

EDUCATION

Ph.D.	Physics	IGP, Nanyang Technological University (NTU), Singapore	2023
Integrated M.Sc.	Physics	University of Hyderabad, Hyderabad, India	2018

PROFESSIONAL EXPERIENCE

Assistant Professor, Centre for Interdisciplinary & Convergent Tech, IIT Kharagpur	Apr. 2026 - Present
Ramanujan Faculty Fellow, School of Interdisciplinary Studies (SIDiS), IIT Madras	Jan. 2026 - Mar. 2026
Post-Doctoral Researcher, Division of Chemical Physics, Lund University, Sweden	Jan. 2023 - Jan. 2026
Research Assistant, School of Physical and Mathematical Sciences, NTU Singapore	Jul. 2022 - Dec 2022

SELECTED HONORS AND AWARDS

WACQT Post-Doctoral Research Fellowship, Lund, Sweden	2023-2024
Nanyang Technological University Research Scholarship, NTU Singapore	2018-2022
University Gold Medal, University of Hyderabad, India	2018
NTU-Indiacconnect Summer Research Fellowship, NTU Singapore	2017
Summer Research Fellowship, Indian Academy of Science, Bengaluru, India	2016

FUNDING HISTORY

PI, Start-up Research Grant (FSRG) , Sponsored Research & Industrial Consultancy Cell (SRIC), IIT-KGP	2026-2029
PI, ANRF-Ramanujan Fellowship , Anusandhan National Research Foundation (ANRF)	2026-2031
PI, Staff Travel grant , Dept of Chemistry, Lund University, Sweden	2024
PI, Travel grant for Young Researchers , The Royal Physiographic Society of Lund, Sweden.	2024

PUBLICATIONS

Peer-Reviewed Journal Papers

17. Deependra Jadoun, Victor Freixas, **Sankaran Ramesh**, Tönu Pullerits, Sergei Tretiak, Vladimir Chernyak, Upendra Harbola, Shaul Mukamel "[Instantaneous Detection of Quantum Coherences with Bright Entangled Beams in 2D Electronic Spectroscopy](#)", *Journal American Chemical Society*, (2026).
16. Yanmei He, Xinyi Cai, Rafael Araujo, Yibo Wang, **Sankaran Ramesh**, Junsheng Chen, Muyi Zhang, Tomas Edvinsson, Feng Gao, Tönu Pullerits, "[Dimensionality-dependent electronic and vibrational dynamics in low-dimensional organic-inorganic tin halides](#)", *Nature Communications*, 17, 758 (2025).
15. **Sankaran Ramesh**, Yonghong Wang, Pavel Chabera, Rafael Araujo, Mustafa Aboulsaad, Tomas Edvinsson, Feng Gao, Tönu Pullerits, "[Coherent Phonons, Localization and Slow Polaron Formation in Lead-free Gold Perovskite](#)", *Advanced Optical Materials*, 13, 10, 2402882 (2025).
14. **Sankaran Ramesh**, Minjun Feng, Tomoki Furuhashi and Tze Chien Sum, "[Enhancing Two-Dimensional Electronic Spectroscopy For Layered Halide Perovskites](#)", *ACS Photonics*, 10, 12, pp. 4456 - 4464 (2023)
13. Tomoki Furuhashi, Anil Kanwat, **Sankaran Ramesh**, Nripan Mathews and Tze Chien Sum, "[Unveiling the Impact of Organic Spacer Cations on Auger Recombination in Ruddlesden-Popper Perovskites](#)", *Advanced Optical Materials*, 12, 8, 2301230 (2023)
12. Jianhui Fu, **Sankaran Ramesh**, Jia Wei Melvin Lim and Tze Chien Sum, "[Carriers, Quasi-particles and Collective Excitations in Halide Perovskites](#)" *Chemical Reviews*, 123, 13, 8154 (2023)
11. Jian Qing, **Sankaran Ramesh**, Xiao-Ke Liu, Heyong Wang, Hongling Yu, Chaoyang Kuang, et al. "[Spacer cation engineering in Ruddlesden-Popper perovskites for efficient red light-emitting diodes with recommendation 2020 color coordinates](#)," *Applied Surface Science*, 616, 156454 (2023)
10. Jayanta Kumar Mishra, Natalia Yantara, Anil Kanwat, Tomoki Furuhashi, **Sankaran Ramesh**, Teddy Salim, et al. (2022) "[Defect Passivation Using a Phosphonic Acid Surface Modifier for Efficient RP Perovskite Blue-Light-Emitting Diodes](#)," *ACS Applied Materials Interfaces*, 14, 30, pp. 34238 (2022)

