ROOPALI KUKREJA

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EDUCATION

Indian Institute of Technology Bombay, India	Metallurgical Eng. & Materials Science	B. Tech., 2008
Stanford University	Materials Science and Eng.	M.S., 2011
Stanford University	Materials Science and Eng.	PhD, 2014

PROFESSIONAL EXPERIENCE

July 2016 – Present	Assistant Professor, Materials Science and Engineering, U.C. Davis, CA, USA
2014 – 2016	Postdoctoral Researcher, Center for Memory and Recording Research (CMRR)/ Dept. of Physics, U.C. San Diego, CA, US

HONORS AND DISTINCTIONS

- Awarded National Science Foundation **(NSF) CAREER Award** (2022)
- Awarded Department of Energy **(DOE) Early Career Research Program Award** (2021)
- Awarded American Physical Society **(APS) Magnetism Outreach Award** (2021)
- Awarded Nuclear Regulatory Commission **(NRC) Faculty Development Award** (2019)
- Awarded Air Force Office of Scientific Research **(AFOSR) Young Investigator Award** (2018)
- **Melvin P. Klein scientific development award** at SSRL/LCLS User conference (2015)
- Indo-U.S. Science and Technology Forum and the American Physical Society visitation award (2015)
- Gordon Research Conference on Ultrafast Phenomenon in Cooperative Systems travel award (2014)
- Helmholtz Virtual Institute for the Dynamic Pathways in Multidimensional Landscape Conference travel award (2012 & 2013)

PROFESSIONAL AND ACADEMIC ACTIVITIES

- Chair, Graduate Affairs Committee, UC Davis (2021-present)
- Member of User Executive Committee (UEC) and Proposal Review Panel (PRP), National Synchrotron Light Source II (2021-present)
- Member of Program Committee, Magnetism and Magnetic Materials Conference (2017-2021)
- Member of Executive Committee, American Physical Society (APS) Far West Section (2018-2021)
- Member of Executive Committee, Magnetic Interfaces and Nanostructures Division of AVS: Science and Technology of Materials, Interfaces and Processing (2017-2020)
- Organizer, Focus Topic Session on Tools for Exploring Materials Physics at the Frontiers of Length, Time and Energy Scales, APS March Meeting (2022-present)
- Organizer, Focus Topic Session on Magnetic Oxide Thin Films APS March Meeting (2018)
- Session Chair/Reviewer, Annual Meeting of the APS Far West Section (2018, 2020), and Magnetism and Magnetic Materials Conference, Hawaii (2014, 2016)

- Courses Taught at UC Davis: Advanced Structure Properties of Materials, Preparing for Graduate Student Success (graduate), Processing of 2D and nanomaterials, Structure and Characterization of Engineering Materials, Materials for Processing, Strategies of Online Learning (undergraduate)
- Mentor, Graduate Student of Color (GSoC) Mentor Program to assist retention of junior scholars from historically marginalized communities, UC Davis (2016-present)
- Mentor, AvenueE Program to help community college students smoothly transition to STEM, UC Davis (2016-present)
- Mentor, Mathematics Engineering Science Achievement program to enhance STEM related education and college outreach to K-12 schools in Greater Sacramento Area, UC Davis (2018-present)
- Mentor with MAP high school outreach society at UC San Diego (2015-2016)
- Reviewer, Nature Communications, Physical Review Letters, Physical Review B, Journal of Applied Physics, Physics Review Applied, Magnetism and Magnetic Materials, Review of Scientific Instruments, Applied Physics Letters, Materials, Scripta Materialia, Center for Nanoscale Materials (CNM), NSLS-II
- Member, American Physical Society and American Vacuum Society

INVITED TALKS AND SEMINARS

40. Invited Colloquia, University of Colorado, Colorado Springs (UCCS), Imaging Ultrafast and Ultrasmall to unravel electronic behavior of quantum materials (2022)

39. Invited Colloquia, University of Colorado Boulder, Imaging Ultrafast and Ultrasmall (2022)

38. Invited Colloquia, Denver University, Imaging Ultrafast and Ultrasmall (2022)

37. Invited Colloquia, University of Wyoming, Laramie, Imaging Ultrafast and Ultrasmall (2022)

36. Invited Colloquia, Colorado State University Fort Collins, Imaging Ultrafast and Ultrasmall (2022)

35. Invited Seminar, University of Wisconsin-Madison (UWM), Imaging Ultrafast and Ultrasmall (2022)

34. Invited Seminar, Texas A and M University (Texas A&M), Imaging Ultrafast and Ultrasmall (2022)

33. *Invited Plenary Talk* over zoom, APS Far West Meeting, Coherent X-ray scattering studies of quantum materials (2021)

