

Erin Balke

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Recent college graduate with a focus on metals seeking an entry level position in materials engineering.

Education

Carnegie Mellon University

May 2016

Bachelor of Science in Materials Science and Engineering

Overall GPA: 2.8 Major GPA: 3.0

Relevant Coursework: Introduction to Computational Materials Science; Electrical and Thermal Properties of Metals, Semiconductors, and Related Devices; Solidification Processing; Selection and Performance of Materials; Processing Design; Graduate Level Diffusion; Phase Transformations in Solids; Metal-Environment Reactions; Mechanical Behavior in Extreme Environments.

Experience

Center for Iron and Steelmaking Research Undergraduate Research Assistant

Summer 2015

- Prepared steel samples for electron microscopy and, using scanning electron microscopy, analyzed the inclusion composition in calcium treated steel.
- Compared two different calcium powders using X-ray diffraction to find the exact compositions and determine the more efficient solution.

CMU Information Technology Services Technology Assistant

Summer 2014

- Responded to technical help requests within the Electrical and Computer Engineering Department. Communicated directly with faculty and staff members and HP technical support to solve problems with printers and computers.

Projects

Optimizing Oxidation Behavior in Steel Rollers, Senior Capstone Project

Fall 2015

- Worked in a team of 5. Tested several grades of steel in cyclic oxidation tests to analyze the oxide growth in order to optimize the oxide layer. Analyzed samples using SEM composition maps to determine oxide growth location. Tested different microstructures to determine if the oxide layer could be changed by structural changes instead of chemistry changes.

Composite Snowboard Design

Spring 2015

- Worked in a virtual team of 5. Designed a theoretical snowboard to meet specified constraints while using environmentally friendly materials. Selected materials for 5 layers of the snowboard, using material data sheets to determine which materials fit the requirements.

Synthesis of Titanomagnetite

Fall 2014

- Synthesized Titanomagnetite using two different compounds. Examined the sample using XRD and SEM composition analysis to determine final composition.

Leadership

Yarnivores Treasurer

2013-2016

- Created and managed budget to purchase supplies for club activities and charity projects.
- Led workshops for a group of 10 college students

Carnegie Tech Radio Club Secretary/Treasurer

2014-2015

- Modified previous budget to better fit the needs of the club.
- Sent weekly emails to members with information about upcoming meetings and events.

Skills

Scanning Electron Microscopy, X-ray diffraction, sample preparation, physical testing following ASTM standards, data analysis, MATLAB.