

Composite R&D Intern Composite R&D Intern Composite R&D Intern Johnston, RI
Achievement-driven and results-oriented graduate student pursuing endeavors in R&D and/or product development settings. I will be available to work starting in February 2017. Work Experience
Composite R&D Intern Masonite Innovation Center - West Chicago, IL June 2016 to August 2016
Developed an environmentally friendly medium density fiberboard by improving resin formulation. Hazardous chemicals in the previous formulation were partially replaced with naturally occurred materials and nanoparticles. Characterized nanoparticle composite material using JEOL 6060 LV SEM and DMA Q800. Achieved 30% improvement in fiberboards' tensile strength using readily available low cost materials. Presented findings and suggestions to research center leaders and scientists. Wrote two technical reports. Transmission Electron Microscope (TEM) operator, programmer Pinshane Huang Research Lab, UIUC - Urbana, IL November 2015 to May 2016
Researched on simulation and processing methods for picometer-resolution imaging of single atoms. Developed algorithms for TEM image processing, which includes particle picking and strain field calculation. Able to determine atomic displacement field with an accuracy of 5 picometer. Trained on transmission electron microscope. Acquired images of ligands that are grown on nanoparticle surfaces. Conducted literature reviews on image processing technologies, and presented findings on large group meetings. Chemist Jianjun Cheng Research Group, UIUC - Urbana, IL August 2015 to November 2015 Synthesized, formulated and characterized tri-phase shape-memory polymers. Improved machinability and mechanical strength of hindered polyurea material. Tensile strength increased by 200%. Wrote reports and conducted presentations on potential commercial value of the materials. Medical device developer Robert S. Langer Lab, MIT - Cambridge, MA August 2014 to April 2015 Designed and developed a gastric retention device for extended (>30 days) drug delivery in human gastric system. The device has the capability of achieving triggerable exit in case of emergency/allergy/accidental ingestion. Practiced polymer synthesis, composite designing, and characterizations, ISO standard testing, CAD design and 3D printing. Wrote and defended master's thesis: Materials for Triggerable Shape Memory Gastric Devices. The design is filled in a US patent (M0925.70459US01), co-invented with Professor

Robert S. Langer. Conducted monthly presentation to the group. Prepared slides for lab meeting with Bill & Melinda Gates Foundation. Marketing intern Golden Arrow Overseas Consultancy - Dalian, CN June 2014 to August 2014 Analyzed regional overseas education market. Wrote and edited several articles for the company's website. Materials analyst Characterizing Super Alloy Turbine Blade March 2014 to May 2014 Characterized the substrate and thermal barrier coating of a commercial jet engine turbine blade. Analyzed micro-structures and compositions of the super alloy substrate, bonding layer and ceramic thermal barrier coating using X-Ray Diffraction, Scanning Electron Microscope and Energy Dispersive X-ray spectroscopy. Designing Joints in Technological Superconductors for Magnet Application Fall 2013 Reviewed current technologies for superconducting wire joints applied in production of Magnetic Resonance Imaging. Assessed feasibility of utilizing MgB₂, which is a high temperature super conductor, to replace the current NbTi wires used in MRI. Proposed and evaluated spark sintering joining method for MgB₂ wires. Python programmer, summer intern Interdisciplinary Centre for Advanced Materials Simulation - Bochum July 2013 to September 2013 Simulated ferrite-cementite interface based on density functional theorem using Python language. Calculated optimum crystal orientations of atoms on ferrite-cementite interface. Customer management assistant China Construction Bank - Dalian, CN June 2012 to October 2012 Filed documents for various companies. Assisted customer manager in her meeting with customer. MASTER'S DEGREE THESIS Materials for Triggerable Shape Memory Gastric Devices. Supervisors: Prof. Marina Galano (Oxford), Prof. Robert S. Langer (MIT), Dr. Giovanni Traverso (Harvard Medical School). PATENT Triggerable shape memory induction device, M0925.70459US01 15/143.230, Shiyi Zhang, Yida Zhao, Robert S. Langer, Giovanni Traverso. Chemist, summer intern Department of Advanced Materials, Peking University - ??? July 2012 to August 2012 Synthesized and characterized mono-dispersed iron-oxide nanoparticles. Characterized iron-oxide nanoparticles using Transmission Electron Microscope. UNIVERSITY PROJECTS Teaching assistant JE Education Ltd - Singapore January 2011 to August 2011 Tutored secondary school chemistry, mathematics and physics. Prepared and edited lecture materials and set up examination papers. Education Master of Science in Materials Science and

Engineering University of Illinois at Urbana-Champaign - Urbana, IL August 2015 to December 2016
master's in Sustainability Engineering Massachusetts Institute of Technology, MIT - Cambridge, MA
2014 to 2015 Bachelor University of Oxford - Oxford 2011 to 2015 Links
<http://www.linkedin.com/in/yidazhao> Additional Information SKILLS Experimental: Transmission
Electron Microscopy, Differential Scanning Calorimetry, X-ray diffraction, Scanning Electron
Microscopy, Dynamic Mechanical Analysis, polymer synthesis, cell culturing, and device prototyping.
Hands-on experience in materials processing, characterization, and product manufacturing.
Software: SolidWorks, AutoCAD, 3D printing, Matlab, Python, Microsoft Office.

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