9. **Sankaran Ramesh**, David Giovanni, Marcello Righetto, Senyun Ye, Elisa Fresch, Yue Wang, et al. "[Tailoring the Energy Manifold of Quasi-Two-Dimensional Perovskites for Efficient Carrier Extraction](#)," *Advanced Energy Materials*, 12, 10, 2103556 (2022)
8. Jian Qing, **Sankaran Ramesh**, Qiang Xu, Xiao-Ke Liu, Heyong Wang, Zhongcheng Yuan, et al. "[Spacer Cation Alloying in Ruddlesden–Popper Perovskites for Efficient Red Light-Emitting Diodes with Precisely Tunable Wavelengths](#)," *Advanced Materials*, 33, 49, 2104381 (2021)
7. Jianhui Fu, Mingjie Li, Ankur Solanki, Qiang Xu, Yulia Lekina, **Sankaran Ramesh**, et al. "[Electronic States Modulation by Coherent Optical Phonons in 2D Halide Perovskites](#)," *Advanced Materials*, 33, 11, 2006233 (2021)
6. David Giovanni*, **Sankaran Ramesh***, Marcello Righetto, Jia Wei Melvin Lim, Qiannan Zhang, Yue Wang, et al. "[The Physics of Interlayer Exciton Delocalization in Ruddlesden–Popper Lead Halide Perovskites](#)," *Nano Letters*, 21, 1, pp. 405 - 413 (2021) [* = Equal Contribution]
5. David Giovanni, Marcello Righetto, Qiannan Zhang, Jia Wei Melvin Lim, **Sankaran Ramesh** and Tze Chien Sum. "[The Origins of the long-range exciton diffusion in perovskite nanocrystal films: photon recycling vs exciton hopping](#)," *Light: Science & Applications*, 10, 1, 2 (2021)
4. Marcello Righetto, Swee Sien Lim, David Giovanni, Jia Wei Melvin Lim, Qiannan Zhang, **Sankaran Ramesh**, et al. "[Hot carriers perspective on the nature of traps in perovskites](#)," *Nature Communications*, 11, 1, 2712 (2020)
3. Abhishek Kumar, Ankur Solanki, Manukumara Manjappa, **Sankaran Ramesh**, Yogesh Kumar Srivastava, Piyush Agarwal, et al. "[Excitons in 2D perovskites for ultrafast terahertz photonic devices](#)," *Science Advances*, 6, 8, eaax8821 (2020)
2. Benny Febriansyah, David Giovanni, **Sankaran Ramesh**, Teck Ming Koh, Yongxin Li, Tze Chien Sum, et al. "[Inducing formation of a corrugated, white-light emitting 2D lead-bromide perovskite via subtle changes in templating cation](#)," *Journal of Materials Chemistry C*, 8, 3, pp. 889 - 893 (2020)
1. KT Jacob & **Sankaran Ramesh** "[Thermodynamic Stability of \$\text{LuRhO}_3\$ in a Photoelectrochemical Cell](#)," *Journal of Alloys and Compounds*, 695, pp. 1891 - 1899 (2017)

Manuscripts Under Review

3. **Sankaran Ramesh**, Prasenjit Mandal, Rafael Araujo, Jakob Thyr, Pratik Bhagwat, Yong Li, Tomas Edvinsson, Tõnu Pullerits, Dmitry Baranov "[Phonon-Mediated Chirality Transfer from Organic Cation to Inorganic lattice in Hybrid Perovskites](#)"
2. Jeong Hyun Han*, **Sankaran Ramesh***, Jaeyeon Jo, Pavel Chabera, Ryeong Myeong Kim, Sung Hoon Cho, In Han Ha, Amitav Sahu, Yoonsang Tak, Jiawei Lv, Miyoung Kim, Ki Tae Nam, Tõnu Pullerits, "[Helicity-Resolved Spatiotemporal Mapping of Chiral Plexcitons in Helicoids](#)" [* - equal contribution]
1. Albin Hedse, **Sankaran Ramesh**, Luis Matheis, Sebastian Gstir, Andreas Wacker, Gregor Weihs, Robert Keil, Qi Shi, Amitav Sahu, Tõnu Pullerits, "[Franson Interferometric Bounds on Entangled Two-Photon Absorption](#)"

