

Career Profile:

S.No.	Position held	Organisation	Period
1	Head of the Department of Physics	MANIT Bhopal, MP	Jan 2024 – till date
2	Head of the Department of Physics	MANIT Bhopal, MP	Jan 2019 - Dec 2020
3	Head of the Department of Chemistry	MANIT Bhopal, MP	Oct 2020 – May 2021
4	Professor (Physics)	MANIT Bhopal, MP	Dec. 2018 - till date
5	Associate Dean (PG & Ph.D.)	MANIT Bhopal, MP	March 2017- April 2019
6	Head of the Department of Physics	MANIT Bhopal, MP	July 2013 - July 2016
7	Associate Professor Physics	MANIT Bhopal, MP	June 2010 - Dec. 2018
8	Associate Professor Physics & Head School of Nanotechnology	State Technical University of Madhya Pradesh (RGPV) Bhopal, MP	Aug 2008 - May 2010
10	Reader Physics	RGPV Bhopal MP	Aug 2005 - Aug 2008
11	Senior Project Leader (Technology)	The Welding Institute (TWI) Technology Centre (Wales), Port Talbot, UK	Feb 2005 - Aug 2005 & Sept. 2006 - Oct 2007
12	Postdoctoral Research Fellow “Tunable dielectrics for microwave applications”	University of Leeds, Leeds, UK	Apr 2003 - Feb 2005
13	Research Officer “Non-destructive testing of thermal barrier coatings (TBCs) for turbine blades”	University of Bath, UK	March 2001 - March 2003
14	Postdoctoral Research Fellow “Development of on-line electro-chemical sensors for molten metals”	University of Leeds, Leeds, UK	March 1998 - Feb 2001
15	Senior Research Assistant “Ferroelectric, pyroelectric, piezoelectric & superconducting properties of electronic ceramics”	Indian Institute of Technology (IIT) Delhi	Dec 1991 - Aug 1994

Honors and Awards

- 2018** **Royal Academy of Engineering (RAE)** London UK has endorsed as **Exceptional Talent**
- 2013-2024** **Senior Visiting Research Fellow (SVRF)** Faculty of Engineering & Design, Department of Architecture and Civil Engineering University of Bath, UK
- 2012-2014** **UK-India Education Research Initiative-Thematic Partnership (UKIERI)** collaborative research project with University of Bath, UK, and IIT Delhi, India
- 2011** **Royal Academy of Engineering London (UK)** Research Exchange Award in collaboration with University of Bath, UK
- 1994-1997** **Recipient of the Overseas Research Student (ORS)** Award from the Committee of Vice-Chancellors and Principals (CVCP) of the Universities of the United Kingdom, to pursue Ph.D. from University of Leeds, UK
- 1994-1997** **Recipient of the Tetley-Lupton Scholarship from University of Leeds**, UK to pursue Ph.D.

Professional Membership

- Institute of Materials, Minerals and Mining (**IoM3**) CEng, CSci, FIMMM 315591
- Life Member, Materials Research Society of India (**MRSI**) LMB 1855
- Life Member, Indian Society for Technical Education (**ISTE**) LM 77033
- Life Member Vijnana Bharati VIBHA 240

Sponsored Research Projects

Successfully managed and executed following externally funded, collaborative and multidisciplinary research projects, resulted in high impact scientific research publications, Ph.Ds., and development of multifunctional materials and devices for wide range of applications.

1. **2021- 2022** “Climate-Resilient, Energy Secure and healthy built environmentTs (CREST)”, Going Global Partnerships - Collaborative Grant funded by the **British Council** as **Co-PI**
2. **2018- 2021** “*Development of Novel Bismuth (Bi) based Double Perovskite Multiferroic Ceramics for Device Applications*”, funded by Department of Science & Technology-Science & Engineering Research Board (**DST-SERB**) as **PI**
3. **2015-2017** “*Synthesis & Characterization of Sr, Ba and Pb based Bismuth Titanate Ceramics*”, funded by Madhya Pradesh Council of Science and Technology (**MPCST**) as **PI**
4. **2016** “*Design and Synthesis of New Conjugated Low Band Gap Polymers Based on Weak Donor-Strong Acceptor: An Approach for Efficient Bulk Heterojunction Solar Cells*”, funded by Russian Foundation of Basic Research and Department of Science & Technology (**RFBR-DST**)
5. **2012-2014** “*Interactive Systems and Coatings for a Sustainable Built Environment*”, UK-India Education Research Initiative (**UKIERI**) British Council as **PI**
6. **2011-2014** “*Synthesis and Characterisation of Functionalised Ordered Mesoporous Silica Nanocomposites for Advanced Applications*”, funded by M. P. Council of Science and Technology (**MPCST**) as **Co-PI**
7. **2007-2011** “*Design, Development and Field Testing of a cost Effective Solar Photovoltaic Cell by Implementation of the Nano-Technological Methodologies*”, funded by M. P. Council of Science and Technology (**MPCST**) as **PI**
8. **2011** “*Sustainable Building Materials Intelligent Coatings*”, funded by The Royal Academy of Engineering, (**RAE**) London, UK as **PI**
9. **2011** “*Surface Morphological Investigations of Nanomaterials Using AFM*”, Grant in Aid Ministry of Human Resources & Dev. MHRD as **Co-PI**
10. **2008-2010** “*Structural Studies of Nanocrystalline Materials and Thin Films*”, funded by M. P. Council of Science and Technology (**MPCST**) as **Co-PI**

Book Written

“**Aurivillius Phase Materials: Exploring Lead Free Ferroelectrics**” published in Dec 2021 by the **Institute of Physics (IOP science)** UK. DOI 10.1088/978-0-7503-3419-8, ISBN 978-0-7503-3419-8 (ebook), ISBN 978-0-7503-3417-4 (print).

