Curriculum Vitae of

Pratap Vishnoi, Ph.D.

Assistant Professor
New Chemistry Unit, International Centre for Materials Science &
School of Advanced Materials
Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR),
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ACADEMIC POSITIONS

Assistant Professor, June 2023 onward
Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR), Bangalore

Ramanujan Faculty Fellow, April 2021 – June 2023
Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR), Bangalore

Postdoctoral Researcher, July 2019 – February 2021
University of California, Santa Barbara (USA)
Advisors: Professor Ram Seshadri & Professor Sir Anthony K Cheetham FRS

Postdoctoral Researcher, Jan 2016 – July 2019
Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR), Bangalore
Advisor: Bharat Ratna Professor C N R Rao FRS

Research Associate, Aug 2014 – Jan 2016
Indian Institute of Technology Bombay, Mumbai. *Advisor*: Professor R. Murugavel

EDUCATION

Ph. D., Chemistry (2008-2014)
Indian Institute of Technology Bombay (IIT Bombay), Mumbai. *Advisor*: Professor R. Murugavel
PhD thesis titled: Chemistry of C_3-Symmetric Ligand Systems and their Applications in Synthesis of Molecular Chemo-Sensors, Covalent-Organic Frameworks and Metal-Organic Frameworks

Master of Science, Chemistry (2006-2008)
Department of Chemistry, Rajasthan University, Jaipur (India)

Bachelor of Science (2003-2006)
MLB Govt College-Nokha, Maharaja Ganga Singh University, Bikaner (India)

RESEARCH INTERESTS

- Hybrid (organic-inorganic) halide perovskites
- Magnetic halide perovskites
- Semiconducting halide perovskites
- Phase change materials (PCM)
- Layered nanomaterials

AWARDS, RECOGNITIONS & FELLOWSHIPS

- *Emerging Investigator*, Chemical Communication, RSC (2025)
- *Sheikh Saqr Career Award Fellowship* (2025)
- *Emerging Leader*, 15th Annual International Workshop on Advanced Materials, UAE (2024)
- *Emerging Early Career Researcher*, Chemistry – An Asian Journal, Asian Chemical Editorial Society (2023)
- *Emerging Investigator*, Journal of Materials Chemistry A, RSC (2022)
- *Ramanujan Fellowship*, SERB, Govt. of India (2021)
- *DST-Nano Mission Postdoctoral Fellowship in Nano Science and Technology* (*Overseas*) (2019)
- *DST-Nano Mission Postdoctoral Fellowship in Nano Science and Technology* (*National*) (2016)
- *Poster presentation award in Chemical Frontiers-Goa* (two times: 2014, 2016)
- *Poster presentation award in 13th JNC Research Conference on Chemistry of Materials* (2017)
- *Poster presentation award in 10th Bengaluru INDIA NANO* (2018)
- *CSIR Junior and Senior Research Fellowships for PhD* (2008-2013)
- *Graduate Aptitude Test in Engineering (GATE)*, Chemical Science, AIR -131 (2008)

EXTRAMURAL RESEARCH FUNDING*

No.	Title of the project	Funder	Duration	Amount in ₹
1	Ramanujan Fellowship	SERB	2021-2026	119 Lakhs*
2	Compositionally and Structurally Tunable Multifunctional Transition Metal Halide Perovskites (CRG Project)	SERB	2022-2025	62 Lakhs*
3	Sialate (-Si-O-A1-O-) Based Geopolymeric Materials	Sheikh Saqr Lab.	2025-2026	10 Lakhs

*Ramanujan Fellowship was availed from April 2021 to June 2023, prior to my appointment as an Assistant Professor at JNCASR Bangalore.
*JNCASR contributed an additional equipment grant of ₹ 49 Lakhs, bringing the total grant to ₹ 1.11 Crore

