Pravin Sharma

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in LinkedIn | Personal Webpage

Williamsburg, VA - 23185, USA

OBJECTIVE

Physicist with expertise in atomistic modeling, experimental physics, ultrafast spectroscopy, and materials science, seeking a research-oriented role that combines problem-solving, innovation, and mentorship. Dedicated to advancing knowledge, driving technological progress, and inspiring others through teaching, collaboration, and impactful discoveries.

EDUCATION

- **William & Mary** — *August 2021 - Present*
  Ph.D. in Applied Science | Grade: 3.77 GPA — USA
- **Savitribai Phule Pune University** — *July 2019*
  MSc. Phyiscs (Materials Science) | Grade: B+ — India
- **Amrit Science Campus, Tribhuvan University** — *July 2013*
  BSc. Phyiscs | Grade: B+ — Nepal

EXPERIENCE

- **William & Mary** — *May 2023 - Present*
  Graduate Research Assistant — USA
  ◦ Atomistic study of ferromagnetic materials using different tools.

- **William & Mary** — *Aug 2021 - May 2023*
  Graduate Teaching Assistant — USA
  ◦ Grading for PHYS-101H, 102H (Algebra & Calculus based)
    and Lab Assistant for PHYS-101L and PHYS-102L labs.

- **Brainycube Research Organization** — *2014 - 2021*
  Research Associate | Event Organizer — Nepal
  ◦ Research Design, Practical demonstration of projects, lead the Nepal team to 5th APCYS-2016, New Delhi. Won 1 gold, 2 silver, and several other medals.
  ◦ Worked as founding member for the Young Science Summit - 2014 in Nepal, with 50+ participants from the whole country.

- **Texas International School** — *2014 - 2016 | 2019 - 2021*
  Science Teacher | Academic Incharge — Nepal
  ◦ Taught AP level Physics; Mechanics, Optics, Electromagnetism, Modern Physics, etc.

PROJECTS

- **Atomistic Spin Dynamics Study of ferromagnetic thin films** — *May 2023 - Present*
  Tools: [Density Functional Theory, Spin Dynamics Modeling (ASD), Wannier90, TB2J]
  ◦ Designed the experiment for PhD project and mentored three undergraduate for their capstone projects.
  ◦ Applied DFT and VAMPIRE tool for generating qualitative data for my PhD research.
  ◦ Implemented the use of W&M Research Computing resources for scientific calculation.
  ◦ Repaired the 25 year old Ultrafast Laser system and maintaining it as per the industry standard.

- **Study of SnO_2 coated Au nanocrystals with varying core sizes** — *June 2018 - April 2019*
  Tools: [Centrifuging Machine, Sonicator, Wet Lab, SEM, TEM, Origin Lab, MS Office]
  ◦ Synthesized Au@SnO_2 core-shell quantum dots using top to bottom approach of sizes from 10 nm to 30 nm.
  ◦ Used different characterization techniques and tools to characterize, analyze, plot and categorize the data.

WORKSHOPS & PUBLICATIONS C=CONFERENCE, J=JOURNAL, P=POSTER, W=WORKSHOP, T=THESIS

[C.1] **Sharma, Pravin**; Luepke, Gunter (2024). **Atomistic Investigation of Ultrafast Demagnetization of Permalloy films with varying laser fluence**. *ANPA Global Conference - 2024*, July, Fayettville State University, USA.
[W.1] **Sharma, Pravin**(2024). **2024 European School on Magnetism**. *The European Magnetism Association*, Aug-Sep University of York, UK. [Online]
[T.1] **Sharma, Pravin**; Mahamuni, Shailaja (2019). **Study of SnO_2 coated Au nanocrystals with varying core sizes**. *MS Physics Thesis*, July, Savitribai Phule Pune University, India.

SKILLS

- **Experimental & Characterization**
  - Magneto-Optical Kerr Effect (MOKE)
  - X-Ray Diffraction (XRD)
  - Atomic Force Microscopy (AFM)
  - Scanning Electron Microscopy (SEM, FE-SEM)
  - Transmission Electron Microscopy (TEM)
  - Energy Dispersive Spectroscopy (EDS/EDX)
  - UV–Visible Spectroscopy
  - Raman Spectroscopy
  - Fourier Transform Infrared Spectroscopy (FTIR)
  - Ultrafast Spectroscopy
- **Computational & Programming**
  - Atomistic Spin Dynamics (VAMPIRE)
  - Quantum Espresso (DFT)
  - Python;(NumPy, SciPy, Pandas, Matplotlib)
  - MATLAB
- **Research & Laboratory**
  - Ultrfast Laser setup
  - Optics alignment
  - Data acquisition & automation (LabView/Python)
  - Vacuum systems, Lab Safety & Calibration
- **Data Analysis & Visualization**
  - Origin Lab
  - Curve fitting
  - Error analysis
  - Signal Processing
- **Tools & Platforms**
  - Visual Studio
  - Website management
  - MS Office Tools

HONORS, AWARDS & CERTIFICATIONS

Honors & Awards

- **Graduate Assistantship for PhD** *2021 - Present*
  Applied Science, William & Mary
- **ANPA Travel Fund** *July 2024*
  2024 ANPA Global Conference, ANPA
  - Presented my research in the conference.

Certifications

- **MATLAB Essential Training** *2021*
  LinkedIn Learning [🌐]
- **IOP Peer Review Excellence Graduate** *2024*
  IOP Publishing [🌐]
- **Master Teaching Trainings** *2015*
  British Council

LEADERSHIP & VOLUNTEER

Leadership Experience

- **Founder of Notes For Physics** *2025 - Present*
  Notes for Physics [🌐]
  - Developed vision, mission, and growth strategy for the website.
  - Managed digital outreach and integrated smart minds together to contribute.
- **Finance Head for SPPU Annual Event** *2017-2018*
  Savitribai Phule Pune University
  - Oversaw the planning and implementation of INR 1.5 million event budget.

Volunteer Experience

- **Research Associate** *2014-2021*
  Brainycube Research Organization
- **Community Service** *2021 – Present*
  Baptist College Ministry (BCM), William & Mary [🌐]
  - Helping elder people in community in different way possible.

PROFESSIONAL MEMBERSHIPS

- Doctoral Student Council, W&M
- American Physical Society (APS)
- European Magnetism Association (EMA)
- W&M Optica Student Chapter
- IEEE
- Association of Nepali Physicists in America (ANPA)

ADDITIONAL INFORMATION

Languages: English (Proficiency level), Nepali (Proficiency level), Hindi (Proficiency level), Marvadi (Proficiency Level), Marathi (Average)

Interests: Scientific blogging, Reading Biographies, Outdoor Playing, Running

REFERENCES

- **Prof. Gunter Lüepke (Ph.D. Advisor)** | gxluep@wm.edu
- **Prof. Eric Bradley (Dept. Chair)** | elbrad@wm.edu
- **Prof. Shreekrishna D. Sartale (MSc Mentor)** | sdsartale@physics.unipune.ac.in
- **Prof. Bjorg Larsoon (Lab Supervisor, W&M)** | balarson@wm.edu