Bivas Saha

Associate Professor
International Center of Materials Science &
Chemistry and Physics of Materials Unit &
School of Advanced Materials.
Jawaharlal Nehru Center for Advanced Scientific Research

June 2026

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PROFESSIONAL EXPERIENCE

2023 – Present **Associate Professor**, **Jawaharlal Nehru Center for Advanced Scientific Research**

- International Center of Materials Science (ICMS), Chemistry and Physics of Materials Unit (CPMU) Bangalore, KA, 560064, India.

2018 – 2022 **Assistant Professor**, **Jawaharlal Nehru Center for Advanced Scientific Research**

2014 – 2017 **Postdoctoral Scholar, University of California, Berkeley, CA, USA.**

- Department of Materials Science and Engineering &
  Center for Energy Efficient Electronic Sciences
- Affiliate @ Lawrence Berkeley National Laboratory (LBNL).

EDUCATION

2010 - 2014 **Ph. D. Purdue University, West Lafayette, Indiana, USA**

- School of Materials Engineering & Birck Nanotechnology Center
- Dissertation Title: *Thermal and Thermoelectric Properties of Nitride Metal/Semiconductor Superlattices.*

2007 - 2010 **M. S. Jawaharlal Nehru Center for Advanced Scientific Research, Bangalore (JNCASR), Karnataka, India**

- Chemistry and Physics of Materials Unit
- Dissertation Title: *Theoretical Modeling of Nanostructured (Hf, Zr)N/(Sc, Y)N Metal/Semiconductor Superlattices for Thermoelectric Energy Conversion.*

2004 - 2007 **B. Sc. Jadavpur University, Kolkata, West Bengal, India**

- Department of Physics (Major)

RESEARCH INTERESTS

- Heteroepitaxy of Dissimilar Materials and Metal/Semiconductor Superlattices.
- Plasmonics and Nano-photonics.
- Phase-change Materials and Devices.
- Topological Physics and Materials.
- First-principles Modeling of Materials.

ADMINISTRATIVE RESPONSIBILITIES

- **Editor**, Solid State Communications (08/2022- Cont.)
- **Coordinator,** BS-Ph.D. Program**,** Physics and Materials Science. (2026- Cont.)
- **Warden** of JNCASR Students Residence (2023-2025)
- **Faculty Director**, JNCASR Nanofabrication Laboratory. (10/2018- 10/2025)
- **Member:** Library Committee, Gas Cylinder Management Committee, Day-care facility committee, Mess Committee, Purchase Committee, Internal Complaints Committee (ICC)
- **Coordinator,** JNC Summer Research Fellowship Program in Physical Sciences, (2020-2024.).

RESEARCH GRANTS

- Anusandhan National Research Foundation (ANRF), **Seminars/Symposia on "Innovative Devices for Emerging Applications (IDEA-2026)**, Convenor, January 2026"
- Anusandhan National Research Foundation (ANRF), **International Travel Award** (ITA) for MRS, 2025 in Boston, US.
- Project Title: "Achieving Room-Temperature Metal-insulator Transition in CrN with Epitaxial Strain Engineering"- PI: Bivas Saha, Department of Science and Technology (DST), India **Core Research Grant (CRG)**. September 2024-Present.
- Project Title: "Radiative Cooling Paint Design and Development"-PI. **Climate ETC Technology Services Private Limited.** October 2024- Present.
- Project Title: "Soft X-ray ARPES Investigation of the Valance Band in *p*-type ScN and CrN across its Metal-Insulator Phase Transition PI: Bivas Saha, **Nanomission Synchrotron and Neutron Facility Project,** September, *2023.*
- Project Title: "Correlating Local Structure and Metal-Insulator Electronic Phase Transition in CrN Thin Film with EXAFS Analysis" PI: Bivas Saha, **Nanomission Synchrotron and Neutron Facility Project**, September, 2021.

- Project Title: "Low-cost Solution-processed Nanocomposite Metamaterial Radiative Cooler Paint for Household Applications"- PI: Bivas Saha, **Ras Al Khaimah Centre for Advanced Materials** (RAC-CAM). (04/2021- Cont.)

- Project Title: Correlating Structure and Metal/Insulator Electronic Transition in Strained CrN Thin Films with High-resolution Reciprocal Space Mapping, PI: Bivas Saha, **Nanomission Synchrotron and Neutron Facility Project**, September 2021.
- Project Title: "Epitaxial Metal/Semiconductor Nanocomposite Metamaterials for Thermoelectrics and Terahertz Devices" PI: Bivas Saha, **Board of Research in Nuclear Sciences (BRNS)** of Department of Atomic Energy for **Young Scientist Investigator Award**. Award Number: 59/20/10/2020-BRNS/59020. (09/2020- Cont.).
- Project Title: "Determination of Phononic Bandgap and Phonon Localization in Epitaxial HfN and HfN/ScN Metal/Semiconductor Superlattice Metamaterials with Inelastic X-ray Scattering"- PI: Bivas Saha, **Nanomission Synchrotron and Neutron Facility Project**, February 2020.
- Project Title: "Scandium Nitride Schottky and *pn*-junction Didoes." PI: Bivas Saha (JNCASR). **Start Up Grant, Science and Engineering Research Board** of Department of Science and Technology, India (2019) SRG/2019/000613. (01/2020- Cont.).
- Science and Engineering Research Board (SERB) **International Travel Award** (ITA) for ICMCTF, 2019 in San Diago California.
- Project: **Start-up Research Grant** from International Center for Materials Science and Sheikh Saqr Laboratory of Jawaharlal Nehru Center for Advanced Scientific Research.
- Project Title: "Exploration of functional nitride-based metal/semiconductor superlattices for applications as thermoelectric and plasmonic materials". Co-PIs: Bivas Saha (UC Berkeley) and Magnus Garbrecht (LinkÖping University). **The Swedish Foundation** for International Cooperation in Research and Higher Education (STINT) Research Initiation Grant**,** $12,500. (2017-2018).

PATENTS

- Thermoelectric thin film materials and sensors for temperature and photon sensing, **Indian Patent Application**, **202641040179,** B. Saha, R. Karanje, Dheemahi.

- A Nitride Material, Its Preparation Process, and a Device Thereof. **Indian Patent Application**, 202541072202, S. Manna, S. Rudra and B. Saha.

- A Polymer Nanocomposite for Radiative Cooling. **Indian Patent 569701**, P. Das and B. Saha.