ACADEMIC AND ADMINISTRATIVE ACTIVITIES IN JNCASR

- Hostel Warden, JNCASR (2025 onward)
- Chair, Day Care Facility (2025 onward)
- Convenor, Project Oriented Chemistry Education (POCE) (2025 onward)
- Member of National Science Day Organizing Committee, JNCASR (3 times: 2024, 2025, 2026)
- Member, Dining Hall Committee (2023 onward)
- Convener, New Chemistry Unit Day Symposium, JNCASR (2023)
- Co-convener, New Chemistry Unit Day Symposium, JNCASR (2 times: 2022, 2024)
- Seminar Course Coordinator (JCQ 209), New Chemistry Unit, JNCASR (2023 onward)
- Teaching JCL-315 course to MSc, Int. PhD and PhD students at JNCASR (2021 onward) *Course name*: Recent Trends in Inorganic and Nanomaterials
- Teaching POCE students, JNCASR (summer 2023, 2024, 2025). *Course name*: Coordination chemistry
- Represented JNCASR Chemistry Outreach show at the KREIS Science Expo (Govt of Karnataka), Palace ground Bangalore (2023)

STUDENT MENTORING

PhD students supervised:

1. Gokul M. 2025 - to date
2. Parthapratim Nath 2024 - to date
3. Priyanka Kanaujiya 2023 - to date
4. Vishwajith N. S. 2022 - to date
5. Devesh Chandra Binwal* 2021-2025 (Degree awarded)
6. Aditi Sarswat* 2021-2025 (Degree awarded)

*Jointly supervised with Prof. C. N. R. Rao

MS thesis students supervised (as part of Integrated PhD degree):

1. Akshay Popat Tambavekar 2023 - to date
2. Hari Prakash G. 2024 - to date
3. Vishwajith N. S. 2022 - 2024

M.Sc. students supervised:

1. Meghna Roy 2026
2. Neha Rout 2025
3. Devanshu Lalwani 2025
4. Kausik Kundu 2024-2025
5. Mridul Krishna Sharma 2023-2024
6. Sudipa Aich 2023

Postdocs supervised:

1. Dr. Radhamadhab Das 2025 - to date
2. Dr. Devesh Binwal (jointly with Prof. C. N. R. Rao) 2025 - to date
3. Dr. Aditi Sarswat (jointly with Prof. C. N. R. Rao) 2025 - to date
4. Dr. Prashurya Pritam Mudoi (2021-2022) – Currently Asst. Prof. at Dibrugarh University
5. Dr. Khyati Anand (2023) – Currently postdoc at PNNL, USA
6. Dr. Chandan (2024-2025) – Currently Asst. Prof., Amity University Bangalore

Research fellows supervised (under externally funded projects):

1. Devika Santosh E (2025-onward)
2. K. V. Saurav (2021-2023) – Currently pursuing PhD at Manchester University, UK
3. Ajay J Prasad (2023-2025) – Currently PhD student at Universitat Autònoma de Barcelona, Spain

Summer interns supervised: Isha Jain (2023), Vishwajith N. S. (2023), M Shreeraksha (2024), Arpitha R (2024), Nithin Kumar S (2024), Tabitha Grace (2025), Bhupendra Singh (2025), Devanshu Lalwani (2025)

Graduate Research Interns (GRIP scheme): Grace Evanglin Gudiwada 2025

MEMBERSHIP OF PROFESSIONAL SOCIETIES

American Chemical Society (ACS), Royal Society of Chemistry (RSC), Chemical Research Society of India (CRSI), Materials Research Society of India (MRSI), Society for Materials Chemistry (SMC)