Book chapters (Published)

- N. Kumar, J. Rani, **R. Kurchania**, “*Multifunctional Flexible and Wearable Sensors*”, **Flexible and Wearable Sensors Materials, Technologies, and Challenges**, Chapter 13, pp. 203-218 (2023) Edited by Ram K Gupta, CRC Press, eBook ISBN 9781003299455
- K. Navin, **R. Kurchania**, “*Nanosensors Based on Magnetic Materials*”, **Emerging Applications of Low Dimensional Magnets**, Chapter 8, pp. 115-136, (2023) Edited by Ram K. Gupta, Sanjay R. Mishra, Tuan Anh Nguyen, CRC Press, eBook ISBN 9781003196952
- O.Subohi. M. M. Malik, **R. Kurchania**, “*The effect of A-site and B-site isovalent doping in bismuth titanate ceramics on its dielectric and ferroelectric properties*”, **Advances in Materials Science Research**, Chapter 7, **vol. 29**, pp. 237- 259, (2017) Edited by Maryann C Wythers, Nova Science Publishers New York. ISSN: 2159-1997, ISBN:978-1-5361-806-3

Ph.D. Guided (13):

S.No.	Name of the Candidate	Title of the Ph.D. thesis	Status
1	Amita Rani	Synthesis, characterization and properties of polymer nanocomposites	Awarded in November 2023
2	Kumar Navin	Investigation of multifunctional properties of LSMO (Lanthanum Strontium Manganite) based nanostructures	Awarded in September 2020
3	Shivangi Dubey	Study of five-layer Aurivillius oxides synthesised by wet chemical routes	Awarded in November 2017
4	Gagan Kant Tripathi	Study of bismuth oxyhalides [BiOX (X=Cl, Br and I)] nano photocatalyst for energy and environmental applications	Awarded in August 2017
5	Ankita Sharma	Synthesis and characterization of silica polymer nanocomposites for adsorption and biological applications	Awarded in February 2017
6	Pushpraj Pathak	Investigation of thermoluminescence properties of rare earth doped aluminate and borate host materials	Awarded in September 2016
7	Masroor A Bhat	Synthesis and characterization of some multiferroic and cobaltate compounds	Awarded in June 2016
8	Padmini Pandey	Investigations on rare earth doped ZnO nanoparticles for dye sensitized solar cells	Awarded in November 2015
9	Manjeet Singh	Fabrication and characterization of solar photovoltaic cell based on organic materials	Awarded in August 2015
10	Oroosa Subohi	Synthesis and characterization of bismuth layer structured ferroelectrics (BLSF)	Awarded in March 2015
11	Nirmala Desouza	Development of an algorithm for predicting dust storms in northern India using satellite and radiosonde data	Awarded in March 2015
12	Deepshikha Rathore	Synthesis and characterisation of nanoferrites	Awarded in September 2013
13	Santosh Jain	Some linear and nonlinear effects in interaction of electrostatic and electromagnetic waves with nanoparticles and nanotubes	Awarded in August 2013

Ongoing (08):

S.No.	Name of the Candidate	Title of the Ph.D. thesis	Status
1	Naveen Kumar	Study of structural, ferroelectric and magnetoelectric properties of lead-free multiferroic composites	Ongoing
2	Bharat Bhardwaj	DFT based first principle calculations of double perovskites	Ongoing
3	Yashi Jain	Theoretical exploration of multicomponent metal semiconductors	Ongoing
4	Garima Hada	Solar photovoltaics	Ongoing
5	Navratan Parihar	Novel magnetic materials	Ongoing
6	Soumya Shukla	Thin film thermoelectric materials	Ongoing

7	Seema Saini	Magnetic topological materials	Ongoing
8	Dinesh A Patro	Bulk thermoelectric materials	Ongoing

M.Tech./M.Sc. dissertation guided (69)