- Artificial Synaptic Devices. **Indian Patent** Number **532159,** D. Rao and B. Saha, 2023

- TiN-based metamaterials. **US Patent**, PCT/US2013/64057, G. V. Naik, B. Saha, T. D. Sands, V. M. Shalaev and A. Boltasseva.

AWARDS, HONORS, FELLOWSHIPS

- Sheikh Saqr Senior Career Award Fellowship, (2025-2027.)
- Emerging Leader, Journal of Physics D: Applied Physics, 2023.
- Sheikh Saqr Junior Career Award Fellowship, (2022-2024.)
- ACS Applied Energy Materials Early Career Energy Scientist, 2022.
- **Associate, Indian Academy of Sciences**, (2020- 2024.)
- **Young Scientist Research Award,** Board of Research in Nuclear Sciences (BRNS) of Department of Atomic Energy, India, 2020.
- Outstanding Graduate Student Researcher in Materials Engineering, Purdue University, 2014.
- Best Presentation Award, Materials Research Society (MRS) of USA Fall 2013.
- Best Poster Award, (a) SIGMA XI Graduate Student Research Awards Competition; Purdue University, 2013, (b) Symposium on Nanomaterial for Energy, Purdue University, April 2012, (c) Best Poster Award, Winter School on Chemistry and Physics of Material. JNCASR, Bangalore, 2009.

ORGANIZOR

- **Convenor:** International workshop on "Innovative Devices for Emerging Applications (IDEA) JNCASR January 8-9th 2026.
- **Co-organizer**: Indo-Swedish Conference on Electronic Structure: Theory and Practice, November 24-28, 2024, The Evolve Back – Coorg.

TEACHING EXPERIENCES

Jawaharlal Nehru Centre for Advanced Scientific Research

- JNC 208: Characterization of Materials. Fall 2019- Cont. *(Designed this Ph.D. Course)*
- JC: 227: Optical Properties of Materials. Spring 2020 (*Designed this Ph.D. Course*)

- JC 216: Solid State Electronics. Spring-2019.
- JC 218: Materials Laboratory. Fall 2018-Cont.

Teaching Assistant (TA) in Purdue University, School of Materials Engineering.

- Fall 2013: Materials Properties Laboratory (MSE-235)
  - Student Evaluation: 4.8/5 for MSE-235-002, and 4.2/5 for MSE-235-003.

- Fall 2011: Structure and Properties of Materials (MSE-230)
  - Student Evaluation: 4.5/5 for MSE-230-003, and 4.4/5 for MSE-230-008.

STUDENT SUPERVISION

Ph.D. Students (Current)

- Anwesha Bera (09/2024- Cont.)
- Anupam Bera (09/2024- Cont.)
- Renuka Karankaje (01/2024- Cont.)
- Aritra Dey (08/2023-Cont.)
- Debmalya Mukhopadhyay (09/2022-cont.)
- Sourav Rudra (09/2021 – Cont.)

Ph.D. Students (Graduated)

- Prasanna Das 2025.
- Dheemahi Rao, 2024.
- Bidesh Biswas, 2024.
- Krishna Chand Maurya, 2023.

M.S. Students (Current)

- Prashant Verma (05/2025- Present).
- Diksha Dadhich (08/2024- Present)
- Subhajit Manna (08/2024- Present)

M.S. Students (Graduated)

- Rahul Singh Rawat, 2024
- Deeksha Sharma, 2023.
- Dheemahi Rao, 2020.

Post-graduate Diploma in Materials Science

- Ananya Bandyopadhyay (08/2025- Present)
- Renuka Karankaje (08/2023- 12/2023)
- Ankit Kumar (Graduated, 2023)

Postdoctoral Scholar

- Dr. Ajay Pratap Singh Rana (03/2026- Cont.)
- Dr. Bidesh Biswas (08/2024- 04/2025)
- Dr. Abhijit Chatterjee (04/2023- 09/2023)
- Dr. Nidhi Pandey (NPDF, 03/2022- 04/2023)
- Dr. Shashidhara Acharya (05/2019-12/2020)

Project Student

- Gaurav Bolegave (06/2025- Cont.)
- Ruhi Tabassum Hazarika (03/2025- 04/2026)
- Joy Dhar (11/2024 – 08/2025)
- Mehak Loyal (06/2022- 12/2023)
- Sneha Kobri (08/2021- 04/2022)
- Krithika Upadhaya (01/2020 – 10/2021)
- Bidesh Biswas. (03/2018 – 12/2018)

Summer Research Fellow and Short-term Visitors

- Anshuman Ghadei (UM-DAE, Mumbai, 2025)
- Dolly Bansal (IIT Bombay, 2025)
- Prashant Verma (JNCASR, 2025)
- Soumika Chakraborty (IIT Kharagpur, 2025)
- Diksha Dadhich (JNCASR, 2024)
- Subhajit Manna (JNCASR, 2024)
- Sutopa Modak (JNCASR, 2024)
- Sampriti Ghosh (IISER TVM. 2024)
- Niranjan Jayaprakash (IISER TVM. 2024)
- Hima Bindu Tadi (Acharya Nagarjuna University, Guntur, 2023)
- Kashish Kapoor (IISER, TVM).
- Advika Vidhyadhiraja (Manipal Institute of Technology, 2022)
- Rahul Singh Rawat (JNCASR, 2022)
- Lingesh Guru Priyan (SRM University, 2021)
- Deeksha Sharma (JNCASR, 2021)
- Avari Roy (Physics, IIT Bombay- 2019)
- Indrajit Ratan (Physics, Ferguson College, Pune- 2019)
- Dheemahi Rao (JNCASR, 2018)

Student Mentorship (2008-2017)

- Don Rollings (University of Massachusetts, Amherst- 2017)
- Jane Edgington (Rensselaer Polytechnic Institute -2016)
- Liam Dougherthy (San Jose Community College, TTEREU-2016).
- Andrew Cook (University of Maryland, 2015)
- Jonathan Comparan (Purdue University, 2013-2014).
- Nelson Yaw Dzade (African University of Science and Technology, 2010)
- Jagaran Acharya (Tribhuvan University, 2008)

EVALUATION COMMITTEE

Ph.D. Qualifying Examination Committee Member

Outside JNCASR

- Mr. Saager C D (IISc. Physics).
- Ms. Anusha Dsouza (CENS)
- Mr. Monosij Roy (IISc.)
- Mr. Susanta Manna (IISc)
- Mr. Inder Kumar (IISc. Physics).
- Mr. Ramesh J (VIT)
- Ms. Barnali Mondal (IISc.)

