

# SHELLEY CHANG

115 Francisco Dr. South San Francisco, CA 94080

(408) 548-7365; shelchang@gmail.com

## Education

- **California Institute of Technology**—Pasadena, CA September 2003–June 2007  
*Bachelor of Science in Chemistry/Biochemistry; GPA 3.2/4.0*
- **University College London**—London, UK September 2006–December 2006  
*Undergraduate affiliate student, Department of Chemistry*

## Experience - Technical

- **Patheon Pharmaceuticals**—South San Francisco, CA November 2011–Present  
*Research Chemist*
  - Performed physical drug substance characterizations using techniques such as DSC, TGA, IR spectroscopy, X-ray diffraction and polarized light microscopy
  - Identified and characterized polymorphs of active pharmaceutical ingredients
- **Bay Materials**—Menlo Park, CA August 2010–August 2011  
*Associate Chemist*
  - Prepared samples using polymer compounding and/or extrusion
  - Developed experimental methods and procedures for non-routine tests
  - Used DOE to assess and improve scale-up processes
  - Maintained lab notebook for organization and analysis of experimental data
  - Did support work for small scale manufacturing runs
  - Ran QC tests and material analyses on Instron, DMA, TGA, and DSC machines
- **Delsen Testing Laboratories, Inc.**—Glendale, CA July 2007–June 2009  
*Lab Technician*
  - Analyzed and organized experimental data in written reports for clients
  - Wrote internal documentation for calibration and test procedures for newly acquired instruments
  - Performed thermal analysis on polymer and composite materials per ASTM specifications
  - Calibrated, maintained and ran tests on DMA, TGA, DSC and TMA machines using TA Instruments Q Series machines and analysis software
  - Determined fiber, resin and void content of composites according to ASTM D3171
- **Honeywell Aerospace**—Torrance, CA June 2005–September 2005  
*Materials and Process Engineering Intern*
  - Researched and developed paint, coating and solvent formulas compliant with new VOC regulations
  - Performed corrosion testing on metal fastening assemblies

## Experience - Other

- **Advantage Testing of Silicon Valley**—Palo Alto, CA November 2009–present  
*Academic tutor*
  - Standardized test and academic tutoring in chemistry and biology for high school and college students
- **World Cube Association**—USA Representative 2004–present  
*Tournament official*
  - Organized and directed over 40 official tournaments, including the annual US National Rubik's Cube Championships
  - Ensured adherence to World Cube Association procedures and regulations at tournaments as official delegate
  - Created a tool using PHP/MySQL to handle competitor registrations in an online database, used in the organization of the US National Championships annually since 2008, as well as smaller tournaments in California, Colorado and Utah
  - Competed in over 60 tournaments in the USA and Europe. Currently recognized as the world's fastest female blindfold Rubik's cube solver (74.93 seconds)

## Relevant Skills

- **Systems and Tools:**

- Programming languages: Python, C, Scheme
- Web Technologies: HTML, CSS, Javascript, PHP, MySQL
- Microsoft Office applications: Word, Excel, PowerPoint
- Operating systems: Linux, Windows
- Other: Mathematica, L<sup>A</sup>T<sub>E</sub>X

- **Laboratory techniques:**

- Thermal analysis using DSC, TGA, TMA, DMA
- Polarized light microscopy
- Powder X-ray Diffraction
- Instron mechanical testing
- NMR, FTIR, UV-Vis spectroscopy
- Gas chromatography
- Transmission electron microscopy
- Solid phase peptide synthesis
- Organic and inorganic synthesis

## Publications

- *Processing of Ultra-Low K Xerogel Composite Films*, B.P. Gorman, Shelley Chang, D.W. Mueller, R.F. Reidy, Advanced Metallization Conference, ed. B.M. Melnick, T.S. Cale, S. Zaima, T. Ohta, p. 602-607 (2002).
- *Effects Of Supercritical Processing On Ultra Low-K Films*, R.F. Reidy, B.P. Gorman, R.A. Orozco-Teran, Zhengping Zhang, Shelley Chang, D.W. Mueller, Advanced Metallization Conference, ed. B.M. Melnick, T.S. Cale, S. Zaima, T. Ohta, p. 607-612 (2002).