INVITED TALKS

Sr. No.	Title of the talk	Conference name & Organizer	Year
1.	***Plenary speaker*:** Two-Dimensional Materials for Energy Applications	Emerging Trends in Nanoscience and Nanotechnology: From Fundamentals to Applications, Government First Grade College, Holalkere (Karnataka)	2026
2.	Dion-Jacobson type Hybrid Two-Dimensional Gold Iodide Double Perovskites as Near-Infrared Emitters	Modern Trends in Inorganic Chemistry (MTIC), Delhi University	2025
3.	***Expert talk***: Two-Dimensional Materials for Energy Applications	Department of Chemistry, B.M S. College of Engineering Bangalore	2025
4.	Linking Structural Dimensionality, Spin-orbit Coupling and Magnetism in Heavy Transition-Metal Halide Double Perovskites	Spins in Molecular Systems (SIMS) Jointly by IIT Kharagpur & S.N. Bose National Centre for Basic Sciences (SNBNCBS)	2025
5.	Direct Bandgap Hybrid In(III) Halide Double Perovskites with High Photoluminescence	Annual Faculty Meeting and In-House Symposium, JNCASR Bangalore	2025
6.	From Visible to Near Infrared: Emission Engineering in Lead-free Low-Dimensional Hybrid Metal Halide Perovskites	2nd International Conference on Functional Materials for Future Technology (ICFMFT-2025) Vellore Institute of Technology (VIT), Vellore	2025
7.	Dion-Jacobson type 2D Gold Iodide Double Perovskites as Near-Infrared Emitters	HyPe 2025, IACS Kolkata	2025
8.	Transition-Metal Halide Double Perovskites: Design, Structural Dimensionality, and Magnetism	Department talk, SN Bose National Institute, Kolkata	2025
9.	Expanding the horizon of halide perovskites beyond solar cell (*online*)	Workshop on Advances in Materials Research, Innovation and Technology (AMRIT), NIT Bhopal	2025
10.	Low-dimensional hybrid halide double perovskites for magnetic and energy applications	International Conference on Chemistry for Sustainability (ICCS-2025), IIT Hyderabad	2025
11.	***Keynote:*** Hybrid halide double perovskites with 1D chain and 2D checkerboard structures for magnetic and energy applications	Advances in Functional Materials for Energy and Catalytic Applications (AFMECA- 2025), NIT Karnataka	2025
12.	Low-dimensional magnetic metal halide double perovskites with 1-D chain and 2-D checkerboard-like structures	Chemical Science 2024 Symposium, JNCASR Bangalore	2024

13.	Recent developments in magnetic halide perovskites of heavy transition metals	International Workshop on Advanced Materials (IWAM), Ras Al Khamiah Center for Advanced Materials (RAK CAM), UAE	2024
14.	Recent developments in magnetic halide perovskites of heavy transition metals	Advances in Chemical and Applied Sciences for Sustainable Development (ACASSD), JECRC University, Jaipur	2024
15.	Halide perovskites as magnetic materials	International Conference on Semiconductor Technologies - Materials to Chips, Amity University, Noida	2024
16.	Tailoring magnetic exchange and optical absorption by alloying Cl and Br in 1-D double perovskite-like halides $(CH_3NH_3)_2NaMoCl_{(6-x)}Br_x$	International Conference on Metal Halide Perovskite (HyPe 2024), NISER Bhubaneswar	2024
17.	***Keynote speaker:*** Hybrid halide perovskites for applications in optoelectronics and beyond	1st International Conference on New Frontiers in Materials for Engineering Applications, Ballari Institute of Technology & Management, Ballari	2024
18.	A molecular approach to halide double perovskite materials (***online***)	Frontiers in Materials Sciences: Challenges and Opportunities, Tezpur University	2024
19.	Hybrid halide perovskites of Main group metals and beyond	3rd International Conference on Main-group Molecules to Materials (MMM III), IIT Hyderabad and University of Hyderabad	2023
20.	Hybrid halide perovskites for applications in optoelectronics and beyond	Global Trends in Sustainable Technology and its Applications in Applied Sciences (GTSTAAS-2023), REVA University Bangalore	2023
21.	Transition-metal halide perovskites	Kaleidoscope 2023: A Discussion Meeting in Chemistry, IIT Bombay and TIFR Mumbai	2023
22.	Halide double perovskites of open-shell transition metals	International Winter School-2022, JNCSAR Bangalore	2022
23.	Hybrid halide double perovskites beyond main group metals	Crystal Engineering: From Molecule to Crystal [CE:FMC2022], Kashmir University and IISER Kolkata	2022
24.	Role of A-cation in structural dimensionality & crystal growth of halide perovskites	In-House SAMat Meeting, School of Advanced Materials, JNCASR	2022
25.	Hybrid lead halide perovskites and related congeners	Organic-Inorganic Hybrid Materials (OIHM-2021), NIT Surat	2021
26.	Ruthenium halide double perovskites (***online***)	AKC 75 Symposium, Nankai University, China	2021
27.	Chemical control on structural dimensionality in ruthenium halide double perovskites	Annual Faculty Meeting and In-House Symposium, JNCSAR Bangalore	2021
28.	Ruthenium halide double perovskites	NCU Day Symposium, JNCSAR Bangalore	2021
29.	***National webinar:*** Two-dimensional materials for diverse applications	Cambridge Institute of Technology, Bangalore	2020