Theses

- Ph.D.: "[Coherent Energy and Charge Carrier Dynamics in Quasi-2D Lead Halide Perovskites](#)"
Nanyang Technological University, Singapore 2023
- Masters Degree in Physics: "Electron-phonon interactions in a polar semiconductor quantum wire"
University of Hyderabad, India 2018

TEACHING AND SUPERVISION EXPERIENCE

- Teaching Experience
 - Electromagnetism and Optics Lab (PH39205), Dept of Physics, IIT-KGP Fall 2026
 - Seminar(AT69145), Centre for Interdisciplinary and Convergent Tech, IIT-KGP Fall 2026

- Teaching Assistant, School of Physical and Mathematical Sciences, NTU Singapore 2020-2022
Nuclear Physics (PH4408) 4th-Year Undergraduate Course
- Teaching Assistant, School of Physical and Mathematical Sciences, NTU Singapore 2018-2020
3rd-Year Undergraduate Physics Lab (PH3199)
- **Certified** as Teaching Assistant by Teaching, Learning and Pedagogy Dept, NTU Singapore 2018

• Thesis Supervision

- Mr. Pratik Bhagwat, Masters' Degree Thesis Project
Time-resolved Exciton and Spin Dynamics in Chiral 2D Lead Halide Jan 2025 - Sep 2025

PROFESSIONAL ACTIVITIES AND OUTREACH

- Peer-Reviewer for Multi-disciplinary, Physics and Chemistry Journals: 2024-Present
 - Advanced Science ○ Advanced Optical Materials
 - Small ○ The Journal of Physical Chemistry Letters
 - ACS Omega
- Project Manager at Graduate Student Club, SPMS, NTU Singapore. 2019-2022
- Co-ordinator, Engaging Talks on Highly Exciting Research (ETHER) at School of Physics, University of Hyderabad, India. 2017-2018

TECHNICAL SKILLS

- Optical Parametric Amplifiers
- Fiber optics
- MATLAB
- Femtosecond lasers
- Hollow-Core Fibers
- LabVIEW
- Ultrafast Spectroscopy
- Nanoparticle Synthesis
- Python

PRESENTATIONS & TALKS

Invited Talks & Research Seminars

9. "Left, Right, and Ultrafast: Chiral Dynamics in Gold Nanoparticles and Perovskite Lattices"
STEM Graduate Colloquium, Institute of Advanced Study (IAS), NTU Singapore 29 June 2026
8. "Optical Investigation of Charge-Lattice Interactions in Materials"
Department of Physics, IIT Roorkee, India 2 September 2025
7. "Slow Polaron Formation in Gold Perovskite Informed by Coherent Phonons"
Jawaharlal Nehru Center for Advanced Scientific Research (JNCASR), Bengaluru, India 12 February 2025
6. "The Story of Quantum Entanglement", *Research and Development Series Online Lecture*
St John's College, University of Kerala, India 29 July 2024
5. "Towards Quantum Control of Light & Matter: Unravelling Exciton Transfer in 2D Perovskites"
Department of Physics, IIT Madras, India 13 March 2024
4. "Towards Quantum Control of Light & Matter: Unravelling Exciton Transfer in 2D Perovskites"
Department of Physics, IIT Delhi, India 7 March 2024
3. "Spectroscopy with entangled photons", *Quantum in Lund (QIL) Meeting*
Department of Physics, Lund University, Sweden 24 November 2023
2. "Towards Probing Matter with Quantum Light", *Photons Topical Meeting*
NanoLund, Lund University, Sweden 20 October 2023
1. "Exciton Delocalization in Layered Halide Perovskites", *Alumni Seminar*
School of Physics, University of Hyderabad, India 17 August 2022

Conference Presentations

4. "Quantum Coherences in Perovskite Semiconductors Probed with Light Pulses"
NanoLund Annual Meeting Lund, Sweden October 2025
3. "Electronic Dynamics and Coherent Phonons in Gold-Bromide Perovskite"
Nordic Baltic Femtochemistry Conference, Tartu, Estonia July 2024
2. "Energy Cascade in Ruddlesden-Popper Lead Halide Perovskites: Exciton Delocalization and the Role of Organic Spacer"
MRS Spring Meeting 2022, Honolulu, Hawaii, USA May 2022
1. "Exciton Delocalization Across the Organic Spacer: Origin of Ultrafast Energy Funnelling in Ruddlesden-Popper Perovskites"
NanoGe 13th International Conference on Hybrid and Organic Photovoltaics(HOPV21) May 2021