Laxmikant LP Pathade

http://laxmikantpathade.com • (315)560-8200 • lpathade@syr.edu
4-023, Center for Science and Technology, Syracuse University, Syracuse NY 13244

Profile

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

Skilled in materials research, electron microscopy (certification), structural characterization, spectroscopy, computational analysis, technical softwares, & computers.

Education

Syracuse University   **2013-2018**
Ph.D. 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**
B.Tech. in *Organic Colorant Technology*; Minors in *Chemical Engineering*

Work & Research Experience

Materials Chemistry Intern at Pelitex Inc.   **2017**

- Executed a synthesis scale-up & technology transfer project for a *Fortune 500* chemical company in record time.
- Designed new synthesis and safety protocols for materials synthesis at increased scales and improved waste recycling.
- Collaborated with researchers to optimize the silica shell coating to improve hydrophilicity of products.

X-ray Facility Administrator at Syracuse University   **2014-present**

- Trained new users on the diffractometer and necessary safety protocols; coordinated user queue.
- Collaborated with internal & external users for specialized sample prep & data analysis.
- Scheduled maintenance & regulatory inspections. Maintained auxiliary chiller operations & repaired minor breakdowns.

Graduate Researcher at Syracuse University   **2013-present**

- Investigated synthetic design of transition metal nanoparticles (NPs) that exhibited *hollow internal microstructures.*
- Successfully exploited our findings to improve *corrosion resistance* in these NPs and create truly *"stainless"* nanoparticles.
- Published **6** peer reviewed journal articles, co-authored **2** patents, and presented research in several professional conferences.
- Explored other research topics including - asymmetric internal voids in novel NP systems, silica coating & surface functionalization of magnetic NPs, reaction monitoring using $CsPbX_3$ perovskites, & corrosion in metallic thin films.
- Received the Graduate Teaching Mentor Award in 2015 from the graduate school at SU.

Internships

- Interned at 2 medium-sized pigment-manufacturing plants in Mumbai industrial area. Reviewed unit operations of chemical engineering and authored a report on manufacturing efficiency & workplace safety.   **2012**
- Summer research intern at ICT Mumbai; performed systematic study to synthesize an organic dyestuff intermediate.   **2011**

Technical Skills

- **Synthesis:** Nanoparticles (Transition and Noble Metals, Perovskites, Quantum Dots) · Air-free Techniques (Schlenk Line and Glovebox) · Organic Lab work
- **Electron Microscopy:** JEOL JEM 2100FE HRTEM equipped with Gatan Orius & OneView cameras, STEM detectors, & Oxford Instruments X-Max^N EDS detector (full user on 3 different JEOL TEMs & trained new users) · SEM (JEOL IT100LA) · EDS Certification from Oxford Instruments · AFM (Bruker Innova)
- **Structural Characterization:** Powder and Single Crystal X-ray Diffraction (Facility Manager)
- **Spectroscopy:** X-Ray Photoelectron Spectroscopy (XPS/ESCA) · NMR · FTIR · UV-Vis · Photoluminescence (PL)
- **Technical Misc.:** Photolithography · Spin coater · Sputter coater · Thermo-gravimetric Analysis (TGA) · Differential Scanning Calorimetry (DSC) · Magnetization in materials · Cyclic Voltammetry · Dynamic Light Scattering (DLS)
- **Computational Analysis:** Discrete Dipole Approximation (DDA) · Familiar with FDTD
- **Softwares**: Origin · Plotly · ImageJ · ChemDraw · Vesta · TEMCON (JEOL) · Digital Micrograph (Gatan) · AZtec (Oxford Instruments) · Bruker Diffrac.Suite · CasaXPS · Illustrator · Corel-Draw · Maya (basics) · Tinkercad
- **Languages & Computer Misc.:** 3D-printing · Raspberry Pi · Python · Jekyll · Wordpress · HTML · git · LaTeX