30.	Phosphorene and MoS_2/$MoSe_2$: synthesis, chemical functionalization and their enhanced H_2 production activity	Departmental Seminar Chemistry Department, IIT Bombay	2019

CONTRIBUTED TALKS

1.	Double perovskite halides of transition metals	Materials for Humanity-22, National University of Singapore	2022
2.	Ambient stable phosphorenes and covalently linked phosphorene-MoX_2 (X = S or Se) nanocomposites with enhanced H_2 evolution (*online*)	MRS Spring/Fall Meeting & Exhibit, Virtual	2020
3.	Structural diversity and magnetic properties of hybrid ruthenium halide perovskites and related compounds (*online*)	ACS Fall 2020 Virtual Meeting & Expo, Virtual	2020
4.	Arsenene nanosheets and quantum dots	International Conference on Nano Science and Technology (ICONSAT), CeNS, Bangalore	2018
5.	Doping phosphorene by holes and electrons through molecular charge transfer	13th JNC Research Conference on Chemistry of Materials, JNCASR, Bangalore	2017
6.	Covalent functionalization of nanosheets of MoS_2 and $MoSe_2$ by substituted benzenes and other organic molecules	Chemical Frontiers, Goa, IIT Bombay & JNCASR Bangalore	2016
7.	Triphenylbenzene based fluorescent sensors for polynitroaromatic compounds and fluoride ions	Chemical Frontiers, Goa, IIT Bombay & JNCASR Bangalore	2014
8.	1,3,5-Tris(4'-aminophenyl)benzene as a supramolecular sensor for polynitroaromatics; solid and solution phase studies	In-house Symposium-2013, Department of Chemistry, IIT Bombay	2013
9.	Designs for new metal- and covalent-organic Frameworks	In-house Symposium-2011, Department of Chemistry, IIT Bombay	2021

SCIENCE POPULARIZATION:

Having been born and brought up in the desert region of western Rajasthan, wherein access to quality education is often constrained by geographical and financial challenges, I have a strong desire to popularize science by conducting outreach programs in schools and colleges in service to society, particularly underprivileged students in regions with limited access to quality education. Since 2021, I have been actively contributing as a resource person in educational and outreach activities tailored to school/college students, teachers, national programs, and funding-agency language. In addition, I have coordinated several outreach programs organized by JNCASR. My outreach programs aim to introduce chemistry through simple experiments and models, fostering a passion for science among young learners. To date, I have delivered more than 25 programs reaching 4,000+ students, and several hundred science teachers across 5 Indian states. Below is a list of venues where he has conducted programs, along with glimpses from some of these events:

1. Himalayan Gram Vikas Samiti Gangolihat, Uttarakhand
2. Govt Girls School Champawat, Uttarakhand
3. Vivekanand Vidhya Mandir Inter College Pithoragarh, Uttarakhand
4. Government Inter College Lohaghat, Uttarakhand
5. PM Shri Jawahar Navodaya Vidyalaya, Leh, Ladakh
6. Army Public School, Jaisalmer, Rajasthan
7. PM Shri Jawahar Navodaya Vidyalaya, Bikaner, Rajasthan
8. SDM College of Arts, Science and Commerce Honnavar, Karnataka
9. Centre for Entrepreneurship Development of Karnataka (CEDOK), Govt. of Karnataka, Dharwad
10. Sagar Science Forum, Sagar, Karnataka
11. CNR Rao Education Foundation, JNCASR Bangalore
12. School Chandan at Laxmeshwar, Hubli, Karnataka

RESEARCH HIGHLIGHTS/NEWS

- Hybrid ruthenium halide perovskites by ChemistryViews, The Magazine of Chemistry Europe

- Scientists advance our understanding of structural transitions in hybrid perovskites for renewable energy generation by Press Information Bureau (Ministry of Science & Technology; Department of Science & Technology, Govt. of India)

PUBLICATIONS, BOOK CHAPTERS, PATENTS

Articles published 61
Book chapters 2
Citations (google scholar) 1800+ **Google Scholar Weblink**
H-index 23
Patent 1 Indian patent filled

Research Publications:

In press, or submitted:

1. *Investigation of Magnetic and Structural Transitions in Hybrid Molybdenum(III) 2D Halide Double Perovskites,* D. C. Binwal, K. Anand, A. Bhui, K. Biswas, **P. Vishnoi***, *Under review*

2. Halide-Alloying Driven Bandgap Tuning and Antimony-Activated Emission of Zero-Dimensional $(CH_3NH_3)_4InX_7$ (X = Cl, Cl/Br, Br, Br/I) Indium Halides, A. P. Tambavekar, A. J. Prasad, P. Nath, **P. Vishnoi***, *Under revision*

3. 1T-Rich MoS_2 and its Enhanced Hydrogen Evolution Reaction (HER) Activity by Functionalization with Organic Ammonium Cations, K. Kundu, D. C. Binwal, **P. Vishnoi***, C. N. R. Rao*, *Under review*

Appeared:

61. *One-dimensional magnetic halide double perovskites $[N(CH_3)_4]_2M^IMoCl_6$ (M^I = Na, Ag) with large A-site cation*, D. C. Binwal, **P. Vishnoi***, *Chem. Commun.*, **2025**, **61**, 18352-18355.

60. *Tuning Phase Stability and Band Gap in Vacancy-ordered Double Perovskites $Rb_{(2-x)}Cs_xSnI_6$ through Variations in A-Site Cation*, R. Chandan, N. S. Vishwajith, K. Anand, D. N. Singh, **P. Vishnoi***, *Chem. – Asian J.*, **2025**, e00762.

59. *Vacancy-Ordered Hybrid Two-Dimensional Bi(III) Iodides with (100)-Oriented Dion-Jacobson Perovskite-related Structures,* A. Saraswat, D. Rao, A. K. Gupta, B. Saha, G. S. Gautam, **P. Vishnoi***, *Inorg. Chem.*, **2025**, *64*, 10279-10289.

58. *Vacancy Ordered Double Perovskites-$[N(CH_3)_4]_2SnX_6$ (X = Cl, Br, I): Thermal Phase Transition and Wide Range Optical Absorption,* N. S. Vishwajith, A. J. Prasad, D. N. Singh, **P. Vishnoi***, *Chem. – Asian J.*, **2025**, 20, *e202401483*.

57. *Mixed Metal Halide Perovskite $CsPb_{1-x}Sn_xBr_3$ Quantum Dots: Insight into Photophysics from Photoblinking Studies,* Anusha, A. Yadav, **P. Vishnoi**, D. K. Sharma*, *Nanoscale*, **2025**, *17*, 5150–5160.

56. *One-Dimensional Indium(III)-Halide Double Perovskites $(CH_3NH_3)_2NaInX_6$ (X = Cl, Br) and their Antimony(III)-Induced High Photoluminescence,* A. J. Prasad, M. Sharma, M. Shreeraksha, N. S. Vishwajith, S. K. Pati, **P. Vishnoi***, *J. Phys. Chem. C*, **2025**, *129*, 1293–1303.

55. *Tailorable Magnetic Exchange and Optical Absorption in 1-D Double Perovskite-like Halides $(CH_3NH_3)_2NaMoCl_{(6-x)}Br_x$,* D. C. Binwal, K. Anand, M. Sharma, K. V. Saurav, S. K. Pati, **P. Vishnoi***, *Chem. Mater.*, **2024**, 36, 7719–7730.

54. *0-D and 1-D Perovskite-like Hybrid Bismuth(III) Iodides,* A. Saraswat, **P. Vishnoi***, *Chem. – An Asian J.*, **2024**, 19, e202400048.

53. *$[NH_3(CH_2)_4NH_3]SnX_4$ (X = Br, I): Dion-Jacobson type 2-D Perovskites with Short Interlayer Spacing,* N. S. Vishwajith, M. K. Sharma, I. Jain, **P. Vishnoi***, *Dalton Trans.*, **2024**, *53*, 2465–2470.

52. *Conformational Studies of β-Azapeptoid Foldamers: A New Class of Peptidomimetics with Confined Dihedrals,* Anshulata, **P. Vishnoi**, B. K. Sarma*, *Chem – Eur. J.*, **2024**, *30*, e202303330.

