

# ALEXANDER MILES

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## Objective

To pursue education and research opportunities in the field of optical materials, specifically glasses and ceramics for high-performance optics, solar energy, and remote sensing applications.

## Education

University of Arizona, AZ    Major GPA 3.954/4.0, Overall 3.884/4.0    Graduation - May 2011

*Pursuing a Bachelor of Science, Materials Science Engineering*  
*Pursuing a Bachelor of Science, Optical Sciences and Engineering*

## Professional Experience

SCHOTT AG - Advanced Optics Division - Mainz, Germany    Summer 2011  
Praktikant (Intern) to Dr. Reiter and Dr. Schreder

- Designed battery of test melts and experiments to diagnose negative surface reactions.
- Performed and reviewed German-English translations for technical accuracy and flow.
- Wrote and ran simulations of thermal processing of specific glass types.

Lunar and Planetary Sciences / NASA Space Grant    Academic Year 2009-2010  
Research Assistant and Programmer for Dr. Robert Erdmann

- Deconstructed and rebuilt exiting modeling code to simulate new experiments.
- Visualized large data sets for further analysis.

University of Arizona Materials Science Department    Summer 2009  
Student Research Assistant to Dr. Barrett G. Potter, Jr.

- Run batches of time intensive experiments focused on investigating the effect of various parameters on stress-linked optical phenomenon in KDP crystals.
- Undertook extensive documentation and characterization of experiments and samples.
- Revised existing sample preparation procedure, reducing scatter due to inconsistent surface finish.

University of Arizona Materials Science Department    Summer 2008  
Student Research Assistant to Dr. Pierre Lucas

- Designed and ran experiments to determine ideal parameters for induced photo-relaxation of calcogenide glasses.
- Used results to explore range of photoplastic phenomenon possible within a subset of glasses.
- Trained on and utilized laser systems, surface characterization, and differential scanning calorimetry.

Steward Observatory Imaging Technology Lab    September 2007 - December 2009  
Student Research Assistant

- Trained on myriad machines for routine and experimental tasks.
- Ran batteries of tests on optical coatings for surface roughness and suitability for use on CCDs.
- Planned and undertook research project on bending silicon detectors to a focal plane.
- Wrote programs (Python) to remotely manage optical and computer systems.

## Technical Skills

LabView, CODE V, SolidWorks, Microsoft Office Suite 2010, Adobe Creative Suite CS4, OpenOffice Suite, MATLAB, PHP, MySQL, HTML, CSS, Javascript, Python, SciPy, NumPy, L<sup>A</sup>T<sub>E</sub>X, Drupal 5, Debian Linux, GNU Emacs, . Experienced in chemical and digital photography, glassblowing in both German and Venetian style, web design, and workstation repair.

## Memberships and Honors

NASA Space Grant Recipient  
University of Arizona da Vinci Scholar 2010  
Thomas G. Chapman Scholarship Nominee  
SPIE Member, University of Arizona Chapter  
SCHOTT Advanced Optics Scholarship Recipient  
Material Advantage, University of Arizona Chapter  
Dean's List with Distinction, University of Arizona  
President of Keramos, University of Arizona Chapter  
Presidents Award for Excellence, University of Arizona  
Programming Lead for SEDS Rocketry (Students for the Exploration and Development of Space)

References and additional employment history available upon request.