Within JNCASR

- Moinak Dutta (NCU, 2018)
- Payel Mondal (ICMS, 2019)
- Soumik Ghosh (TSU, 2020)
- Arabinda Bera (TSU, 2020)
- Animesh Bhui (NCU, 2021)
- Gunjan Sharma (CPMU, 2021)
- Anita Gemmy Francis (TSU, 2021)
- Manish Tiwari (CPMU, 2021)
- Samina Dastagir Mulla (2025)
- Mr. Ayan Ganguly (NCU, 2025)
- Anustoop Das (NCU. 2022)
- Ivy Maria (NCU, 2022)
- Sohini Chatterjee (TSU, 2022)
- Biplab Patra (NCU, 2022)
- Sumukh Purohit (CPMU, 2022)
- Mohd. Arif (NCU, 2022)
- Gauttam Dash (NCU, 2022)
- Prabhat Thapliyal (NCU, 2022)

PROFESSIONAL SERVICES

Journal Reviewer

- Nature
- Nature Physics.
- Physical Review Letters.
- Advanced Materials
- Nano Letters
- Physical Review B.
- Physical Review Applied
- Physical Review Materials
- Applied Physics Letters.
- Journal of Applied Physics
- ACS Nano
- ACS Omega
- ACS Applied Materials and Interfaces
- ACS Applied Energy Materials
- Journal of Physics D: Applied Physics
- RSC Advances
- Journal of Material Science
- Science of Advanced Materials
- Energy Conversion and Management
- Chemistry of Materials
- Measurement (Elsevier)
- Optical Materials Express
- Optical Materials
- Phys. Stat. Solidi: Rapid Research Letters
- Advanced Electronic Materials
- Solid State Communication.
- Thin Solid Film.
- Physical Status Solidi A: Applications and Basic Research,
- Advanced Energy Materials
- Superlattices and Microstructures,
- IEEE Transactions on Nanotechnology.
- Journal of Computational Electronics
- Materials.
- Vacuum.
- Pramana
- Advanced Photonics Research
- Advanced Surface Science
- IScience (Cell Press)

Member

- Materials Research Society (MRS) of the USA, 2010-2017, 2024-Present.
- American Physical Society (APS), 2014-2017.
- American Vacuum Society (AVS), 2020-2021.
- Research Awareness Sub-committee: Nanotechnology Students Advisory Council (NSAC), Purdue University, 2013-2014.
- Activities Committee: Nanodays, Birck Nanotechnology Center, 2012.

Others:

- Member, Research & Academic Advisory committee of Department of Physics, MVJ College of Engineering, Whitefield, Bangalore-67.
- Technical Committee Member, XXIth International Workshop on Physics of Semiconductor Devices (IWPSD 2021) at the Indian Institute of Technology Delhi, from 14th – 17th Dec. 2021
- Ambassador, Discovery Park, Purdue University, 2012-2013.
- Ambassador, Birck Nanotechnology Center, Purdue University. 2011-2012.

- Chair, Poster Organizing Committee: Symposium on Nanomaterial for Energy, Purdue University, April 2012.
- Reviewer, Center of Energy Efficient Electronics and Sciences (E^3S) Research Experience for Undergraduates (REU) Program 2015.

Professional/Scientific Review Committee:

- Scientific Proposal Reviewer for Anusandhan National Research Foundation (2025-Cont.)
- Reviewer for South Africa's National Research Foundation (NRF) Specialist Committee for Evaluation of Scientists and Personnels (2021).
- Proposal Review Committee for DESY Germany and KEK Japan: to review proposals for their suitability to conduct synchrotron experiments in DESY, Germany and KEK Japan (2021-Cont.).
- Scientific Proposal Review Committee: Board of Research in Nuclear Sciences, Department of Energy, India.
- Faculty Selection Committee, Chemistry and Physics of Materials Unit and International Centre for Materials Science, 2023.
- Member, Research & Academic Advisory committee of Department of Physics, MVJ College of Engineering, Whitefield, Bangalore-67.
- Technical Committee Member, XXIth International Workshop on Physics of Semiconductor Devices (IWPSD 2021) at the Indian Institute of Technology Delhi, from 14th – 17th Dec. 2021

INVITED TALKS

1. Decoding Anomalous Thermal Transport in Magnetic Semiconductors, DESY Synchrotron User Meeting, **Saha Institute of Nuclear Physics**, 2026.
2. Manipulating Vector Spin Chirality in Noncollinear Antiferromagnets, CNR Rao Research Conference, **IISER Berhampur**, 2026.
3. Emergent Pathways to the Metal-Insulator Transition Magnetic Stress, Potential Fluctuations and Confinement, International Workshop on Advanced Materials **(IWAM), Ras Al Khaimah UAE**, February 2026.
4. Orbital Angular Momentum-driven Magnetism and Electronic Structure of Epitaxial Rare-earth Nitrides, **MRS Fall Meeting, Boston**, **US** December 2025.
5. Metal/Semiconductor Superlattices: Building Matter Layer-by-Layer, DAE-SSPS, **IIT Roorkee**, 2025.
6. Metal/Semiconductor Superlattices: Building Matter Layer-by-Layer, CMPA, **Manipal Academy of Higher Education**, 2025.

