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✉ shreya.chem@gmail.com | [in http://linkd.in/shreyamukherjee](http://linkd.in/shreyamukherjee)

Note: Currently resides in Boston, Massachusetts and open to domestic relocation.

Shreya
mukherjee

DILIGENT • DYNAMIC • INNOVATIVE

VERSATILE RESULT-ORIENTED SYNTHETIC CHEMIST

Highlights

- Strong research background in inorganic, material and organic synthesis.
- Excellent experiment designing, method development, data analysis and interpretation skills.
- Proficient in product screening, purification and characterization.
- Synthesized a library of manganese probes with tunable redox properties for non-invasive imaging of tumors.
- Developed synthetic protocol to isolate nanoscale magnetic materials and biomimetic synthetic models.
- Key contributor in multidisciplinary research projects leading to collaborative research publications.
- 10 publications in peer reviewed journals along with 5 presentations in national and regional conferences.

Technical Skills

- Compound characterization: NMR, FTIR, TGA, UV-Vis, Electrochemistry, Magnetochemistry, XRD and TEM.
- Analytical techniques: LC-MS, HPLC, GC and ICP-MS.
- Software: SigmaPlot, Origin, Igor, ACD, Diamond, Osirix, CCD, SciFinder, Scopus, EndNote and MS-Office.
- Maintenance and troubleshooting: SQUID magnetometer, Potentiostat, Parr hydrogenator.

Core Competencies

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|------------------------------------|--------------------------|------------------------|
| • Project Management | • Experiment Designing | • Protocol Development |
| • Process Improvement | • Troubleshooting | • Problem Solving |
| • Strategic Planning/Collaboration | • Leadership/Supervision | • Technical Reporting |

Education

PhD in Chemistry, University of Florida (GPA: 4.0/4.0)	December 2011
MS in Chemistry, Indian Institute of Technology Bombay (CPI: 8.81/10.0)	May 2006
BS in Chemistry, Calcutta University	July 2004

Experience

- Postdoctoral Research Fellow - Harvard Medical School/MGH** January 2012 - present
- Designed and synthesized MRI (magnetic resonance imaging) contrast agents utilizing the Mn(II/III) redox couple to evaluate the pO₂ (hypoxia) and redox status of tissues within tumor microenvironment.
 - Probed the speciation of the manganese complexes in solution by measuring the pH, UV and relaxivity as a function of the amount of base added.

- Developed assays to test the stability of the manganese complexes under different conditions.
- Performed kinetic measurements to decipher the rate law and mechanism of reduction of manganese (III) using biological reductants like glutathione.
- Separated and purified molecules by both HPLC (analytical and preparative) and flash chromatography.

Graduate Research Assistant - University of Florida

August 2008 - December 2011

- Using critical thinking skills developed new synthetic strategies and successfully isolated the first synthetic analog that mimics the water oxidation complex (WOC) of plant photosynthesis.
- Probed and compared the electronic and structural properties of these synthetic analogs with the native WOC using electrochemistry, magnetochemistry, EPR, ENDOR, EXAFS and XANES.
- Expert at characterizing nanoscale magnetic materials using the SQUID magnetometer.
- Successfully isolated the largest single-strand molecular wheel via targeted size modulation – relevant to gas adsorption studies.
- Supervised research project of undergraduate student, involving detailed proposal of research strategy, experimental setup and meticulous follow-up of research progress.
- Trained new graduate students in general laboratory protocols, instrumentation techniques and guided them in their initial research projects.

Graduate Teaching Assistant - University of Florida

August 2006 - July 2008

- Instructed classes of 25 students in laboratory procedure as Teaching Assistant (TA).
- As head TA trained new TAs for conducting lab sessions and coordinated with ~ 40 TAs for the smooth functioning and grading of a busy lab course with tight scheduling.

Master's Research – IIT Bombay, India

August 2005 - May 2006

- Improved protocols for high yield synthesis of multidentate ligands to isolate titanasiloxane compounds using standard schlenk line techniques.
- Used NMR spectroscopy to monitor reaction progress and product identification in combination with FTIR, XRD, TGA and mass spectrometry.

Summer Internship – IACS Kolkata, India

May 2005 - July 2005

- Worked with a team of students to synthesize porous phosphate based molecular sieves using hydrothermal synthesis.
- Used XRD and TEM to probe the structure and morphology of these porous materials.



Awards and Recognitions

Graduate Student Symposium/ACS Women Chemists Committee Award	2011
American Chemical Society DIC Travel Grant	2011
1 st Prize in Poster Presentation in FAME 2011 conference	2011
Madelyn Lockhart Dissertation Fellowship for Emerging Scholar, Association for Academic Women	2011
Proctor and Gamble Research Excellence Award, University of Florida	2010

Office of Research Travel Grant, University of Florida

2010 - 2011

Certificate of Outstanding Achievement, University of Florida

2007 - 2011

Teaching Award, University of Florida

2007



Additional Information

Member of American Chemical Society, Inorganic Chemistry Division

2009 – present

Languages: English, Hindi and Bengali (native).



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