

LAXMIKANT LP PATHADE

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SUMMARY

Resourceful materials researcher with 8+ years of training under belt, 4+ years of facility administrator experience, exceptional work-ethic, team player with strong written and oral communications skills.

Expert in materials research, wet-lab synthesis, structural characterization, electron microscopy, spectroscopy, computational analysis, technical softwares, & computers.

WORK & RESEARCH EXPERIENCE

Administrator at the X-ray Facility at Syracuse University

2014-present

- Oversaw day to day operations of the powder X-ray diffractometer at the X-ray facility at SU. Saved university ~\$60,000 per year in instrument manager pay by taking over that position in addition to with my research & teaching duties.
- Responsible for new user training, queue management, specialized sample prep & data analysis, instrument troubleshooting, Haskris/chiller upkeep, scheduling maintenance & regulatory inspections.

Graduate Researcher at Syracuse University

2013-present

- My research focuses on synthesis of transition metal nanoparticles (NPs) that exhibited *hollow internal microstructures*.
- We successfully exploited these structural properties to improve *corrosion resistance* and create truly “*stainless*” NPs.
- Other research topics included - Asymmetric Internal Voids in Novel NP Systems, Silica Coating & Surface Functionalization of Magnetic NPs, Reaction Monitoring using CsPbX₃ Perovskite Nanocrystals, & DDA Computation Routines
- Published **6+** peer reviewed journal articles, co-authored 2 patents, and presented my work in 5+ conferences.

Teaching Assistant at Syracuse University

2013-present

- Taught General Chemistry and Honors General Chemistry (CHE 107-117, 129) courses at SU. Held recitations & office hours, conducted labs, & reported student progress.
- Developed 4 new lab modules including “*Comparing Optical Property of Fluorescent Compounds using Spectrometers*”.

Industrial Internships

- Worked on a research project for a *Fortune 500* chemical company in major capacity. 2017
- Interned at 2 medium-sized pigment-manufacturing plants in the industrial area near Mumbai, India. 2012
- Observed unit operations of chemical engineering, and prepared a report on manufacturing efficiency & workplace safety.

EDUCATION

Syracuse University

2013-2018

PhD Candidate in *Materials Chemistry* with Prof. Mathew M. Maye

Thesis: Internal Morphology & Corrosion Resistance in Stainless Steel Nanoparticles

Institute of Chemical Technology, Mumbai

2009-2013

Bachelor of Technology in *Chemistry*; Minors in *Chemical Engineering & Organic Colorants*

TECHNICAL SKILLS

- **Chemical Synthesis:** Nanoparticles (Transition and Noble Metals, Perovskites, Quantum Dots) · Schlenk Line and Glovebox techniques · Microwave · Organic Lab work
- **Structural Characterization:** Powder and Single Crystal XRD (Currently work as facility admin)
- **Electron Microscopy:** TEM / HR-TEM (trained on 3 different JEOL TEMs; trained new users) · EDS (Oxford Instruments Certification) · STEM · SEM · AFM (Bruker Innova) · Optical
- **Spectroscopy:** XPS/ESCA · EDS · NMR · Raman · AA · Mass · FTIR · UV-Vis · PL
- **Technical Misc.:** Magnetization in materials · Cyclic Voltammetry · DLS- ζ potential · Ultracentrifuge · Sputter Coater · Spin coater · Photolithography · TGA · DSC · Vernier Modules · Rotovap
- **Computational Analysis:** Discrete Dipole Approximation (DDA) · Familiar with FDTD
- **Softwares:** Datagraph · Plotly · Origin · ImageJ · ChemDraw · Vesta · TEMCON (JEOL) · Digital Micrograph (Gatan) · AZtec (Oxford Instr.) · Bruker Diffrac.Suite · CasaXPS · Adobe Illustrator · Corel-Draw · Maya basics
- **Languages:** Python · Jekyll · HTML/Markdown · Familiar with C/C++, Fortran
- **Computer Misc.:** 3D-printing · Raspberry Pi · Linux · Wordpress/MAMP · L^AT_EX · git