7. Metal/Semiconductor Superlattices: Building Matter Layer-by-Layer, **IISc. Physics Seminar**, 2025.
8. Metal/Semiconductor Superlattices: Building Matter Layer-by-Layer, **IISc. CENSE Seminar**, 2025.
9. Polaritons for Near-UV-to-Far-Infrared Nanophotonics, Frontier in Sciences Symposium, **IISER Thiruvananthapuram**, January 2025.
10. Polaritonic Nitrides for Near-UV-to-Far-Infrared Nanophotonics, **MRS Fall Meeting, Boston**, December 2024.
11. Polaritonic Nitrides for Near-UV-to-Far-Infrared Nanophotonics, **Indo-Sweden and Indian Academy of Sciences joint symposium**, Coorg, November 2024.
12. Magnetic Stress-driven metal-insulator phase transition in Strongly Correlated Quantum Materials, **3rd PETRA III Beamline P08 Evaluation, DESY, Hamburg**, October 8-9th, 2024.
13. Magnetic Stress-driven metal-insulator phase transition in Strongly Correlated Quantum Materials. Department of Physics, **IISER Kolkata**, July 24th, 2024.
14. Functional nitride thin films and Superlattices for thermoelectric applications, Indo-German Workshop on Thermoelectric Devices for emerging applications, **IISER, Thiruvananthapuram**, February26th, 2024.
15. Magnetic Stress-driven metal-insulator phase transition in Strongly Correlated Quantum Materials. Department of Physics, **IISER Pune**, January 19th, 2024.
16. Magnetic Stress as a New Chauffeur of Metal-Insulator Transition, International Conference on Functional Materials, **IIT Kharagpur** January 10th, 2024.
17. Magnetic Stress-driven metal-insulator phase transition in Strongly Correlated Quantum Materials. **14th APCTP-IACS-Academy-JNCASR Joint Meeting** December 2nd, 2023
18. Rare-earth Nitrides for 4th Industrial Revolution, **Victoria University of Wellington, New Zealand**, May 12th, 2023.
19. Polaritonic Material Platform for Tunable Nanophotonic Devices, Advances in Low-dimensional Materials for Optoelectronic and Nano Devices (ALMOND 2023), **Institute of Physics**, Bhubaneswar, India. 2023.
20. Phonic Bandgap and Phonon Anomalies in Epitaxial Nitride Thin Films and Heterostructures, **SPRUC Momentum-resolved Spectroscopy Conference**, March 2nd, 2023, Hoyogo, **Spring-8 Japan**.
21. Polaritonic Material Platform for Tunable Nanophotonic Devices, International Workshop on Advanced Materials (IWAM), **Ras Al Khaimah UAE**, February 22th 2023.
22. Epitaxial Nitride Thin Films and Heterostructures: Emerging Applications and Future Prospects, **PVD Products Webinar, Boston, March 30th, 2022**.

23. Lateral Metal-Semiconductor Heterostructures with Enhanced Thermoelectric Properties, **Materials Research Meeting, Yokohama, Japan**, December 13th, 2021.
24. Lateral Metal-Semiconductor Heterostructures with Enhanced Thermoelectric Properties, Sessions: Thermoelectric, **Materials Research Society of India** December Meeting, December 23, 2021.
25. Determination of Phononic Bandgap and Phonon Anomalies in Epitaxial Metal/Semiconductor Superlattices with Inelastic X-ray Scattering, **meV-resolved Inelastic X-ray Scattering Workshop** (Online), Organizer, Spring-8, Japan, 6th September, 2021.
26. Semiconducting Transition Metal Nitrides as Gateway Materials for Optoelectronic Artificial Synaptic Devices, Dept. of Condensed Matter Physics and Material Sciences, **S. N. Bose National Centre for Basic Sciences**, Kolkata, August 18th, 2021.
27. Rigid-Band Electronic Structure of ScN across n-type to p-type carrier transition regime. International Conference on Materials for Advanced Technologies **(ICMAT) Singapore** June 25th 2019.
28. Schottky Barrier Height of Epitaxial TiN/(Al,Sc)N Metal/Semiconductor Superlattices for Thermionic Energy Conversion. International Conference on Materials for Advanced Technologies **(ICMAT) Singapore** June 27th 2019.
29. Metal/Semiconductor Superlattice Metamaterials: A New Paradigm in Solid-State Energy Conversion. International Conference on Metallurgical Coatings and Thin Films **(ICMCTF), American Vacuum Society (AVS), San Diego California US** May 19-24, 2019.
30. Epitaxial TiN/(Al,Sc)N Metal/Semiconductor Superlattices for Thermionic Energy Conversion, **Indus Synchrotron User Meeting**, Raja Ramanna Centre for Advanced Technology (RRCAT), March 28th 2019.
31. Engineering Schottky Barrier Height in Epitaxial TiN/(Al,Sc)N Metal/Semiconductor Superlattices. International Workshop on Advanced Materials (IWAM), **Ras Al Khaimah UAE**, February 26th 2019.
32. Sub-50 mV Nano-electromechanical Relay Switch Devices, **14th JNC Conference on Chemistry of Materials, Thiruvananthapuram, Kerala,** October 5th, 2018.
33. **Plenary Talk:** Metal/Semiconductor Heterostructure: A New Paradigm in Solid-State Energy Conversion. International Science Week, **Industrial University of Santander (UIS), Bucaramanga – Colombia**. September 21, 2018.
34. Metal/Semiconductor Superlattices: Promise for a New Paradigm in Solid-State Energy Conversion, Department of Physics, Chemistry and Biology, **Linkoping University, Linkoping**, **Sweden,** March 5th 2018.

35. Metal/Semiconductor Superlattices: Promise for a New Paradigm in Solid-State Energy Conversion, Department of Metallurgical Engineering and Materials Science, **Indian Institute of Technology Bombay (IIT-Bombay)**, India July 12th 2017.
36. Sub-50 mV Nano-electromechanical Relay Switch, Department of Electrical Engineering, **Indian Institute of Technology Bombay (IIT-Bombay)**, India July 12th 2017.
37. Metal/Semiconductor Superlattices: Promise for a New Paradigm in Solid-State Energy Conversion, Department of Condensed Matter Physics and Materials Science, **Tata Institute of Fundamental Research (TIFR)**, India July 11th 2017.
38. Sub-50 mV Nano-electromechanical Relay Switch, **Center for Nano and Soft Matter (CENSE)**, Bangalore, India, July 7th 2017.
39. Metal/Semiconductor Superlattices: Promise for a New Paradigm in Solid-State Energy Conversion, International Center for Materials Science and New Chemistry Unit, **Jawaharlal Nehru Center for Advanced Scientific Research (JNCASR)**, Bangalore, India July 6th 2017.
40. Metal/Semiconductor Superlattices: Promise for a New Paradigm in Solid-State Energy Conversion, Department of Materials Engineering, **Indian Institute of Science (IISc.)**, Bangalore, India July 3rd 2017.
41. Sub-thermionic Nano-electromechanical Relay Switches for Low Power Electronics and Internet of Things, **Micron Technology, Inc**. Boise, ID, June 5th, 2017.
42. Metal/Semiconductor Superlattices: Promise for a New Paradigm in Solid-State Energy Conversion, Materials Department, **UC Santa Barbara**, February 21st, 2016.
43. Materials Engineering of MEMS Relay Contact Surfaces, **NSF STC Energy Efficient Electronics Sciences Seminar, Massachusetts Institute of Technology (MIT)**, October 27, 2017.
44. Thermal and Thermoelectric Properties of Nitride Metal/Semiconductor Superlattices- **California Institute of Technology**, July 2014.

