

Jonathan Gorman

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Education

Drexel University, Philadelphia, PA

M.S. in Mechanical Engineering, In Progress
GPA – 3.85

Penn State University, State College, PA

B.S. in Mechanical Engineering, December 2009
GPA – 3.18, Dean's List - Fall 2005, Spring 2006, Fall 2009

Research Interests

Finite Element Analysis
Design Optimization
Machine Learning
Metamaterials
Process Engineering

Research & Work Experience

Graduate Student Researcher

6/2020 – Present

MCMB Lab, Drexel University

- Perform analysis and topology optimization of microvascular active cooling channel networks using a transient Interface-Enriched Generalized Finite Element Method (IGFEM) code.
- Adapted existing steady state Finite Element Method research code to support transient thermal analysis using MATLAB/C++ and validated with Ansys Fluent.
- Collaborating on a joint project with North Carolina State University for design optimization of Metal Microvascular structures.
- In Progress: paper on design optimization of a microvascular cooling network using transient analysis
- Contribute to group project discussion and provide weekly progress updates

Mechanical Process Engineer

1/2015 – 9/2021

Penn Color, 2801 Richmond Rd, Hatfield, PA, 19440

- Coordinate and design pilot production trials used to optimize processing conditions for full scale production
- Orchestrate manufacturing equipment trials at vendor sites to qualify capital investments
- Design aftermarket equipment components using AutoCAD and AutoDesk Inventor and supported machine shop on finished part specifications and fabrication
- Execute product quality control tests including viscosity, particle size analysis, color properties analysis, and optical microscopy analysis
- Create and maintain Statistical Process Control charts for manufacturing operations to ensure product quality and consistency

- Assess and analyze the life-cycle of equipment components to determine optimum change out times and maximize production process efficiency
- Coordinated process instrumentation calibrations to ensure manufacturing facility ISO compliance
- Developed and maintained Piping and Instrumentation Diagrams (P&ID) for the installation of particle size reduction and dispersion equipment

Process Engineer of Molded Engineering Plastics

6/2011 – 1/2015

Polymics, Ltd., 2215 High Tech Road, State College, PA 16801

- Developed and implemented processing conditions and procedures for the manufacture of high temperature engineering plastics including PEEK, PPS, PEI, PI, PBI, and Carbon Fiber Composites
- Responsible for training engineers and validating process equipment at the launch of a new manufacturing facility in WuXi, China
- Designed mold components using Solidworks for use in high temperature processing environments
- Provided technical support and troubleshooting for manufacturing equipment including hydraulic systems, 3-phase heaters, and temperature control systems
- Managed the supply chain of the Compression Molded Stock Shapes Manufacturing Unit resulting in successful and consistent product delivery lead times
- Communicated with Quality Control Department to create solutions to non-conformities within manufacturing processes
- Managed a team of 10 production technicians