present**
Print Process Engineer - Process and Materials Team

- Technical expert for the Desktop Metal Studio System and upstream feedstock manufacturing processes
- Developed and standardized an internal materials validation process to quickly and effectively detect issues in the formulation, printing, and sintering processes. Created comprehensive Excel tracker
- Worked alongside material scientists and process engineers to develop the entire Studio 2 platform, ultimately overseeing material projects from formulation development through commercial launch
- Created and maintained an internal database of material properties able to provide insight into the feasibility of a formulation, and able to detect issues within the rod extrusion or molding process (JMP)
- Created visual process windows using Design of Experiments and JMP to assess viability of material formulations to aid in the rapid development of robust print profiles
- Organized technical meetings to provide feedback and support to the Customer Support team on unique and unprecedented customer cases, created internal FAQ documentation from meeting notes
- Identified and remedied issues in material production significantly reducing cases of nozzle clogging
- Evaluated powder handling processes, identified hardware and process limitations, and worked within a small team to prototype and instrument fixtures which informed final system for new products
- Assessed powder and chemical related safety risks through FMEAs, reviewed with multiple sources

Edwards Vacuum, Clevedon, England **Jan 2018 – June 2018**
Industrial Placement Student

- Prepared and implemented a test plan to determine the effectiveness of nozzle shape in the abatement of NF_3 when mixed with extreme flows of N_2 and composed a technical report detailing findings

Emphysys, Woburn, MA **Jan. 2017 – June 2017**
Mechanical Engineering Co-op

- Conceptualized, designed, and field tested a novel medical device with a focus on patient comfort

Digital Lumens, Boston, MA **Jan 2016 – Aug 2016**
Mechanical Engineering Co-op

- Ran chemical degradation, thermal, and photometric tests on light fixtures to optimize performance

Education

Northeastern University – Boston, MA **Sept 2014 - May 2019**
Bachelor of Science in Mechanical Engineering, Minor in Mathematics

Capstone **July 2018 – Dec 2018**
Pure Aramid Fiber 3D Printing by Chemical Dissolution, Boston, MA
Undergraduate Mechanical Engineering Capstone Project

- Designed, machined, and tested a water and acid proof solvent application subsystem featuring customizable fiber dissolution parameters with an emphasis on chemical safety
- Led the material science and process investigation behind the project, performed material and chemical tests on polymer fibers to gather information on material properties and process parameters

Technical Skills

Computer: JMP, MATLAB, Solidworks, Onshape, Microsoft Office
Fabrication: 3D printing (Plastic FDM, Metal FDM, Binder Jet), Machining (manual mill and lathe, general cutting tools), basic CNC programming, basic electromechanical system design and data collection
Other Notable Skills: Benchtop SEM, Design of Experiments, Six Sigma Yellow Belt

Background and Interests

- Enjoys backpacking, camping, hiking, rock climbing, skiing, snowshoeing, and being outside