

# KUAN CHENG

kuan@mit.edu  
334.707.2630

*Term Address:*

500 Memorial Dr Rm 236  
Cambridge, MA 02139

*Permanent Address:*

2495 Gunston Ct  
Auburn, AL 36832

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**Education** **Massachusetts Institute of Technology**, Cambridge, MA

- ♦ Bachelor of Science Degree in Mechanical Engineering- GPA 4.8/5.0 *Sept '08-June 2012*

**Experience** **Design and Construction of Flexure-Based Milling Machine**, Cambridge, MA

*Undergraduate Researcher at the Massachusetts Institute of Technology* *June 2009-Present*

- ♦ Developing a novel flexure based milling machine, focusing on actuation of the z-axis
- ♦ Design decisions based on finite element analysis conducted in COSMOSWorks
- ♦ Prototyping and construction done with 3D printing, milling, and waterjet cutting technologies
- ♦ Creating and writing a curriculum that will be given to and used with all future mechanical engineering sophomores at MIT, detailing the process

**Characterization of Digital 3D Printed Materials**, Cambridge, MA

*Undergraduate Researcher at the Massachusetts Institute of Technology* *Feb-May 2009*

- ♦ Printed and tested 21 types of digital materials to determine mechanical properties, expanding understanding of these materials in order to improve prototyping efficiency

**Metal-Substituted Polyoxometalates in Fuel Cell Catalysis**, Cambridge, MA

*Student Researcher at Auburn University* *May-Aug 2009*

- ♦ Synthesized and characterized novel polyoxometalates to study their effectiveness in fuel cell catalysis, based on oxidation-reduction properties, while working in a team of four researchers
- ♦ Wrote 27 page report on research background, theoretical principles, techniques, and results

**Leadership** **Society of Women Engineers**, Cambridge, MA

*MIT SWE Career Development Co-Chair* *Feb 2009-Present*

- ♦ Planning and running professional development and networking opportunity events, such as Meet the Professionals Dinner, Energy Panel, and Professional Etiquette Seminar, which are sponsored by MIT SWE but open to the entire MIT student body

*Region Collegiate Newsletter Editor* *Jul 2009-Present*

- ♦ Writing and maintaining the SWE Region F Blog, [regionf.wordpress.com](http://regionf.wordpress.com), with information and advice relevant to the New England SWE sections
- ♦ Working with the Region Collegiate Representative to promote SWE in New England sections and insure communication between individual SWE sections and SWE at the national level

**Science Olympiad**, Auburn, AL

*Competitor and Student Coach* *Sep '02-May 2008*

- ♦ Won national level medals in literature search techniques and mechanical device design and construction events, as well as 9 state and 20 regional medals in various other events
- ♦ Coached middle and high school students in these events

**BEST Robotics**, Auburn, AL

*Robotics Team Member and Oral Presentation Team Captain* *Sep '04-Dec 2007*

- ♦ Worked with team of 30 students to design and build a remote-controlled robot.
- ♦ Developed oral presentation and visual aids to present and market robot to a judges panel of professors and industry leaders- won second at highest level of competition

**Skills** **Languages:** fluent in speaking Mandarin Chinese

**Laboratory:** FTIR spectroscopy, X-ray diffraction, cyclic voltammetry, literature searches

**Software:** Solidworks, COSMOSWorks, HSMWorks, OMAX Waterjet Softwares,  
Objet Connex500 3D Printer, Simulink (MATLAB), ControlDesk

**Machine Shop:** water jet cutter, mill and lathe (manual and CNC), Dremel rotary tool,  
saws (table, hack, jig, and band), sanders, and drills

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