

Rama K. Vasudevan, Ph.D.

Group Leader, Data NanoAnalytics, R&D Staff Scientist,
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Education

The University of New South Wales	Nanotechnology	B.Sc. Hons, 2010
The University of New South Wales	Materials Science	Ph.D., 2013

Job History

2022-Present	Group Leader, Data NanoAnalytics, Center for Nanophase Materials Sciences
2020-Present	R&D Staff, and Data Analytics Coordinator, Center for Nanophase Materials Sciences
2016-2020	Research and Development Associate, Scanning Probe Microscopy Group, Center for Nanophase Materials Sciences, Oak Ridge National Laboratory.
2013-2015	Postdoctoral Research Associate in Scanning Probe Microscopy Group, Center for Nanophase Materials Sciences, Oak Ridge National Laboratory (ORNL).

Professional and Synergistic Activities

2022	Symposium Organizer, International Materials Research Congress, Cancun (“AI-enabled advances in materials imaging, automation, and analysis”) Materials breakout lead, Advanced Research Directions on AI for Science and Security Workshop, Nashville TN June 14-16
2021	Workshop organizer (Machine Learning and Automated Experiments in Scanning Probe Microscopy Virtual School)
2021	Symposium organizer, MRS Fall Meeting, “Accelerating Materials Characterization, Modeling, and Discovery by Physics-Informed Machine Learning” Symposium Organizer, International Materials Research Congress, Cancun (“AI-enabled advances in materials imaging and analysis”)
2020	Editor for special topic issue of Journal of Applied Physics on Machine learning for materials design and discovery, Workshop organizer (AI for Atoms: How to Machine Learn STEM, 2020)
2019	DOE Scientific User Facilities AI Roundtable writing team/participant
2019-Present	Editorial Board member, Machine Learning: Science and Technology (IOP Journal)
2017-2018	PFM Workshop organizer (ISAF-PFM 2017); Tutorial Instructor (Materials Research Society March Meeting, Phoenix AZ 2017), Workshop organizer (Microscopy and Microanalysis 2018, and CNMS User Workshop)
2012-Present	Reviewer for <i>Nature</i> , <i>J. Mat. Chem. C</i> , <i>J. Appl. Phys.</i> , <i>App. Phys. Lett.</i> , <i>Nanoscale</i> , <i>2D Materials</i> , <i>npj Computational Materials</i> , and many more.

Proposals/Grants

2021-Present	INTERSECT Initiative AutoFlow(s) Proposal – Co-PI (\$500K/yr)
2016-2022	DOE BES MSED FWP (Probing Polar Orderings) - Co-PI (~\$900K/yr)
2019-2020	ORNL AI Initiative (Reinforcement Learning/Materials Lead) – Co-PI (\$~2M/yr)
2018	ORNL LDRD Proposal: “Deep learning for solving inverse problems in imaging and multi-spectral data” – PI (~\$270k)

Honors and Awards

2019	MicroscopyToday Innovation Award
2015	ORNL Postdoctoral Researcher award
2014	Faculty of Science Award for Excellence in PhD Research, UNSW

Skillset

- Condensed matter physics, thermodynamics, computation
- Data analytics, machine learning methods, deep learning, reinforcement learning

Research Highlights

- Authored or co-authored over 100 peer-reviewed publications/h-index 35/4500+ citations
- Delivered 20+ invited talks at major international conferences including Materials Research Society, American Physical Society, Gordon Research Conference, etc.