Matthew A. Musselman

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Education

Colorado School of Mines (CSM) – Golden, CO — PhD May 2018
Major: Materials Science

Colorado School of Mines (CSM) – Golden, CO — B.S. May 2014
Major: Engineering Physics — GPA: 3.59
Tau Beta Pi Engineering Honor Society
Society of Physics Students

Experience

NREL (National Renewable Energy Laboratory) — September 2013 – August 2014
Research Assistant, Supervisor: Dr. Scot Waye

- Troubleshoot experimental setup and revise LabVIEW programming to analyze air cooling device for power inverters in vehicle applications. Analyze experimental data and produce reports on device performance.
- Expand and develop the setup to accommodate a variety of cooling devices and capabilities.

REMRSEC (Renewable Energy Materials Research Science and Engineering Center) May 2012 – August 2013
Research Assistant, Advisor: Prof. Corinne Packard

- Identified changes in mechanical properties of lithium ion battery cathodes using nanoindentation, required the development of customized sample preparation techniques
- Synthesis and characterization of battery cathode ceramics for testing of cycled and un-cycled materials and 3-D atom probe reconstruction for lithium intercalation research
- Sample preparation and nickel electroplating on GaAs solar cells for spalling applications
- Presented “Micro-Scale Mechanical Properties of NMC Lithium Ion Battery Cathodes” at the CCAC (Colorado Center for Advanced Ceramics) Conference 2012 and 2013 and at the REMRSEC 2012 REU Conference, in addition to presentations given at the periodic research group meetings.

T.E.A.M. Panels International – Englewood, CO — Feb 2008 – Aug 2011
Pre-Engineered Cold-Formed Steel Truss Design Technician - Structural Engineering

- Managed multiple projects at a time overseeing the truss designs, engineered connections, submittal process, project coordination, product manufacturing, and delivery of the complete roof truss building system
- Produced approval and field use drawings for >30 projects detailing building layouts and sections, connection designs and locations, and often additional custom engineered support systems using AutoCAD

United States Navy — 2002 – 2007
Mineman - Second Class Petty Officer

- Maintenance and Personnel Supervisor, Supply/Acquisition Manager, Search and Rescue Swimmer
- Numerous personal recognitions of achievement, awarded Sailor of the Year - 2006

Strengths / Skills

- **Materials:** Thin film deposition, mechanical property testing, surface characterization, material synthesis, sample preparation, scanning electron microscopy (SEM), nanoindentation
- **Vacuum Science:** Familiarization with vacuum technology; worked with mechanical, cryo-pumps, condensate, and turbo pumps; utilized cold/hot cathode gauges, convection gauges; mass spectrometers
- **Laboratory:** Multiple years of experience in laboratory work environment: safety, HAZMAT, data collection
- **Computer:** Image J, LaTeX, AutoCAD, Mathematica, qtiPlot, Inkscape, Microsoft Office, LabVIEW, Solidworks
- **Electronics:** Analog and digital circuit construction, use of oscilloscopes and function generators for signal analysis
- **Other:** Long history of team and leadership experience, enthusiastic problem solver, well organize