Yizhou Lu

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Education

• University of Wisconsin-Madison (Doctor of Philosophy in Electric Engineering)
Starting in Jan 2020

• University of Wisconsin-Madison (Master of Science in Materials Science and Engineering)
Jun 2018 - Dec 2019

GPA:
3.821/4.00 (Major: 4.00/4.00)

Courses:

- MS&E 456: Electronic, Optical, and Magnetic Properties of Materials>>A
- MS&E 530: Thermodynamics of Solids>>A
- MS&E 553: Nanomaterials & Nanotechnology>>A
- MS&E 760: Molecular Dynamics and Monte Carlo Simulations in Materials Science>>A
- MS&E 803: Special topics in Materials Science (Advanced X-ray scattering)>>A

• Nanjing University (Bachelor of Science in Geochemistry)
Sep 2013 - Jun 2017

GPA:
84.5/100

Thesis:
Atomic Pair Distribution Function with Indoor X-ray Diffractometer

Courses:

- Linear Algebra (Band One)>>100%
- Calculus I (Band One)>>91%
- Calculus II (Band One)>>85%
- Fluid Mechanics>>90%
- Experimental Physical Chemistry>>90%
- Physical Chemistry>>92%

Research Experiences

• Fluorescence Lifetime Imaging (FLIM) | (2019.6-, UW-Madison)

○ Advisor: Andreas Velten (Professor of Department of Biostatistics and Medical Informatics & Department of Electrical and Computer Engineering, University of Wisconsin-Madison)

○ Set up hardware for outreach projects

○ Capture fluorescence images of mouse brains at Laboratory for Optical and Computational Instruments (LOCI), UW-Madison

○ Design compressive sensing methods in FLIM by digital mirror device and simulate in MATLAB/Python

• Atomic Pair Distribution Function Analysis with Transmission Electron Microscopy | Independent Researcher (2018.7-2018.8, UW-Madison)

○ Advisor: Paul Voyles (Professor of Department of Materials Science and Engineering, University of Wisconsin-Madison)

○ Process the image data of TEM by Igor Pro

○ Improve in the methods of circumventing the noise

○ Code in VBA, C and Igor Pro

• Atomic Pair Distribution Function Analysis by X-Ray Diffractometry | Leader (2015.12-2017.5, Nanjing University)

○ Advisor: Weiqiang Li (Professor of Earth Sciences and Engineering School, Nanjing University) & Wei Li (Professor of Earth Sciences and Engineering School, Nanjing University)

○ Explore the incipient crystallization process of magnesium carbonate ($MgCO_3$)

○ Explore the arrangement of the molecules in liquid water

○ Conduct experiments on RIGAKU DMAX RAPID ii

○ Code in C language

• Sn Isotope fractionation measurement with Laser Ablation | Independent Researcher (2016.9-2016.10, Nanjing University)

○ Advisor: Weiqiang Li (Professor of Earth Sciences and Engineering School, Nanjing University)

○ Test on natural cassiterites

○ Analyze the Sn isotope with MC-ICP-MS

• Experience with EXAFS in the synchrotron lab (2016.10, Beijing Synchrotron Radiation Facility, BSRF & 2017.7, Shanghai Synchrotron Radiation Facility, SSRF)

Publications

- Authored, as the fourth author, a paper titled "Resetting of Mg isotopes between calcite and dolomite during burial metamorphism: Outlook of Mg isotopes as geothermometer and seawater proxy", published on "Geochimica et Cosmochimica Acta". (Mar. 2017)

Certificates

- Data Science: Deep Learning in Python (ude.my/UC-GD4J5IKO)
- Laser safety training (UW-Madison)
- X-ray instruments (UW-Madison)

Scholarships

- Renmin Scholarship, Nov. 2014- Nov. 2016.

Summer Study Experiences

- The University of British Columbia, Vancouver, Canada, July-August 2016
- Courses and Grades: a. "The Size of Things">>87% b. "Symmetry">>88%

Highlighted Skills

• Software & technical skills

- Python / MATLAB / LaTeX / Visual Basic Application / Machine Learning / Neural Networks / PyTorch / C programing / Julia programing / Mathematica / CorelDraw / Vesta / Crystal Maker / Origin / PDFgui & PDFgetX2 / Igor Pro / MDI Jade / PhreeqC / ArcGIS

• Lab skills

- Optics / X-ray diffraction analysis / MC-ICP-MS / Data processing / Calculation and formula derivation / Error analysis and correction / Model construction / Molecular Dynamics & Monte Carlo simulation / Thermodynamics & kinetics simulation

Interests

- Sketching, painting, music, soccer, canoeing, hiking, photography, movies, biking