S.No.	Name of the candidate	Title
1	Harshit Jaiswal	Design and simulation of high efficiency ZnO/CsSnX ₃ /CuSCN perovskite solar cell
2	Nishank Gangwar	Design and optimization of lead-free perovskite solar cells based on CH ₃ NH ₃ SnI ₃ using SCAPS-1D
3	Harendra Yadav	Design and simulation of high efficiency CdS/CH ₃ NH ₃ SnI ₃ /Cu ₂ O perovskite solar cell
4	Soundraya Chaliha	Protecting quantum correlations in two Qutrit Werner state and three qubit graph and hypergraph states in correlated environments
5	Rohan Patil	Utilization of photonic crystals for a lossless transmission of terahertz waves
6	Cibanshu Sankhua	A density functional theory based study of halide perovskites
7	Chesta Nagar	Synthesis and characterisation of strontium modified barium titanate ferroelectric ceramics
8	Mani Bhardwaj	First principle study of half and full-Heusler compounds
9	Viren Tyagi	Active learning of Bayesian force fields for halide perovskites
10	Yashi Jain	First principles study of quaternary Heusler alloys and double perovskite compounds
11	Ganta Varun Reddy	Simulation and performance analysis of cadmium telluride thin-film solar cell
12	S. Sameer Muneersaab	A DFT study of double perovskite compounds
13	Abhay Dwivedi	Synthesis of graphene and It's application in electronic devices
14	Aditi Jain	First principle study of half and full-Heusler compounds
15	Utkarsh Namdeo	Theoretical study of structural, electronic, thermoelectric, vibrational and thermodynamic properties of half and full Heusler compounds
16	Harsh Vaishnav	Synthesis of ZrO ₂ based nanofluid for cooling and insulation applications in transformer
17	Saket Sanjay Phadkule	Synthesis and characterization of ZnO and SiO ₂ nanoparticles based PVA composite films
18	Utkarsh Vishwakarma	Structural, optical & electrochemical properties of La _{1-x} Sr _x MnO ₃ (LSMO) synthesized by different sol-gel methods
19	Vilas Tiku	Study of structural and mechanical properties of Al/nano-Al ₂ O ₃ metal-matrix nanocomposite
20	Naveen Kumar	Studies of mechanical and structural properties of aluminium and cerium oxide-based nanocomposites by powder metallurgy method
21	Kuldeep Pal	Fabrication of aluminium metal matrix nanocomposites reinforced with zirconia (ZrO ₂) by the powder metallurgy method and studies the mechanical properties of nanocomposites
22	Prashant Ninoriya	Study of structural, optical & electrochemical properties of nickel oxide based (NiO)-reduced graphene oxide (RGO) based nanocomposite
23	Rupali Rambhau Malode	Multi-quantized-state resistive switching in Pt/Nb ₂ O ₅ /Al devices for Multibit data storage applications
24	Satyam Kumar	Humidity sensing application of lithium doped KTN bulk and thin films
25	Jitendra Kumar Gupta	Electrostatic edible coatings of casein for fruits
26	Garima Golhate	Grain size dependent structural dielectric and ferroelectric, properties of barium titanium oxide (BTO) ceramics
27	Rajesh Kumar Vyas	Study of electrochemical and photocatalytic properties of mesoporous NiO nanostructure synthesized by sol-gel method
28	Anshul Rawat	Development, testing and comparison of Epoxy/ nano SiC polymer matrix nanocomposite and Epoxy/nanoSiC + Kevlar fiber hybrid composite fabricated by hand lay-up process

29	Girdharilal	Synthesis and analysis of mechanical and tribological behaviour of Al5083/Nano SiC particulate composite for engineering applications
30	Vandana Kuldeep	Synthesis and characterization of lead-free nanocomposite multiferroic materials for application in memory devices
31	S. Bichiballi	Studies on tilt angle magnetisation in CoPt/NiFe exchange springs and on highly coercive Nd-Fe-B films towards micromagnetic devices
32	Brijesh S Kanwer	Study of bismuth oxyhalides and their properties
33	Kuldeep Mishra	Crosstalk modeling and analysis in nanometer design
34	Harshit Gaurav Tiwari	Modelling CAD views for timing, power and signal integrity analysis
35	M R Supriya	Studies on tilted magnetic anisotropy in Gd-Fe thin films
36	Vidya P D	Experimental studies of TiO ₂ thin films and nanostructures for gas sensing and photo catalytic applications
37	Nizwra Boro	Study and development of thermoelectric power generators based on oxides and selenides
38	Gumma Sarala	Power reduction methodologies & development of PPA explorer for high speed low power processors
39	Teekam Saran	High speed serial link verification
40	Ashish Mourya	Synthesis and characterisation of europium titanate (EuTiO ₃) nanoparticles
41	Rajneesh Chaurasiya	Synthesis and characterisation of yttrium manganite (YMnO ₃) nanoparticles
42	Rahul Shrivastava	Synthesis and characterisation of cadmium sulphide (CdS) nanoparticles
43	Sandeep Hattewar	Methacrylic acid functionalised silica polymer nanocomposites for adsorption applications
44	Kshitij Verma	Development of design verification suite for full custom mixed signal memory designs using true spice & digital co-simulation techniques
45	Vijay Swarnkar	Design checks in front-end environment for DSM (Deep Sub Micron) design analysis and automation
46	Mukund Kaushal Patel	Study of TiO ₂ thin film formation parameters on glass substrate
47	Vimal Barua	Fabrication and spectroscopic characterizations of (Y _{0.985} Nd _{0.015}) ₂ O ₃ transparent ceramic
48	Shailendra Singh Rajput	Study on dewatering of gelatinous Nd-doped yttrium aluminum garnet (Nd:YAG) precipitates synthesized from urea co-precipitant
49	Aditya Jain	Simulation & modelling of dielectrophoresis for aligning single walled carbon nanotubes
50	Suhas Katkar	Growth, characterization and alignment of carbon nanotube
51	Shyam Trivedi	Structural and electronic properties of silicene and germanene: A first principle study
52	Deepak K. Baranwal	Electronic and transport properties of zig-zag graphene nanoribbons with Stone-Wales defect and monovacancies
53	Kavita Rao Khaddeo	Electronic properties of zigzag GaN nanotube
54	Sourabh Jain	Ab initio study of CoFe-MgO-CoFe based magnetic tunnel junction (MTJ)
55	Arjun Singh Yadav	Hybrid solar cell synthesis and fabrication
56	Ruma Ghosh	Fabrication of nano-gap electrodes using electromigration
57	Arpit Jain	Ab initio study of electronic properties of single layer graphene nanoribbons
58	Sushmita Chaudhari	Electroluminescence of gold quantum clusters
59	Rituraj Sharma	Fabrication of NiFe ₂ O ₄ nanofluid based microfluidic system using X-Ray lithography
60	Harimohan Rai	Electronic and transport properties of zigzag boron nitride nanoribbons
61	Abhishek Sharma	Design and simulation of Pt based micro hot plate and study of SnO ₂ for gas sensing applications
62	Smriti Sahu	Positioning of carbon nanotube on gold substrate using dip-pen nano lithography
63	Chetna Tyagi	Structural, optical and transport properties of In _x Ga _{1-x} As/GaAs quantum wire and InAs/In _x Ga _{1-x} As/GaAs dwell structure