(Invited talks presented inside the University (JNCASR, Purdue, and UC Berkeley) while Dr. Saha is an employee or was a student are not listed here).

OUTREACH (Presentations and Tutorials)

- From Atoms to Algorithms: How Nanotech is Driving Energy and AI Breakthroughs, Bengaluru Science Gallery, November 2024.

- How to Craft Brain-inspired Computers, India Science Festival, 2024. Pune, India.
- Karnataka State Higher Education Academy, Dharwad, March 27th, 2021.
- National Science Day, JNCASR, February 28th, 2021.
- India International Science Festival Curtain Raiser, JNCASR, December 10, 2020.
- Faculty Development Program (FDP) on "Smart Materials and their emerging technologies" – BMS Institute of Technology and Management, July 2019.
- "Hands on training on Microscopy and Thin Film Measurements"- Siddaganga Institute of Technology, April 2019.
- Samagatha, "Smart Synergy" – Emerging trends in applications of smart materials. Maharani Lakshmi Ammanni College for Woman, February 2019.
- Faculty Development Program (FDP) on "Thin Films & their applications" – RV College of Engineering, February 2019.
- Popular Science Talk on "Nanotechnology and New Materials: From Energy Security to Artificial Intelligence"- CNR Rao Hall of Science, November 2018.
- Basics of Spectroscopy and Light-Matter Interactions- Project Oriented Chemical Education (POCE) Students in JNCASR.

NEWS AND RESEARCH HIGHLIGHTS

- News Title: "**Solving mystery of heat transport in magnetic semiconductors unveils possibilities in high-performance electronics**" https://www.pib.gov.in/PressReleasePage.aspx?PRID=2238734&reg=3&lang=2&fbclid=IwY2xjawRX99dleHRuA2FlbQIxMABicmlkETFJWndXeTg1QXo5ZFpqdXZNc3J0YwZhcHBfaWQQMjIyMDM5MTc4ODIwMDg5MgABHpl0m42glMx8F5imHEh8jGA9n83kuqapA76-ni3m5SI2n8wy_ZO3qmus-0hC_aem_yfIyI56ScrOhdNBRkTkgFA

- News Title: "**Breakthrough in rare-earth magnetism promises more efficient quantum technologies**" https://dst.gov.in/breakthrough-rare-earth-magnetism-promises-more-efficient-quantum-technologies?fbclid=IwY2xjawRX94hleHRuA2FlbQIxMABicmlkETFJWndXeTg1QXo5ZFpqdXZNc3J0YwZhcHBfaWQQMjIyMDM5MTc4ODIwMDg5MgABHrOfIzcNJncsMkL_ZUs5v1M3TatbYrZ5YYLcb77DQE72y06OlMwuEpB1uM8W_aem_SB7WClVLpOoyaOVzTF_K4w

- News Title: "**Breakthrough in Thermionic Emission with Metal/Semiconductor Superlattices**" https://www.pib.gov.in/PressReleasePage.aspx?PRID=2114875&fbclid=IwY2xjawRX9xBleHRuA2FlbQIxMABicmlkETFJWndXeTg1QXo5ZFpqdXZNc3J0YwZhcHBfaWQQMjIyMDM5MTc4ODIwMDg5MgABHjjEVGgy4gk0Was4Q7WHoD0L5W1_kKSwo2CMOQgygC2PGI7MBKjvjrJBEXzd_aem_33XuJymMBLTyyQBkZvMGkg&reg=3&lang=2

- New Title: "**Scientists develop flexible near-infrared plasmonic devices for wearable sensors and medical imaging tools**" https://dst.gov.in/scientists-develop-flexible-near-infrared-plasmonic-devices-wearable-sensors-and-medical-imaging?fbclid=IwY2xjawH8khVleHRuA2FlbQIxMAABHQV0G5yYCcCzMT9uDxkaC18leMBs21WKRJ_iDNl3xiE55mGQhxYSbk7GsA_aem_VFOky46UFTCfShChBsQfeg

- News Title: "**Novel Insights into Electron Scattering in Semiconductors Creates Potential for more Efficient Electronic Devices**" Department of Science and Technology, Govt. of India. October 2023. Link:https://pib.gov.in/PressReleasePage.aspx?PRID=2066046&fbclid=IwY2xjawGa26xleHRuA2FlbQIxMAABHZVucEP0t9snD5Qfp8-3JofcVCGirXfNtvOhmPstQ3YN4IF9MMUKRDF3Ag_aem_hjan5EXOiiGUem18inJ-6A

- News Title: "**Rare electron localization phenomena demonstrated, can expand scope of semiconductors**" Department of Science and Technology, Govt. of India. October 2023. Link:https://pib.gov.in/PressReleasePage.aspx?PRID=2049764&fbclid=IwY2xjawGa201leHRuA2FlbQIxMAABHZVucEP0t9snD5Qfp8-3JofcVCGirXfNtvOhmPstQ3YN4IF9MMUKRDF3Ag_aem_hjan5EXOiiGUem18inJ-6A

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Industry Interaction and Collaboration

- Trane Technologies, Bangalore.
- Stevin Rock and RAKNOR, UAE for the development of Radiative cooling paint (2020-Present)

PUBLICATIONS - Bivas Saha

Total: 85 Peer-reviewed Journal Publications and 4 Book Chapters.
Citations: 2723
h- index: 29.
i10- index: 55.

Google Scholar: https://scholar.google.com/citations?user=m0gvp6EAAAAJ&hl=en&oi=ao
Researcher ID: http://researchid.co/bivas-saha

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BOOK CHAPTERS

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2. S. Acharya, D. Rao and **B. Saha**, Book Name: Frontiers of Materials Science, Chapter Title: "Advances in Heterostructure Metamaterials for Solid-State Energy Conversion." ***World Scientific Publishing Co. Pte. Ltd. (2020).***

3. S. Acharya and **B. Saha**, Book Name: Coatings and Thin-Film Technologies, Chapter Title: "Epitaxial Nitride Thin Film and Heterostructures: From Hard Coating to Solid State Energy Conversion". ***Intech Open (2018)***.