51. *Temperature and Pressure Induced Structural Transitions of Lead Iodide Perovskites,* **P. Vishnoi,*** C. N. R. Rao*, *J. Mater. Chem. A*, **2024**, *12*, 19–37.

50. *Hybrid Iodide Perovskites of Divalent Alkaline Earth and Lanthanide Elements,* G. T. Kent, E. Zhuang, K. R. Albanese, A. Zohar, E. Morgan, A. Kallistova, L. Kautzsch, A. A. Mikhailovsky, **P. Vishnoi**, R. Seshadri* A. K. Cheetham*, *J. Am. Chem. Soc.*, **2023**, *145*, 27850–27856.

49. *Elusive Double Perovskite Iodides: Structural, Optical, and Magnetic Properties,* G. T. Kent, E. Morgan, K. R. Albanese, A. Kallistova, A. Brumberg, L. Kautzsch, G. Wu, **P. Vishnoi**, R. Seshadri* A. K. Cheetham*, *Angew. Chem. Int. Ed.*, **2023**, *60*, e202306000.

48. *Synergistic $n \rightarrow \pi^*$ and $n_N \rightarrow \pi^*_{Ar}$ interactions in C-terminal modified prolines: effect on Xaa–Pro* cis/trans *equilibrium,* J. K. Rai Deka, D. Borah, P. Das, B. Sahariah, **P. Vishnoi,** B. K. Sarma*, *Chem. Comm.*, **2023,** *59,* 6080–6083.

47. *Sidechain-Backbone Tetrel Bonding Interactions Provide a General Mechanism for trans-Peptoid Stabilization,* K. Baruah, D. Kalita, B. Sahariah, J. K. Rai Deka, **P. Vishnoi**, B. K. Sarma*, *Chem. – Eur. J.*, **2023**, *29*, e202300178.

46. *Molybdenum Chloride Double Perovskites: Dimensionality Control of Optical and Magnetic Properties,* D. C. Binwal, P. P. Mudoi, D. P. Panda, **P. Vishnoi*,** *Chemical Science*, **2023,** *14,* 3982–3989.

45. *Chemically Functionalized Phosphorenes and their Use in the Water Splitting Reaction*, **P. Vishnoi,*** A. Saraswat, C. N. R. Rao,* *J. Mater. Chem. A,* **2022,** *10*, 19534–19551.

44. *Hybrid Layered Double Perovskite Halides of Transition Metals*, **P. Vishnoi,** J. L. Zuo, X. Li, D. C. Binwal, K. E. Wyckoff, L. Mao, L. Kautzsch, G. Wu, S. D. Wilson, M. G. Kanatzidis, R. Seshadri,* A. K. Cheetham*, *J. Am. Chem. Soc.*, **2022**, *144*, 6661–6666.

43. *The Renaissance of Functional Hybrid Transition Metal Halides,* L. Mao,* J. Chen, **P. Vishnoi**, A. K. Cheetham*, *Acc. Mater. Res.*, **2022**, *3*, 439 – 448.

42. *Ligand Control of Structural Diversity in Luminescent Hybrid Copper (I) Iodides,* S. Wang, E. E. Morgan, S. Panuganti, L. Mao, **P. Vishnoi**, G. Wu, Q. Liu, M. G. Kanatzidis, R. D. Schaller, R. Seshadri*, *Chem. Mater.*, **2022**, *34*, 3206–3216.

41. *Why are Double Perovskite Iodides so Rare?,* **P. Vishnoi**, R. Seshadri,* and A. K. Cheetham,* *J. Phys. Chem. C*, **2021**, 125, 11756–11764.

40. *Chemical Control of Spin-Orbit Coupling and Charge Transfer in Vacancy-Ordered Ru(IV) Halide Perovskites,* **P. Vishnoi**, J. L. Zuo, J. A. Cooley, L. Kautzsch, A. Gómez-Torres, J. Murillo, S. Fortier, S. D. Wilson, R. Seshadri*, A. K. Cheetham*, *Angew. Chem. Int. Ed.*, **2021**, *60,* 5184–5188.

39. *Structural Diversity and Magnetic Properties of Hybrid Ruthenium Halide Perovskites and Related Compounds*, **P. Vishnoi**, J. L. Zuo, T. A. Strom, G. Wu, S. D. Wilson, R. Seshadri*, A. K. Cheetham*, *Angew. Chem. Int. Ed.*, **2020,** *59,* 8974–8981.