64	Sachin Shridhar Sawant	Synthesis and characterization of superparamagnetic magnetite (Fe_3O_4) nanoparticles for biomedical applications
65	Sanjay Pachori	Investigations of thermal stability and magnetic properties of undoped and Mn-doped multiferroic BiFeO_3 nanoparticles
66	Pooja Pandey	Structural and magnetic properties studies of polypyrrole-ferrite core shell nanoparticles
67	Shweta Jain	To study the controlled synthesis of silver nanoparticles and influence of surfactant on the morphology of silver nanoparticles
68	Mithun Tyagi	Growth and characterization of Dye sensitized solar cell structure based on ZnO nanocrystalline thin films
69	Satyendra Singh Chouhan	Edge-functionalised and substitutionally doped graphene nanoribbons-an ab initio approach

Research publications

1. R. Ramanathan, K. Ravichandran, **R. Kurchania**, H. C. Barshilia, Recent advancements and future perspectives in oxide-based heterostructure chemiresistive gas sensors, *Materials Science in Semiconductor Processing*, (**Elsevier**) **vol. 203**, pp. 110213, (2026)
2. A. Jain, Y. Jain, D. Shrivastava, **R. Kurchania**, First-principles calculations to investigate electronic, magnetic and thermoelectric properties of Ru_2FeAs and Ru_2FeP full-Heusler compounds, *Indian Journal of Physics*, (**Springer**), **vol. 99**, pp. 3219–3230 (2025)
3. Y. Jain, **R. Kurchania**, Pressure-induced band gap enhancement and temperature-dependent thermoelectric characterization of semiconducting Transition Metal Chalcogenides LiMS ($\text{M} = \text{Cu, Ag}$), *Materials Science in Semiconductor Processing* (**Elsevier**) **vol. 186**, pp. 109030 (2025)
4. D. Rathore, **R. Kurchania**, R. K. Pandey, Nanoferrites gas sensors: A critical review, *Sensors and Actuators A: Physical*, (**Elsevier**) **vol. 379**, pp. 115968 (2024)
5. B Bhardwaj, **R. Kurchania**, New semiconducting lead-free halide double perovskite $\text{Ag}_2\text{LiGaF}_6$ for optoelectronic and thermoelectric applications. *Solid State Communications*, (**Elsevier**) **vol. 394**, pp. 115701 (2024)
6. S. S. Muneersab, Y. Jain, D. Shrivastava, **R. Kurchania**, Insight view of thermal, mechanical and structural behavior of novel double perovskites Ba_2XSbO_6 ($\text{X} = \text{Sc, Y}$): A DFT based study, *Computational Condensed Matter*, (**Elsevier**) **vol. 40**, pp. e00949 (2024)
7. N Kumar, **R. Kurchania**, Jyoti Rani, Enhanced dielectric, ferroelectric and piezoelectric properties of lead-free $(\text{Ba, Ca})(\text{Sn, Ti})\text{O}_3$ ceramics by optimisation of sintering temperature, *Journal of Alloys and Compounds*, (**Elsevier**) **vol. 989**, pp. 174358, (2024)
8. Y Jain, S.S. Muneersab, D Shrivastava, **R. Kurchania**, Confirming the structural stability and reaching the depth of quaternary Heusler alloys LiMgAgZ ($\text{Z} = \text{Al, Ga}$) for thermoelectric device applications: A first-principles study, *Materials Science and Engineering: B*, (**Elsevier**) **vol. 298**, pp.116868, (2023)
9. Barrie Dams, Naveen Kumar, **R. Kurchania**, John Stewart, Martin Ansell, Marion Harney, Richard J Ball, Interfacial bond strength and failure modes of traditional and modern repair materials for historic fibrous plaster, *Materials and Structures*, (**Springer**) **vol. 56(8)**, pp.149, (2023)
10. Shaikh Sameer Muneersab, Yashi Jain, Deepika Shrivastava, **R. Kurchania**, Investigation of thermoelectric response, mechanical stability and thermodynamic behavior of $\text{Sr}_2\text{MgPdO}_6$ and $\text{Sr}_2\text{MgPtO}_6$ double perovskites: a DFT insights, *Physica B: Condensed Matter*, (**Elsevier**) **vol. 666**, pp. 15094, (2023)