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2. M. Garbrecht, I. McCarroll, V. Bhatia, A. Indiradevi Kamalasanan Pillai, L. Yang, J. M. Cairney, and **B. Saha**, *Diffusion along defects in nitride multilayer thin films as observed by state-of-the-art (S)/TEM and APT methods,* **EMC Kopenhagen 2020.**

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4. M. Garbrecht, I. McCarroll, L. Yang, **B. Saha**, and J. Cairney, *Correlative STEM-EDS and APT study of dopants in a metal-semiconductor nitride superlattice at the atomic scale*, **PICO 2019, Kasteel Vaalsbroek, Netherlands.**
5. M. Garbrecht**, B. Saha**, *Quantitative atomic scale analysis of diffusion phenomena in nitride multilayer thin films as observed by STEM*, **AMAS Melbourne, Australia, 2019.**
6. M. Garbrecht, **B. Saha**, *Tailoring of surface plasmon resonances in TiN/(Al,Sc)N superlattices for applications in energy-harvesting devices*, **IMC 2018, Sydney, Australia.**
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PRESENTATIONS (ORAL and POSTER)

1. D. Mukhopadhyay, and B. Saha, "Flexible Near-Infrared Plasmon-Polaritons and Electronic Transport in Scandium Nitride", IDEA conference, JNCASR, Bangalore, January 2026.
2. S. Manna and B. Saha, "Electron-Doped Rocksalt $Al_xSc_{1-x}N$: A Nitride-Based Alternative to Trans parent Conducting Oxides", IDEA workshop, JNCASR, Bangalore, January 2026.
3. R. Karanje and B. Saha,*"Beyond Spins: Orbital-Driven Ferromagnetism in Neodymium Nitride'*, IDEA workshop, JNCASR, Bangalore, January 2026.
4. D. Dadhich and B. Saha,*"Strain Tunable Plasmon-Polariton in Ultra-Thin Films'*, IDEA workshop, JNCASR, Bangalore, January 2026.
5. D. Mukhopadhyay, and B. Saha, "Flexible Near-Infrared Plasmon-Polaritons in Epitaxial Scandium Nitride Enabled by van der Waals Heteroepitaxy", IWAM, Ras Al Khaimah, UAE, 2025
6. D. Mukhopadhyay, and B. Saha, "Flexible Near-Infrared Plasmon-Polaritons and Electronic Transport in Scandium Nitride", ICFO-TIFRH Frontiers Research School, TIFR Hyderabad, September, 2025
7. D. Mukhopadhyay, and B. Saha, "Flexible Near-Infrared Plasmon-Polaritons and Electronic Transport in Scandium Nitride", SCOPOSIS conference, PRL Ahmedabad, December 2025.
8. S. Manna and B. Saha, "Electron-Doped Rocksalt $Al_xSc_{1-x}N$: A Nitride-Based Alternative to Transparent Conducting Oxides", Winter School, JNCASR, Bangalore, December 2025.
9. S. Manna and B. Saha, "Electron-Doped Rocksalt $Al_xSc_{1-x}N$: A Nitride-Based Alternative to Transparent Conducting Oxides", In-House Symposium, JNCASR, Bangalore, November 2025.
10. S. Manna and B. Saha, "Electron-Doped Rocksalt $Al_xSc_{1-x}N$: A Nitride-Based Alternative to Transparent Conducting Oxides", CPMU Day, JNCASR, Bangalore, September 2025.
11. S. Rudra and B. Saha, '*Strain-Induced Valence Band Splitting Enabling Above-Bandgap Exciton Photoluminescence in Epitaxial Mg_3N_2 Thin Film*' ICMAT 2025, Materials Research Society Singapore, 1st July 2025.
12. S. Rudra and B. Saha, '*Impact of Strain-Induced Band Ordering Reversal and Scattering Mechanisms on Hole Mobility in Scandium Nitride*' ICMAT 2025, Materials Research Society Singapore, 2nd July 2025.
13. S. Rudra and B. Saha, *Impact of Strain-Induced Band Ordering Reversal and Scattering Mechanisms on Hole Mobility in Scandium Nitride*', MRS Fall Meeting 2025, Boston, Massachusetts, USA, 2nd December 2025.
14. R. Karanje and B. Saha, *Beyond Spins: Orbital-Driven Ferromagnetism in Neodymium Nitride'*, Winter School, JNCASR, Bangalore, December 2025.

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16. D. Dadhich and B. Saha, *Strain Tunable Plasmon-Polariton in Ultra-Thin Films*, Winter School, JNCASR, Bangalore, December 2025.
17. D. Dadhich and B. Saha, *Strain Tunable Plasmon-Polariton in Ultra-Thin Films'*, CPMU Day, JNCASR, Bangalore, September 2025.
18. S. Rudra and B. Saha, *'Structural Stability and Spin-phonon Coupling Mediated Phonon Lifetime Anomalies in CrN'*, Annual Faculty Meeting and In-house Symposium, JNCASR, November 2024.
19. D. Mukhopadhyay, and B. Saha, "Flexible Near-Infrared Plasmon-Polaritons and Electronic Transport in Scandium Nitride", Winter School, JNCASR, Bangalore, December 2024.
20. D. Mukhopadhyay, and B. Saha, "Flexible Near-Infrared Plasmon-Polaritons and Electronic Transport in Scandium Nitride", QMAT, IIT Guwahati, December 2024.
21. S. Rudra and B. Saha, *'Impact of Band-ordering Reversal and Scattering Mechanisms on Carrier Mobility on Semiconducting Scandium Nitride'*, 7th Annual Conference on Quantum Condensed Matter (QMAT-2024), Indian Institute of Technology Guwahati, Assam, December 20-23, 2024.
22. S. Rudra and B. Saha, "*Reversal of Band-ordering Leads to High Hole Mobility in Strained p-type Scandium Nitride*' CPMU Unit Day, JNCASR, 14th September 2024.
23. D. Mukhopadhyay, and B. Saha, "Flexible Near-Infrared Plasmon-Polaritons and Electronic Transport in Scandium Nitride", In House Symposium, JNCASR, Bangalore, November 2024.
24. Talk: P. Das, "*Ultra-Emissive Polymer Nanocomposite Paint for Passive Daytime Radiative Cooling"*, International Workshop on Advanced Materials (IWAM), Ras-Al-Khaimah, UAE, February 20th, 2024.
25. Poster: P. Das & B. Saha, "*Photonics-Enabled Energy Efficient Cooling and Heating Technologies for a Sustainable Future"*, Industry – Academia Meet, JNCASR, September 22nd, 2023.
26. Talk: P. Das, "*Passive Daytime Radiative Cooling with Nanocomposite Metamaterial"*, CPMU Unit Day, JNCASR, September 9th, 2023.
27. B. Biswas, and B. Saha, "Magnetic-stress: A New Chauffeur of Metal-Insulator Transaction" 14th APCTP-IACS-Academy-JNCASR joint meeting, Bangalore, December 2023.
28. Poster: S. Rudra, B. Biswas, and B. Saha, "Strain-induced Tunning of Magneto-Structural Phase Transition in CrN from First-principles" International Winter School & RAM-90 conference, JNCASR, Bengaluru, December 2023.
29. Poster: D. Mukhopadhyay, B. Saha, "Surface scattering- dependent electronic transport in ultrathin scandium nitride" In-house symposium, JNCASR, November 2023
30. Poster: D. Mukhopadhyay, B. Saha, "Surface scattering- dependent electronic transport in ultrathin scandium nitride" CPMU day, JNCASR, September 2024

