JOHN BYRNE

johnconb4@gmail.com | (203) 252-9529

LinkedIn: linkedin.com/in/jbyrne98

Portfolio: johncbyrne.com

SUMMARY

Innovative mechanical engineer with a strong foundation in first principles analysis, design optimization, and prototyping. Experienced in creating cutting edge solutions at industry leaders such as Bose Corporation and Electric Hydrogen. Proficient in Computational Fluid Dynamics, Thermal Analysis, and CAD modeling, with a passion for bringing concepts into reality. Eager to leverage technical expertise and creativity in a collaborative, forward thinking environment.

TECHNICAL SKILLS

- CAD Design (Onshape, Solidworks CSWP)
- Programming (Python, MATLAB)
- Product Development (DVP&R, DFMEA, DFM)
- Simulation (COMSOL, Ansys, Simscale)
- Design of Experiments & Data Analysis (JMP, Excel)
- Process Development (Lean Six Sigma Yellow Belt)

PROFESSIONAL WORK EXPERIENCE

Electric Hydrogen, Natick, MA — June 2022 - Present

Electrolyzer Stack Engineer

- Primary design ownership of flow distribution manifold for electrolyzer reactants, bringing components from concept phase to product-ready maturity
- Developed custom Python model with greater than 90% experimental accuracy to predict two phase flow pressure drop of product over planned operational envelope
- Lead engineer of several first principle driven numerical modeling efforts ranging from CFD to optimization of electrochemical cell efficiency
- Mentored junior mechanical engineers on R&D design projects, providing technical guidance, fostering skill development, and ensuring successful project execution
- Led several process development efforts leading to successful in-house vertical integration of key product components to de-risk supply chain setbacks
- Lead engineer of several key R&D design efforts resulting in successful acquisition of patents to protect company IP
- Participated in cross functional detailed design and requirement reviews, ensuring seamless integration of electrolyzer into greater balance of hydrogen plant
- Produced intricate CAD models and engineering drawings utilizing GD&T best practices and oversaw implementation of quality control workflows to ensure component conformance

Jetcool Technologies, Littleton, MA — Jan 2021 - May-2021

Mechanical Engineering R&D Intern

- Designed and prototyped custom cooling modules utilizing 3D printing and developed Python-based design optimization calculator to augment rapid prototyping efficiency of cooling modules
- Performed thermal analysis on microjet cooling modules dealing with both forced and natural convection

Bose Corporation, Framingham, MA — Jan 2019 - June 2019

Reliability Engineering Intern

- Created Arduino based automated reliability testing fixture allowing for unattended reliability testing
- Developed web app to track subcontractor performance earning Lean Six Sigma Yellow Belt Certification

EDUCATION

Northeastern University, Boston, MA — May 2022

Master of Science in Mechatronics Engineering • Bachelor of Science in Mechanical Engineering