11. **R Kurchania**, U Namdeo, Y Jain, D Shrivastava, "Analysing the structural, mechanical and thermal stability in lithium-based half-Heusler compounds LiAlSi and LiAlGe: a first-principles study", *Bulletin of Materials Science*, (**Springer**) vol. **46** (3), pp. 117, (2023)
12. Y. Jain, S. S. Muneersab, D. Shrivastava, **R. Kurchania**, "Structural, mechanical, electronic, vibrational and thermoelectric properties of novel double perovskites Ba₂MgPdO₆ and Ba₂MgPtO₆ within DFT framework" *Materials Science in Semiconductor Processing*, (**Elsevier**), vol. **158**, pp. 10738, (2023)
13. Satyam Kumar, Vikas N. Thakur, Ravikant, **R. Kurchania**, Ram S. Katiyar, Ashok Kumar "Improved humidity sensitivity and possible energy harvesters in lithium modified potassium niobium tantalate oxide" *Materials Chemistry and Physics* (**Elsevier**), vol. **288**, pp. 126384, (2022)
14. A. Jain, D. Shrivastava, **R. Kurchania**, "Structural, electronic, elastic, phonon and thermoelectric properties of Heusler-structured intermetallic HfCu₂In: Using density functional theory" *Physics B* (**Elsevier**), vol. **629**, pp. 413633, (2022)
15. S Phadkule, K Navin, A Nigrawal, R Ball, **R. Kurchania**, "Effects of ZnO and SiO₂ Nanoparticle Additions on the Structural, Water Absorption and Mechanical Properties of Polyvinyl Alcohol (PVA) Films", *Nano Hybrids and Composites* (**Trans Tech Publications**), vol. **35**, pp. 41-54, (2022)
16. H Vaishnav, K Navin, **R. Kurchania**, RJ Ball, "Synthesis of ZrO₂ Based Nanofluids for Cooling and Insulation of Transformers", *IEEE Transactions on Dielectrics and Electrical Insulation* (**IEEE**), (**Elsevier**), vol. **29**(1), pp. 199-205, (2022)
17. M. Khan, M. Kumari, H. Pawar, U.K. Dwivedi, **R. Kurchania**, D. Rathore, "Effect of concentration on sensing properties of CoFe₂O₄/BaTiO₃ nanocomposites towards LPG" *Applied Physics A* (**Springer**), vol. **127**(9), pp. 1-8, (2021)
18. **R. Kurchania**, R. Sahu, K. Navin, O.Subohi, "Room temperature ferroelectricity and ferromagnetism in double perovskite Bi₂CoMnO₆ ceramics synthesized using sol-gel combustion technique" *Journal of Superconductivity and Novel Magnetism* (**Springer**), vol. **44**, pp. 2667-2672, (2021)
19. K. Navin, O. Subohi, R.J. Ball, **R. Kurchania**, "Role of Fe (x= 0–0.15) Substitution on structural, magnetic, and transport properties of the La_{0.7}Sr_{0.3}FexMn_{1-x}O₃ system", *ECS Journal of Solid State Science and Technology* (**IOP Science**), vol. **10**(7), pp. 71009, (2021)
20. A. Giampiccolo, D. M. Tobaldi, E. Jones, J. A. Labrincha, **R. Kurchania**, M. P. Ansell, R.J. Ball, "UV/visible sol gel W–TiO₂ photocatalytic coatings for interior building surfaces", *Building and Environment* (**Elsevier**), vol. **205**, pp. 108203, (2021)
21. S. T. Busra, I. Ceren, C. H. Juliana, **R. Kurchania**, R. J. Ball, "Use of brick waste for mortar-substrate optimisation of mortar-masonry systems", *Construction and Building Materials* (**Elsevier**), vol. **301**, pp. 124256, (2021)
22. N. Kumar, J. Rani, **R. Kurchania**, "A review on power conversion efficiency of lead iodide perovskite-based solar cells", *Materials Today: Proceedings* (**Elsevier**), vol. **46**, pp. 5570-5574, (2021)
23. K. Navin, **R. Kurchania** "The effect of shell layer on magnetic, transport, and electrochemical properties of La_{0.7}Sr_{0.3}MnO₃ nanoparticles" *Ceramics International* (**Elsevier**), vol. **47**(11), pp. 15859-15867, (2021)
24. N. Kumar, J. Rani, **R. Kurchania**, "Advancement in CsPbBr₃ inorganic perovskite solar cells: Fabrication, efficiency and stability", *Solar Energy* (**Elsevier**), vol. **221**, pp. 197-205, (2021)
25. R. Vyas, K. Navin, G. K. Tripathi, **R. Kurchania** "Structural, magnetic, photocatalytic, and electrochemical studies of the mesoporous Nickel oxide (NiO) nanostructures" *Optik, International Journal for Light and Electron Optics* (**Elsevier**), vol. **231** pp. 166433, (2021)