32. Invited Talk over zoom, 78th Pittsburgh Diffraction Conferene, X-ray nanodiffraction studies of ionically controlled cobaltite heterostructures (2021)

31. Invited Talk over zoom, Advanced Light Source User's Meeting, Coherent X-ray scattering studies of quantum materials (2021)

30. *Invited Plenary Talk* over zoom, Resonant X-ray Scattering Conference, Coherent X-ray scattering studies of dynamics in quantum materials (2021)

29. Invited Talk over zoom, Advanced Photon Source User's Meeting, Coherent X-ray scattering studies of dynamics in functional materials (2021)

28. Invited Seminar over zoom, Understanding laser-induced non-equilibrium transformation pathways in soda-lime glass, Lawrence Livermore National Laboratory (2021)

27. Invited Seminar over zoom, University of Illinois Urbana-Champaign (UIUC), Understanding nanoscale correlations in complex oxide heterostructures (2021)

26. Talk over zoom, American Physical Society March Meeting, Ionically-controlled phase separation in cobaltite heterostructures (2021)

25. Invited Seminar over zoom, University of Illinois Urbana-Champaign (UIUC), Understanding ultrafast phenomenon in complex oxide heterostructures (2020)

24. Invited Colloquium over zoom, University of Denver, Understanding nanoscale correlations in complex oxide heterostructures (2020)

23. Invited Talk, American Physical Society March Meeting, Ionic control of phase separation in cobaltite heterostructures (cancelled due to covid-19, 2020)

22. *Invited Symposium Talk*, Magnetism and Magnetic Materials Conference, Ionic control of phase separation in cobaltite heterostructures (2019)

21. Invited Seminar, University of Paris-Sud, France, Ultrafast X-ray imaging of Spin Dynamics (2019)

20. Invited Seminar, X-ray Spectroscopy of Magnetic Materials Workshop, Ultrafast X-ray imaging of Magnetic Materials, Grenoble (2019)

19. Invited Talk, Advanced Light Source Users Meeting, Coherent x-ray scattering of correlated oxides (2019)

18. Invited Talk, Stanford Synchrotron Radiation Light Source/Linac Coherent Light Source Users Meeting, Manipulating photostriction in ferroelectric devices (2019)

17. Talk, American Physical Society March Meeting, Ionically-controlled phase separation in cobaltite heterostructures (2019)

16. Invited Talk, UC Riverside, Ultrafast dynamics in functional materials (2018)

15. Invited Talk, Advanced Light Source Users's Meeting, Ultrafast electronics and structural dynamics in correlated systems (2018)

14. Invited Talk, National Synchrotron Light Source II SAC Meeting (2018)

13. Invited Talk, National Synchrotron Light Source II User's Meeting, Orbital domain dynamics in magnetite near Verwey Transition (2018)

12. Invited Talk, ALBA Synchrotron, Ultrafast X-ray studies of functional materials, Spain (2018)

11. Invited Colloquium, UC Santa Cruz, Ultrafast X-ray studies of correlated materials (2018)

10. Invited Talk, Advanced Light Source (ALS) User Meeting, Ultrafast studies of magnetic heterostructures (2017)

9. Invited Seminar, University of Illinois at Urbana-Champaign, Ultrafast X-ray studies of correlated materials (2017)

8. Invited Talk, THz Ultrafast Electron Diffraction Workshop at SLAC, Ultrafast X-ray studies of correlated materials (2017)

7. Invited Talk, Ultrafast X-ray imaging of magnetic and correlated materials, University of California Davis (2017)

6. Invited Seminar, ALS, Imaging of Verwey transition in magnetite and spin currents in copper (2016)

5. Invited Talk, APS March Meeting, Baltimore, Direct observation of spin currents in Cu in a Co/Cu nanopillar (2016)

4. *Invited Plenary Talk*, SSRL/LCLS User Conference, Menlo Park, Direct measurements of spin accumulation in the Cu across Cu/Co interface (2015)

3. Invited Lecturer, IEEE Antenna Propagation and Electron device society, Bombay Chapter, X-ray imaging of spin injection into copper across a Co/Cu interface (2015)

2. Invited Seminar, Advanced Photon Source, Chicago, X-ray imaging of ultrafast phase separation in magnetite and spin injection into Copper (2014)

1. Invited Talk, International workshop on photoionization and resonant inelastic x-ray scattering, Italy, Verwey transition in Magnetite: how fast does an insulator become a metal (2014)