31. Talk: S. Rudra, D. Rao, S. Ponce, and B. Saha, "Reversal of Band-ordering Leads to High Hole Mobility in Strained p-type ScN" CPMU Day, JNCASR, Bengaluru, September 2024.
32. Talk: D. Rao, A. I. K. Pillai, M. Garbrecht and B. Saha, "Scandium Nitride as a Gateway III-Nitride Semiconductor for Optoelectronic Artificial Synaptic Devices" ICMAT Singapore, July 2023.
33. Talk: D. Rao, A. I. K. Pillai, M. Garbrecht and B. Saha, "Scandium Nitride as a Gateway III-Nitride Semiconductor for Optoelectronic Artificial Synaptic Devices" Neuromorphic Materials, Devices, Circuits and Systems, January 23, 2023.
34. Talk: Krishna Chand Maurya, Dheemahi Rao, Shashidhara Acharya, Pavithra Rao, Ashalatha Pillai, Shankar Kumar, Magnus Garbrecht, Bivas Saha, Infrared Plasmon and Phonon-Polaritons in Polar Semiconducting Scandium Nitride (ScN), Materials Research Society of US, Fall Meeting, 2022.
35. Poster: P. Das, B. Biswas, K.C. Maurya and B. Saha, "Refractory Epitaxial Transition Metal Nitrides as Solar Mirror: Alternatives to Silver", JNC Research Conference on Chemistry of Materials, JNCASR, October 20th, 2022.
36. Poster: Mehak Loyal, Bidesh Biswas, Prasanna Das, Krithika Upadhya and B. Saha, "Rare-earth semiconducting nitride thin film for emerging device applications" CPMU Unit Day, JNCASR, October 1st, 2022.
37. Talk: K. C. Maurya, B.Saha, "Light-Matter Interaction: Infrared Plasmon & Phonon Polariton in Polar Semiconducting Scandium-Nitride (ScN)" CPMU Day, 1st October 2022.
38. B. Biswas and B. Saha, "Lateral Cr_2N-CrN Metal-Semiconductor Heterostructure with Enhanced Thermoelectric Performance", International Winter School, JNCASR, December 6th, 2021.
39. B. Biswas, "Strain induced tunability of metal-insulator transition in Chromium Nitride thin films", CPMU Unit Day talk, September 4th, 2021.
40. Poster: P. Das, K.C. Maurya and B. Saha, "Near-UV-to-Near-IR Hyperbolic Photonic Dispersion in Epitaxial (Hf,Zr)N/ScN Metal/Semiconductor Superlattices" International Winter School, JNCASR, December 6th, 2021.
41. Talk: D. Rao, "MBE Deposited Scandium Nitride For Thermoelectric Applications", Virtual Conference on Thermoelectrics-2020 (VCT-2020), July 22nd, 2020.
42. Talk: K. C. Maurya, B.Saha, "Polaritons: The New Privileged Role of Refractory Transition Metals & its Nitride" In-House Symposium, 27th November 2020.
43. Poster: D. Rao and B. Saha, "Scandium nitride as a gateway material for optoelectronic artificial synaptic devices" In-house symposium, JNCASR, November 17th, 2021.
44. Poster: D. Rao, B. Biswas and B. Saha, "MBE deposited Scandium Nitride (ScN) for Thermoelectric Applications" International Winter School, JNCASR, December 4th, 2019.
45. Poster: B. Biswas, D. Rao and B. Saha, "High Thermoelectric Power Factor in MBE Deposited Scandium Nitride", JNC Annual Faculty Meeting and In-house Symposium, November 13, 2019.

46. Poster: S. Nayak, S. Acharya and B. Saha, "Schottky Barrier Height in Epitaxial Lattice-matched TiN/AlScN Metal/Semiconductor Superlattice Interfaces for Thermionic Energy Conversion." JNC Annual Faculty Meeting and In-house Symposium, November 13, 2019.
47. Poster: B. Biswas, D. Rao and B. Saha, "High Thermoelectric Power Factor in MBE Deposited Scandium Nitride", 15th JNC Conference on Chemistry of Materials, Thiruvananthapuram, Kerala, October 2019.
48. Poster: K. C. Maurya, D. Rao and B. Saha, "Refractory Plasmonics for Solar Energy conversion" Chemistry and Physics of Materials: Glorious Past and Exciting Future, JNCASR, Bangalore February 23, 2019.
49. Poster: S. Nayak, S. Acharya and B. Saha, "Schottky Barrier Height in Epitaxial Lattice-matched TiN/AlScN Metal/Semiconductor Superlattice Interfaces for Thermionic Energy Conversion." Chemistry and Physics of Materials: Glorious Past and Exciting Future, JNCASR, Bangalore February 23, 2019.
50. Poster: K. C. Maurya, B. Biswas and B. Saha, "Wave-vector Dependent Raman Scattering from Plasmon-LO phonon modes in *n*-type ScN" International Winter School, Jawaharlal Nehru Center for Advanced Scientific Research, Bangalore, India December 4th, 2018.
51. Poster: D. Rao, S. Acharya and B. Saha, "Plasmon Enhanced Solar Energy Conversion with Metal/Semiconductor Heterostructures." JNCASR Annual Faculty Meeting and In-house Symposium, Bangalore India, November 2018.
52. Poster: K. C. Mourya, B. Biswas and B. Saha, "Wave-vector Dependent Raman Scattering from Plasmon-LO phonon modes in *n*-type ScN" JNCASR Annual Faculty Meeting and In-house Symposium, Bangalore India, November 2018.
53. Poster: B. Saha**,** B. Osoba, T. J. K. Liu and J. Wu, Materials Engineering of Micro-relay Contact Surfaces for milli-Volt Switches. 5th Berkeley Symposium on Energy Efficient Electronic Systems and Steep Transistors Workshop, Berkeley, CA October 19th, 2017.
54. Poster: B. Saha**,** B. Osoba, T. J. K. Liu and J. Wu, Materials Engineering of Micro-relay Contact Surfaces for milli-Volt Switches. IEEE S^3S conference, San Francisco, CA October 17th, 2017.
55. Oral: B. Saha, B. Osoba, T. J. K. Liu and J. Wu, Sub-50 mV Nanoelectromechanical Relay Switches. NSF STC Energy Efficient Electronics Sciences Annual Review Meeting, Massachusetts Institute of Technology (MIT), Boston, MA, September 7th, 2017.
56. Poster: B. Saha, B. Osoba, T. J. K. Liu and J. Wu, Materials Engineering of Micro-relay Contact Surfaces for milli-Volt Switches. NSF STC Energy Efficient Electronics Sciences Annual Review Meeting, Massachusetts Institute of Technology (MIT), Boston, MA, September 7th, 2017.
57. Poster: B. Saha, "Metal/Semiconductor Superlattices: Development of an Elusive Heterostructure", 42nd Electronic Materials Symposium, Menlo Park, California, May 5th, 2017.
58. Oral: B. Saha, M. Garbrecht, and T. D. Sands, Defects in Epitaxial Metal/Semiconductor Superlattices, Materials Research Society (MRS) Fall Meeting, Boston, MA November 30, 2016.