26. José Antonio Ibáñez Gómez, A. Giampiccolo, D. M. Tobaldi, S. Mair, C. F. da Silva, A. Maria C. Barrasa, D. Maskell, M. P. Ansell, **R. Kurchania**, F. Mayer, J. A. Labrincha, Y. R. de Miguel, R. J. Ball, "Photocatalytic Lime Render for Indoor and Outdoor Air Quality Improvement", *Catalysts (MDPI)*, **vol.11(3)**, pp. 296 (1-26), (2021)
27. V Tiku, K Navin, **R Kurchania** "Study of structural and mechanical properties of Al/Nano- Al_2O_3 metal matrix nanocomposite fabricated by powder metallurgy method" *Transactions of the Indian Institute of Metals (Springer)*, **vol. 73 (4)**, pp. 1007-1013, (2020)
28. K. Pal, K Navin, **R Kurchania** "Study of structural and mechanical behaviour of Al- ZrO_2 metal matrix nanocomposites prepared by powder metallurgy method" *Materials Today: Proceedings (Elsevier)*, **vol.26 (2)**, pp. 2714-2719, (2020)
29. K. Navin, **R. Kurchania** "A comparative study of the structural, magnetic transport and electrochemical properties of $\text{La}_{0.7}\text{Sr}_{0.3}\text{MnO}_3$ synthesized by different chemical routes" *Applied Physics A (Springer)*, **vol.126(2)**, pp. 100, (2020)
30. N. Kumar, K. Navin, R.J. Ball, **R. Kurchania** "Mechanical and structural properties of aluminium nanocomposites reinforced with cerium oxide nanoparticles fabricated by powder metallurgy" *Journal of Materials NanoScience (Integrated Science)*, **vol. 7 (2)**, pp. 73-78, (2020)
31. A. Gupta, V.R. Reddy, **R. Kurchania**, O. Subohi "Synthesis of $\text{Bi}_{4.5}\text{Na}_{0.5}\text{Ti}_4\text{O}_{15}$ by co-precipitation route and optimization of calcination and sintering temperatures" *Applied Physics A (Springer)*, **vol.125(11)**, pp. 785, (2019)
32. A. Rani, S.K. Tripathi, **R. Kurchania**, M. Singh "Effect of copper doping on electrical properties of polymer blend CdSe films prepared by chemical method" *Integrated Ferroelectrics (Taylor & Francis)*, **vol. 210(1)**, pp. 120-125, (2019)
33. V. Kuldeep. O. Subohi, **R. Kurchania** "Investigations on dielectric, electrical and ferroelectric properties of $x\text{BaTiO}_3-(1-x)\text{NiFe}_2\text{O}_4$ multiferroic composite ceramics" *Applied Physics A (Springer)*, **vol.125(9)**, pp. 631, (2019)
34. S. Kumar, Ravikant, **R. Kurchania**, A. Kumar "Dielectric and impedance spectroscopic study of lithium doped potassium tantalum niobium oxide" *Ceramics International (Elsevier)*, **vol. 45(14)**, pp. 17137-17143, (2019)
35. K. Navin, **R. Kurchania** "Structural, magnetic and electrochemical properties of LSMO-ZnO core-shell nanostructure" *Materials Chemistry and Physics (Elsevier)*, **vol. 234**, pp. 25-31, (2019)
36. K. Navin, **R. Kurchania** "Influence of BaTiO_3 on Magnetic and Transport Properties of $\text{La}_{0.7}\text{Sr}_{0.3}\text{MnO}_3$ - BaTiO_3 Nanocomposite" *Journal of Superconductivity and Novel Magnetism (Springer)*, **vol. 32 (3)**, pp.539-547, (2019)
37. K. Navin, **R. Kurchania** "The effect of particle size on structural, magnetic and transport properties of $\text{La}_{0.7}\text{Sr}_{0.3}\text{MnO}_3$ nanoparticles" *Ceramics International (Elsevier)*, **vol. 44(5)**, pp. 4973-4980, (2018)
38. S. Dubey, O. Subohi, **R. Kurchania**, "A comparative study of the properties of five-layered Aurivillius oxides $\text{A}_2\text{Bi}_4\text{Ti}_5\text{O}_{18}$ (A= Ba, Pb, and Sr) synthesized by different wet chemical routes" *Applied Physics A (Springer)*, **vol. 124 (7)**, pp. 461 (1-12), (2018)
39. P. Pathak, **R. Kurchania**, "Study of thermo-luminescence properties of europium doped strontium borate phosphor exposed to Co-60 and photon beams (6 MV and 16 MV)", *Physica B: Condensed Matter (Elsevier)*, **vol. 545**, pp.119-124, (2018)
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10. **R. Kurchania**, P. Crowther, D.P Almond, S. Kenny, R. Stevens "Evaluation of the degradation of thermal barrier coatings (TBCs) using impedance spectroscopy" 104th Annual Meeting and Exposition of the American Ceramic Society, April 28 - May 1, 2002, St. Louis, USA.
11. **R. Kurchania**, D. Kaewchinda, S. Arscott, S.J. Milne "Sol-Gel synthesis of PZT thin films" *Proceedings of the 1997 IEE Colloquium on Electro-Technical Ceramics-Processing, Properties and Applications*, London, UK, vol. **317**, pp. 5/1, (1997).
12. **R. Kurchania**, S.J. Milne "Characterisation of sol-gel derived PZT and PLZT thin films" *Proceedings of the Xth IEEE International Symposium on the Applications of Ferroelectrics (ISAF) 1996*, vol. **1**, pp. 447-450, IEEE catalogue No. **96CH35948**, (1996).

