

CURRICULUM VITAE

PRIYAM V. PATKI

Graduate Research Assistant
School of Materials Engineering
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Education and Training

- 2020 **Ph.D. (Expected)**, Material Science Engineering, Purdue University
Advisor: Dr. Janelle Wharry/Dr. Maria Okuniewski
- 2018 **M.S.**, Nuclear Engineering, Purdue University
Advisor: Dr. Janelle Wharry
- 2016 **B.E.**, Chemical Engineering, University of Pune

Research Experience

- 2016–present **Research Assistant**, Purdue University
Study effects of radiation on microstructure and mechanical properties of nano-crystalline Copper Tantalum alloys. Extensive research experience on Focused Ion Beam (FIB), Transmission Electron Microscope (TEM), Atom Probe Tomography (APT), TEM *in situ* Mechanical Testing and TEM *in situ* ion irradiations
- 2015–2016 **Senior Year Project**, University of Pune
Designed and presented a detailed Emergency Response Drinking Water Plant in case of floods or earthquakes. The plant was self-powered using solar energy and had a capacity for providing drinking water to a disaster-affected small village

Publications

1. Patki, P. V., Chen, W & Wharry, J. P. (2020). TEM *in situ* investigation of the effect of cascade size on nanocluster stability in Nanocrystalline Copper Tantalum Alloy, *Scripta Materialia*, *Under Progress*.
2. Patki, P. V., Wu, Y & Wharry, J. P. (2020). Deformation based recovery of radiation altered microstructure of Nanocrystalline Copper Tantalum Alloy, *Journal of Materials*, *Under Progress*.
3. Patki, P. V., Wu, Y & Wharry, J. P. (2020). Effects of Proton Irradiation on Microstructural and Mechanical Properties of Nanocrystalline Copper Tantalum Alloy, *Materialia*, 10.1016/j.mtla.2020.100597.
4. Qu, H., Yano, K. H., Patki, P. V., Swenson, M. J. & Wharry, J. P. (2019). Understanding plasticity in irradiated alloys through TEM *in situ* compression pillar tests, *Journal of Materials Research*, 10.1557/jmr.2019.295
5. Wharry, J.P., Yano, K. H. & Patki, P. V. (2018). Intrinsic-extrinsic size effect relationship for micromechanical tests, *Scripta Materialia*, 162(2019), 63-67.
6. Qu, H., Yano, K. H., Patki, P. V., & Wharry, J. P. (2018). Method for Extracting True Stress from TEM *in situ* Compression Testing. *Microscopy and Microanalysis*, 24(S1), 1826-1827.

7. Patki, P. (2018). Microstructure Evolution and TEM in situ Mechanical Testing of Proton Irradiated Nanocrystalline Copper Tantalum Alloy. (Master's Thesis)
8. Yano, K. H., Patki, P. V., Swenson, M. J., & Wharry, J. P. (2017). Correlation between Irradiation Defects and Transition Dimension for TEM in Situ Mechanical Testing, Transactions of the American Nuclear Society, 116(2017), 22103

Presentations

1. Patki P. V., Wu, Y & Wharry, J. P. (2019). Deformation based recovery of Irradiation induced Ostwald Ripening in Nanocrystalline Cu-10at%Ta alloy, MiNES 2019, (Oral Presentation)
2. Patki P. V., Wu, Y & Wharry, J. P. (2019). Qualitative analysis of deformation in Proton Irradiated Nanocrystalline Copper Tantalum Alloy, TMS 2019, (Poster Presentation)
3. Patki P. V., Wu, Y & Wharry, J. P. (2018). Microstructure Evolution and TEM in situ Mechanical Testing of Proton Irradiated Nanocrystalline Copper Tantalum Alloy, TMS 2018, (Oral Presentation)
4. Wharry, J.P., Yano, K.H., Patki, P.V. & Wu, Y. (2018). Mechanics of irradiated alloys studied through in situ TEM testing, TMS 2018, (Oral Presentation)

Grants Awarded

1. DOE – NE NSUF. Role of Irradiation Damage Cascade Descriptors on ODS and Model ODS Nanocluster Evolution. Project 19-1757 (2019) \$50,000

Teaching Experience

- Fall 2017 **Teaching Assistant**, Purdue University
Instructed 23 nuclear engineering undergraduates on fundamental materials science techniques, including x-ray diffraction, metallography, annealing, mechanical testing, and optical and electron microscopy on Inconel 617 Samples.
- Fall 2016 **Teaching Assistant**, Purdue University
Instructed 21 nuclear engineering undergraduates on fundamental materials science techniques, including x-ray diffraction, metallography, annealing, mechanical testing, and optical and electron microscopy on Copper, Brass, and Steel samples.

Languages

English, Marathi, Hindi, and Spanish (Learning)

Programming Languages

HTML & Python (Proficiency – Beginner)

Research Equipment Skill

Focused Ion Beam (FIB), SEM (Scanning Electron Microscopy), TEM (Transmission Electron Microscopy) and Atom Probe Tomography (APT)

Awards and Achievements

1. Received the 2018 Estus H. and Vashti L. Magoon Award for excellence in teaching
2. Bharat Ratna Maulana Abdul Kalam Azad Scholarship 2012 (Pune Municipal Corporation)
3. Annabhau Sathe Scholarship 2010 (Pune Municipal Corporation)
4. Runner's up in the "Quiz" organized by IChE Students' Chapter, Department of Chemical Engineering, Sinhgad College of Engineering, Pune
5. "Student of the Year" award in grade 12th at Marathwada Mitra Mandal College of Science
6. Quarter-Finalist in Techgrandmaster's Quiz competition 2012 Nationals conducted by NDTV and Big Synergy
7. TCS IT Wiz Quiz competition: 2010 – Pune Regional Winners, 2011 – 2nd Runner's up
8. Secured 1st position in the inter-school Football (Soccer) competition 2009-10 conducted by Vikhe Patil Memorial School

Synergistic Activities

1. **Mentorship of undergraduate and graduate students in the research group:** Mentored research group members by giving tutorials on research-based analysis software like SRIM, IVAS, ImageJ, and ESPRIT. Student Mentor for undergraduate summer interns from SURF (Summer Undergraduate Research Fellowship) and NCN (Network for Computational Nanotechnology) programs.
2. **Mentorship of underprivileged students in India:** Lead a group of undergraduate students to teach underprivileged students in a small community the basics of English, Maths, and Science through interactive and visual-based learning aid.

References

1. Janelle Wharry, Ph.D
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2. Yaqiao Wu, Ph.D
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