**Curriculum Vitae SHIKHA MANCHANDA**

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**SUMMARY**

Seven years extensive experience teaching General, Anlaytical and Organic chemistry based lecture, laboratory and collaborative learning recitation classes at ASU Tempe campus, ASU polytechnic campus and Community colleges with a diverse curriculum and population. Experience in designing the content, experiments and activities dedicated towards an effective learning environment.

Strong theoretical background in chemistry with fundamental scientific research experience and analytical instrumentation expertise along with superior organizational, mentoring and communication skills.

**EDUCATION**

* Jan 2010 – May 2012 **Arizona State University, Tempe, AZ**

MS Chemistry. Coursework included Biological Chemistry, Bioanalytical Microfluidics, Chemical Sensors and Separation Science with in-depth theoretical knowledge and practical experience of GC, GC-MS and HPLC.

**MS research project** focused on the Electro-osmotic flow measurements and fluorescence microscopy imaging to study the effectiveness of co-polymer coating onto the polydimethyl silioxane surface to reduce protein adsorption. Silicon wafer were used to fabricate the microfluidic channels on PDMS surface using photolithography under clean room environment. The project involved routine use of fluorescence microscopy, EOF measurements, conductivity and pH measurements, UV-Vis spectroscopy, IR analysis, plasma treatment, autoclave and other analytical tools.

* Publication : Viefhues, M.; **Manchanda, S.;** Chao, T.-C.; Anselmetti, D.; Regtmeier, J.; Ros, A. *Physisorbed surface coatings for poly(dimethylsiloxane)and quartz microfluidic devices,* **Anal Bioanal Chem (2011), 401, 2113-2122**
* July 2007 – June 2008 **Uttarakhand Technical University, India**

**Computer applications** coursework included Linux, UNIX, Java, C, C++ and Data base management.

* July 2003 – June 2006 **University of Delhi, Delhi, India**

**BSc (H) Chemistry**. Rigorous lecture courses in advanced organic, inorganic and physical chemistry with hands-on laboratory experience.

# INSTRUMENTATION AND RELATED SKILLS:

1. Electro-osmotic flow measurement in microfluidic channels under varying pH and ionic strength
2. Spectroscopy: Fluorescence microscopy, UV-Vis., IR
3. Separation Techniques: GC, GC-MS, HPLC
4. Photolithography: to fabricate channels on PDMS surface 5. Clean room working experience
5. Experience working with surface coating agents, co-polymers and proteins
6. DLS particle sizing, Wet chemistry, Gravimetric analysis, Vitamin assay, Enzymatic dietary fiber, Heavy metal and trace element analysis
7. Computer skills: Adobe Illustrator, AutoCAD, Photoshop, Scrubber, Chem. Draw, Origin, Microsoft Office.

**WORK EXPERIENCE**

* + Aug 2013 – Present **Instructor, Arizona State University, Tempe**

Teaching general chemistry recitation and laboratory courses and analytical chemistry lecture course. Grading recitation activity and lecture quizzes. Monitoring administrative duties and training new faculties.

* + Aug 2012 – Aug 2013 **Adjunct Faculty, Glendale Community College**

Teaching general chemistry lecture and laboratory courses CHM 130 LL, CHM 151 and CHM 151 LL at Glendale and Paradise valley community colleges under Maricopa district.

* + Mar 2013 – Aug 2013 Analytical Chemist, Marlyn Nutraceuticals, Phoenix

Gained extensive hands-on experience with various analytical tools and techniques in an industrial cGMP manufacturing unit including HPLC, GC, ICP, DLS particle sizing, wet chemistry, gravimetric analysis, vitamin analysis, heavy metal and trace elements analysis, enzymatic dietary fiber analysis etc.

* + Jan 2013 – May 2013 **Adjunct Professor, DeVry University, Phoenix**

Taught General and Organic chemistry lecture and laboratory courses designed for the nursing students. Redesigned the lecture and laboratory experiments to suit the specific needs of nursing students.

* + Jan 2013 – May 2013 **Adjunct Faculty, Grand Canyon University**
  + Aug 2012 – Dec 2012 **Faculty Associate, ASU Polytechnic, Mesa**
  + Jan 2010 – May 2012 **Graduate Teaching Assistant, ASU, Tempe**

Volunteered to work towards the development of new online interactive recitation activities that are being used by almost 5,000 students per year.

Three years of extensive general chemistry laboratory and recitation teaching experience at ASU with excellent student reviews.

* + Jan 2010 – May 2012 Research Assistant, ASU, Tempe AZ

Worked under the guidance of Dr. Alexandra Ros (Asst. Professor, ASU) towards my MS research thesis “***Surface Modification of Polydimethyl Siloxane Using Polyethylene Oxide Copolymers****”.*

ADDITIONAL INFORMATION

* + Volunteered to work as a research-worker from Jan 2009-Dec 2009 in Chemistry Dept. ASU.
  + Trained incoming graduate and undergraduate students over the instrumentation and research techniques.