National Conference

1. R. Ghosh, A. Kumar, **R. Kurchania** "Process design of nanogap electrode structure using electromigration for nano/molecular electronic devices" National Symposium on Materials for Advanced Technology (NSMAT) March 27-29, 2011, Banasthali (Rajasthan)
2. A. Srivastava, A. Jain, **R. Kurchania** "Ab-initio study of boron and nitrogen doped armchair graphene nanoribbon" National Conference on Electronic Materials and Applications (NCEMA-11) June 10-11, 2011 Jiwaji University Gwalior (MP)

Workshop/Training program/Summer/Winter School organized

1. **Convenor and organizing secretary** of three days "19th National Seminar on Ferroelectrics & Dielectrics XIX-NSFD 2016" December 19-21, 2016 at MANIT, Bhopal.
2. **Member of the National Steering Committee** of the "International Conference on Technologically Advanced Materials and Asian Meeting on Ferroelectricity (**ICTAM-AMF10**)" November 07-11, 2016 Delhi University, Delhi and Society for Technologically Advanced Materials of India (STAMI).
3. **Coordinator** of a one-week self-financed Short-Term Training Programme (STTP) on "Big Data Analytics using Hadoop and Ecosystems" from 06-10 Oct 2016 at MANIT Bhopal.
4. **Coordinator** of two weeks Indian Society for Technical Education (ISTE)/Short Term Training Programme (STTP) on "Engineering Physics" in collaboration with IIT Bombay sponsored by MHRD from 08-18 Dec 2015 at MANIT Bhopal.
5. **Convenor** of a one-day International workshop sponsored by UK-India Education Research Initiatives-Thematic Partnership programme on "Green Buildings and Sustainable Technologies" on 07th Dec 2013 at IIT, Delhi.
6. **Convenor** of a two day's workshop sponsored by UK-India Education Research Initiatives-Thematic Partnership programme on "Interactive Systems, Nanosolar Photovoltaics and Coatings for Sustainable Built Environment" from 10-11 Jan 2013 at MANIT, Bhopal.
7. **Member of the National Advisory Committee** of the International conference on "Emerging Technologies Micro to Nano-2013 (ETMN-2013)" jointly organised by CEERI-Pilani and BITS-Pilani at BITS Goa campus from Feb 23-24, 2013.
8. **Member** of the local organizing committee of the International Conference and Workshop on Nanostructured Ceramics and other Nanomaterials (ICWNCN) March 13-16, 2012 by the Department of Physics and Astrophysics, University of Delhi, Delhi.
9. **Technical Co-Chair** of the organizing committee of International Conference on Sustainable Habitat

Summit December 9-11, 2011, Delhi.

10. **Co-Convenor** of a one-week Mission 10X ISTE/WIPRO sponsored workshop on High Impact Teaching from 21-25 Feb 2011 at MANIT Bhopal.
11. **Convenor** of a one-week National workshop (STTP) sponsored by MPCST and RGPV on Recent Advances in Nanotechnology from 2-6 June 2008 at Rajiv Gandhi Proudhyogiki Vishwavidyalaya Bhopal.
12. **Member** of the organizing committee of 15th International Conference on New Horizons of Mechanical Engineering, March 2008, RGPV Bhopal.
13. **Member** of the organizing committee of International Conference on Global Institute of Flexible Systems Management (GLOGIFT), Dec 2005, RGPV Bhopal.
14. **Member** of the organizing committee of 55 years of Ferroelectrics A Symposium to mark the 80th birthday of Professor L.E. Cross, September 2003, UK Ferroelectrics Network, Leeds, UK.