59. Oral: B. Saha, A. Peschot, B. Osoba, T. J. K. Liu, and J. Wu, Engineering Adhesion Properties of Micro Relay Contacts Through Surface Engineering, Materials Research Society (MRS) Fall Meeting, Boston, MA December 1, 2016.

60. Poster: B. Saha, Yee Rui Koh, A. Shakouri and T. D. Sands, Phonon wave-effects in the thermal transport of epitaxial TiN/(Al,Sc)N metal/semiconductor superlattices, Materials Research Society (MRS) Fall Meeting, Boston, MA, November 29, 2016.

61. Poster: B. Saha, B. Osoba, T. J. K. Liu, and J. Wu, Contact Surface Material Engineering Toward millivolt Relays, IEEE S^3S conference, San Francisco, CA October 2016.

62. Oral and Poster: B. Saha, B. Osoba, L. Dougherty, J. Edgington, C. Qian, F. Niroui, J. H. Lang, V. Bulovic, T. J. K. Liu and J. Wu, Sub-50 mV NEM Relay enabled by Self-assembled Molecular Coating. NSF STC Energy Efficient Electronics Sciences Annual Review Meeting, UC Berkeley, CA, September 2016.

63. Poster: B. Saha, B. Osoba, T. J. K. Liu and J. Wu, Reduction of Adhesion Energy on Mirco Relay Contacts Through Surface Engineering, NSF STC Energy Efficient Electronics Sciences External Review Meeting, UC Berkeley, CA, January 2016.

64. Poster: B. Saha, B. Osoba, T. J. K. Liu and J. Wu, Advanced Materials Engineering for NEM Relays, NSF STC Energy Efficient Electronics Sciences Annual Review Meeting, Massachusetts Institute of Technology (MIT), Boston, MA, September 12th, 2015.

65. Poster: B. Saha and J. Wu, Disorder and Defects in Epitaxial Materials, Singapore-Berkeley Research Initiative for Sustainable Energy (SinBeRISE) Workshop, National University of Singapore (NTU), CREATE Towers, Singapore, July 28th, 2015.

66. Poster: B. Saha, "Metal/Semiconductor Superlattices …… at Last", Purdue University Prospective Future Faculty Workshop, West Lafayette, IN, March 2, 2015.

67. Oral: B. Saha, Yee Rui Koh, A. Shakouri and T. D. Sands, Effect of Period Thickness on the Cross-plane Thermal Transport of (Ti,W)N/(Al,Sc)N Metal/Dielectric Superlattices, International Thermoelectric Society, Nashville, TN, July 6-10, 2014.

68. Oral: B. Saha, Yee Rui Koh, A. Shakouri and T. D. Sands, Heat Conduction through (Ti,W)N/(Al,Sc)N Metal/Semiconductor Superlattices, Electronic Materials Conference, University of California, Santa Barbara, CA, June 2014.

69. Oral: B. Saha, Yee Rui Koh, A. Shakouri and T. D. Sands, Thermal transport in TiN/(Al,Sc)N metal/dielectric superlattices. Materials Research Society Spring Meeting, San Francisco, CA, USA, April 21-25, 2014.

70. Oral: B. Saha, E. Marinero and T. D. Sands, Electronic and optical properties of ScN and (Sc,Mn)N thin films deposited by dc-magnetron sputtering, American Physical Society (APS) March Meeting, Denver, CO, March 3-7, 2014.

71. Poster: B. Saha, S. Saber, E. Kvam, E. Stach, and T. D. Sands**,** Pseudomorphic stabilization of cubic $Al_xSc_{1-x}N$ with high Al concentration and large critical thickness on (001) MgO substrates with TiN as a seed layer, Materials Research Society (MRS) Fall Meeting, Boston, MA, USA, December 2-6, 2013. (Awarded best research presentation in the Fall MRS meeting and Nominated for the Best Poster Award).

72. Oral: B. Saha, G. V Naik, A. Boltasseva and T. D. Sands, TiN/(Al,Sc)N metal/dielectric superlattices as hyperbolic metamaterials in the visible range. Electronic Materials Conference, University of Notre Dame, IN, June 26-28, 2013.

73. Poster: B. Saha, T. D. Sands, TiN/(Al,Sc)N metal/dielectric superlattices as hyperbolic metamaterials in the visible range. School of Materials Engineering External Advisory Board Meeting, Purdue University, IN, April 25-26, 2013.

74. Oral: B. Saha, G. V Naik, A. Boltasseva and T. D. Sands, TiN/(Al,Sc)N metal/dielectric superlattices as hyperbolic metamaterials in the visible range. Materials Research Society Spring Meeting, San Francisco, CA April 1-5, 2013.

75. Poster: B. Saha, and T. D. Sands, TiN/(Al,Sc)N metal/dielectric superlattices as hyperbolic metamaterials in the visible range. SIGMA XI Graduate Student Research Awards Competition; Purdue University, IN, February 13, 2013. (Best Poster Award)

76. Poster: B. Saha, E. Marinero and T. D. Sands, Growth, characterization and optoelectronic properties of Mn-doped ScN. Brick Nanotechnology Center Annual Review Meeting, Purdue University, IN, October 10, 2012.

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