38. *$Li_5VF_4(SO_4)_2$: A Prototype High Voltage Li-ion Cathode,* R. C. Vincent, **P. Vishnoi**, J.-X. Shen, M. B. Preefer, K. Persson, R. Seshadri*, *ACS Appl Mater. Interfaces,* **2020**, *12*, 48662–48668.

37. *Tunable Luminescence in Hybrid Cu(I) and Ag(I) Iodides*
S. Wang, E. E. Morgan, **P. Vishnoi**, L. Mao, S. M. L. Teicher, G. Wu, Q. Liu, A. K. Cheetham, R. Seshadri*, *Inorg. Chem.*, **2020**, *59*, 15487–15494.

36. *Superlattices of Covalently Cross-linked 2D Materials for the Hydrogen Evolution Reaction*
C. N. R. Rao*, K. Pramoda, A. Saraswat, R. Singh, **P. Vishnoi**, N. Sagar, A. Hezam, *APL Mater.*, **2020**, *8*, 020902–11.

35. *Covalently Linked Heterostructures of Phosphorene with MoS_2/$MoSe_2$ and their HER Activity*, **P. Vishnoi**, K. Pramoda, U. Gupta, M. Chhetri, R. Geetha Balakrishna, C. N. R. Rao*, *ACS Appl. Mater. Interfaces*, **2019**, *11*, 27780–27787.

34. *2D Elemental Nanomaterials beyond Graphene*, **P. Vishnoi**, K. Pramoda, C. N. R. Rao*, *ChemNanoMat*, **2019**, *5*, 1062–1091.

33. *Stable Functionalized Phosphorenes with Photocatalytic HER Activity,* **P. Vishnoi**, U. Gupta, R. Pandey, C. N. R. Rao*, *J. Mater. Chem. A*, **2019**, *7*, 6631–6637.

32. *Photochemical HER Activity of Layered Metal Phospho-Sulfides and -Selenides*, M. Barua, M. M. Ayyub, **P. Vishnoi**, K. Pramoda, C.N.R. Rao*, *J. Mater. Chem. A*, **2019**, 7, 22500–22506.

31. *Utility of Bis-4-pyridines as Supramolecular Linkers for 5-Sulfosalicylic Acid Centers: Structural and Optical Investigations*, A. A. Ganie, **P. Vishnoi**, A. A. Dar*, *Cryst. Growth Des.*, **2019**, *19*, 2289–2297.

30. *Arsenene Nanosheets and Nanodots,* **P. Vishnoi**, M. Mazumder, S. K. Pati, C. N. R. Rao*, *New J. Chem.*, **2018**, *42*, 14091–14095.

29. *Phosphorene Quantum Dots,* **P. Vishnoi**, M. Mazumder, M. Barua, S. K. Pati, C. N. R. Rao*, *Chem. Phys. Lett.*, **2018**, *699*, 223–228.

28. *Covalently Conjugated MoS_2/Fe_3O_4 Magnetic Nanocomposite for Efficient and Reusable Catalyst for H_2 Production,* M. K. Jaiswal*, U. Gupta, **P. Vishnoi**, *Dalton Trans.*, **2018**, *47*, 287–291.

27. *Covalently Functionalized Nanoparticles of Semiconducting Metal Chalcogenides and their Attributes*, **P. Vishnoi**, P. Fatahi, M. Barua, A. Bandyopadhyay, S. K. Pati, C. N. R. Rao*, *ChemNanoMat*, **2018**, *4*, 41–45.

26. *Doping Phosphorene by Holes and Electrons through Molecular Charge Transfer*
P. Vishnoi, S. Rajesh, S. Manjunatha, A. Bandyopadhyay, M. Barua, S. K. Pati, C. N. R. Rao*, *ChemPhysChem*, **2017**, *18*, 2985–2989.

25. *Reaction with Organic Halides as a General Method for the Covalent Functionalization of Nanosheets of 2D Chalcogenides and related Materials*, S. Manjunatha, S. Rajesh, **P. Vishnoi**, C. N. R. Rao*, *J. Mater. Res.*, **2017**, 32, 2984–2992.

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