Workshop/Training program/Summer/Winter School attended

<i>Duration</i>	<i>Nature of Training</i>	<i>Duration</i>	<i>Organization</i>
Sep. 7-11, 2015	ISTE-STTP for Coordinators on Engineering Physics	One week	Indian Institute of Technology Bombay
Dec. 16 -18, 2013	Mathematical Models and Methods in Engineering	Three days	Maulana Azad National Institute of Technology MANIT, Bhopal
Dec. 09 -11, 2013	MATLAB for Researchers (MATLAB-13)	Three days	MANIT, Bhopal
Oct. 21-25, 2013	Recent Advances in Renewable Energy Systems	One week	MANIT, Bhopal
Aug. 24, 2013	Academic Workshop on Design and Management of Change	One day	MANIT, Bhopal
Feb. 27-28, 2013	MATLAB	Two day	MANIT, Bhopal
Dec. 10-11, 2012	Optimisation Techniques	Two day	MANIT, Bhopal
Dec 3, 2012	Filing Income Tax Returns	One day	MANIT, Bhopal
Nov 10-11, 2012	Akash for Education ISTE sponsored	Two day	IIT Bombay and MANIT
Oct 11-12, 2012	Smart Grid Technologies: Opportunities and Challenges	Two day	MANIT, Bhopal
Feb 21-25, 2011	Mission 10X ISTE/WIPRO sponsored workshop on High Impact Teaching	One week	MANIT, Bhopal
Feb 14-16, 2011	22 nd Annual General Meeting of Materials Research Society of India (MRSI)	Three day	AMPRI, Bhopal
Feb 11-12, 2011	Workshop on Patent Drafting	Two day	MANIT Bhopal
March 22-23, 2010	National Seminar on Advanced Applications of Glasses	Two day	VNIT, Nagpur
Feb 18-22, 2008	Q.I.P. Short Term Course on Nanostructured Materials: R & D	One week	Indian Institute of Technology IIT, Roorkee
May 30-31, 2007	Write for Results	Two day	TWI Technology Centre, Cambridge UK
May 21-25, 2007	Appreciation of NDT Techniques	One week	TWI Technology Centre, Cambridge UK
Dec 13-14, 2006	Project Management Skills	Two day	TWI Technology Centre, Cambridge UK
Dec 11, 2006	Project Pricing and Cost Estimation	One day	TWI Technology Centre, Cambridge UK
March 06-10, 2006	Q.I.P Short Term Course on Programmable Logic Controllers (PLC)	One week	Centre for Research and Industrial Staff Performance (CRISP), Bhopal

Feb 13-17, 2006	Q.I.P Short Term Course on VLSI Technology	One week	Centre for Research and Industrial Staff Performance (CRISP), Bhopal
Jul 12-16, 1993	Characterisation of Materials	One week	IIT Delhi

Conferences/seminars attended/presented, Invited lectures

Duration	Conferences / Seminars attended	Title of paper presented
Nov 7-11, 2016	International Conference on Technologically Advanced Materials & Asian Meeting on Ferroelectricity (ICTAM-AMF10), DU Delhi	Member of the National Steering Committee
April 21-25, 2014 (Five Days)	Materials Research Society Spring Meeting, San Francisco, USA	Efficiency Enhancement in Dye Sensitized Solar Cells through Step Wise Cosensitization of TiO ₂ Electrode with N719 and Metal Free Dye
Feb 23-24, 2013 (Two days)	International conference on "Emerging Technologies Micro to Nano -2013 (ETMN-2013) BITS Goa	Session Chair
March 13-16, 2012 (Four days)	International Conference and Workshop on Nanostructured Ceramics and other Nanomaterials (ICWNCN), DU Delhi	Magnetic Properties of Ni _{1-x} Zn _x Fe ₂ O ₄ (x = 0, 0.5 and 1) Grown by Chemical Co-precipitation Method
March 1-3, 2012 (Three days)	National Conference on Advances in Nanomaterials and Nanotechnology for Renewable Energy Conversion and Storage Devices, JEC, Jaipur	Dye sensitized solar cells sensitized using a perylene monoimide derivative
Feb 27-29, 2012 (Three days)	National Conference on Materials for Advanced Technologies (NCMAT-2012) ABV- IIITM Gwalior	Investigations of Cobalt and Nickel-Zinc Ferrite Nanoparticles
Dec 9-11, 2011 (Three days)	International Conference on Sustainable Habitat Summit, Delhi	New innovations in sustainability research
Nov 19-20, 2011 (Three days)	National Symposium on Recent Advances in Nanoscience, Engineering & Technology (RANET-11) ABV-IIITM Gwalior	Ferrite Nanoparticles
Dec 17-20, 2009 (Four days)	Indian-Japan Workshop on Biomolecular Electronics & Organic Nanotechnology for Environment Preservation (IJWBME-2009), NPL Delhi	Synthesis and Characterisation of two-dimensional grapheme lamellae-based PAn Nanocomposite
Dec 13-17, 2009 (Five days)	International Conference on Elecetroc ceramics (ICE-2009), DU Delhi	Temperature Dependence and Non-linearity of Composite and Composition Gradient Dielectrics
Aug 24-27, 2004 (Four days)	IEEE International Ultrasonics, Ferroelectrics, and Frequency Control 50 th Anniversary Joint Conference, Montreal, Canada	An investigation of BST: MgTiO ₃ and X7R:MgTiO ₃ based ceramics for microwave applications
Jan 2004 (One day)	UK-Korea International Microwave Dielectrics Network Conference, University of Manchester, UK	X7R:MgTiO ₃ Based dielectrics for microwave applications
28 Apr -01 May 2002 (Four days)	104 th Annual Meeting & Exposition of the American Ceramic Society, St. Louis, USA	Evaluation of the degradation of TBCs using impedance spectroscopy
Aug 18-21, 1996 (Four days)	X th IEEE International Symposium on the Applications of Ferroelectrics, Rutgers University, New Jersey, USA	Characterisation of Sol-Gel Derived PZT and PLZT Thin Films