Dr. Kriti Sharma
Assistant Professor
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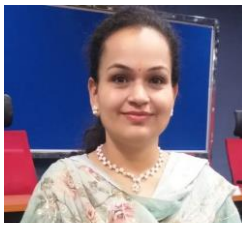

Educational Qualifications

Ph.D. in Materials Science
Department of Physics, Panjab University, Chandigarh (2013).
Ph.D. Thesis:*Study of Density of States Distribution of Nanocrystalline CdX (X=Se,Te) Thin Films byPhotoconducting Techniques.*
Ph.D. Supervisors: Prof. S.K. Tripathi and Prof. G.S.S. Saini.
Qualified **UGC (JRF) in Physics** 2010.
M.Sc. Hons. (Physics) -Department of Physics, Panjab University, Chandigarh, India (2006-2008).
Bachelor of Science - Govt. College for Women, Ludhiana Punjab, India. (2003-2006)

Teaching/Research Experience

- 2013-2014

Postdoctoral Researcher, Information Device Science Laboratory, Nara Institute of Science and Technology, 8916-5 Takayama-cho, Ikoma, Nara 630-0192, JAPAN (2013-2014).

- August 2, 2014-till date.

Assistant Professor, Department of Physics, G.G.D.S.D. College, Sec 32-C, Chandigarh-160030.

Areas of Interest

- Preparation of thin films and their characterization, Energy storage devices, supercapacitors, batteries, 2D materials etc.

Publications (Journal/Book Chapters)

Journal Publications:

1. Yamini Gupta, Poonam Siwatch, Reetika Karwasra, Kriti Sharma , S.K. Tripathi, “Recent progress of layered structured P2- and O3- type transition metal oxides as cathode material for sodium-ion batteries”, Renewable and Sustainable Energy Reviews, vol. 192, pp. 114167, Elsevier, 2024.

2. Anmol Arora, Kriti Sharma, S.K. Tripathi, “Influence of precursors on hydrothermal synthesis and electronic properties of Molybdenum Di- selenide”, Applied Physics A, vol. 129, pp. 654, Springer, 2023.

3. Poonam Siwatch, Kriti Sharma, Nirmal Manyani, Ravneet Kaur, S.K. Tripathi, “Three-dimensional hollow sulphide nanocomposites for supercapacitor electrodes”, Current Applied Physics, vol. 53, pp. 25-38, Elsevier, 2023.

4. Nirmal Manyani, Poonam Siwatch, Shweta Rana, Kriti Sharma, S.K. Tripathi, “Study of Electrochemical Behaviour of Binder-free Nickel Metal-Organic Framework derived by Benzene-1,3,5-tricarboxylic acid for Supercapacitor Electrode”, Materials Research Bulletin, vol. 165, pp. 112320, Elsevier, 2023.

5. Yamini Gupta, Poonam Siwatch, Reetika Karwasra, Kriti Sharma, S.K. Tripathi, “Transition Metal Oxides as the Electrode Material

for Sodium-Ion Capacitors" Nanofabrication,vol. 8, pp. 1, Eurasia Academic Publishing Group, 2023.

6. Anmol Arora, Kriti Sharma, S.K. Tripathi, "Impact of luminescent $MoSe_2$ quantum dots on activity of trypsin under different pH environment" Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy vol. 302, pp. 122958, Elsevier, 2023.

7. Arora, K. Sharma and S. K. Tripathi, "Influence of reaction temperature, time and molar ratio on hydrothermal synthesis of MoS_2 nanosheets", Digest Journal of Nanomaterials and Biostructures, vol. 17, pp. 871-880, Forum of chalcogeniders, 2022.

8. Kriti Sharma, Ravneet Kaur, Anmol Arora, G.S.S. Saini, S.K. Tripathi, "Light soaking and annealing induced modification of non-linear and linear optical absorption of nanocrystalline CdTe (nc-CdTe) thin films", Journal of Materials Science: Materials in Electronics, vol. 33, pp. 10657, springer,2022.

9. Poonam, K. Sharma, S.K. Tripathi, "Electrochemical behaviour of nickel cobalt oxide microflowers in different electrolytic systems", Materials Today: Proceedings,vol. 48, pp. 709-712, Elsevier,2022.

10. Poonam Siwatch, Kriti Sharma, Nirmal Manyani and S.K. Tripathi, "Synthesis of Nickel Cobalt Oxide - Reduced Graphene Oxide Nanocomposite using Ammonia for Supercapacitor", ECS Transactions, vol. 107, pp. 11697, IOP Science,2022.

11. Anmol Arora, Kriti Sharma and S.K. Tripathi, "Optimization of growth parameters of thermal chemical vapour deposition method for 2D MoS_2 synthesis", ECS Transactions, vol. 107, pp. 11567, IOP Science,2022.

12. Poonam Siwatch, Kriti Sharma, Navjot Singh, Nirmal Manyani, S.K. Tripathi, "Enhanced supercapacitive performance of reduced graphene oxide by incorporating $NiCo_2O_4$ quantum dots using aqueous electrolyte"Electrochimica Acta, vol. 381, pp. 138235, Elsevier,2021.

13. Poonam Siwatch, Kriti Sharma, Nirmal Manyani, Jasmeen Kang, S.K. Tripathi, "Characterization of nanostructured nickel cobalt oxide-polyvinyl alcohol composite films for supercapacitor application",Journal of Alloys and Compounds, vol. 872, pp. 159409, Elsevier,2021.

14. Poonam Siwatch, Kriti Sharma, Nirmal Manyani, and S.K. Tripathi, "Electrochemical Study of Nanocomposite of Nickel Cobalt Oxide with Reduced Graphene Oxide",AIP Conference Proceedings, vol. 2352, pp. 040016-1-4, AIP Publishing, 2021.

15. Nirmal Manyani, Kriti Sharma, Poonam Siwatch, S.K. Tripathi, "Study of Electrochemical Performance of Ni-BTC MOF as a Supercapacitor Electrode", AIP Conference Proceedings vol. 2352, pp. 020035, AIP Publishing,2021.

16. Poonam Siwatch, Kriti Sharma, S.K. Tripathi, "Facile Synthesis of $NiCo_2O_4$ Quantum Dots for Asymmetric Supercapacitor",

Electrochimica Acta, vol. 329, pp. 135084, Elsevier,2020.

17. Anmol Arora, Kriti Sharma and S.K. Tripathi, "Junction Behavior of CVD Deposited MoS_2 Thin Film with Indium Electrodes", AIP Conference Proceedings, vol. 2220, pp. 020069, AIP Publishing,2020.

18. Nirmal, K. Sharma, Poonam, S.K. Tripathi, "Synthesis and characterization of Ni-BTC MOF for supercapacitor electrode", AIP Conference Proceedings, vol. 2265, pp. 030617, AIP Publishing, 2020.

19. Poonam, Kriti Sharma, Nirmal, and S. K. Tripathi, "Electrochemical performance of nickel cobalt oxide-reduced graphene oxide-polyvinyl alcohol nanocomposite", AIP Conference Proceedings vol. 2220, pp. 020055, AIP Publishing,2020.

20. Poonam, K. Sharma, A. Arora S.K. Tripathi, "Review of supercapacitors: Materials and devices", Journal of Energy Storage, vol. 21, 801-825, Elsevier,2019.

21. Ravneet Kaur, Anmol Arora, Kriti Sharma, K.P. Singh, and S.K. Tripathi, "Optical study of $MoSe_2$-poly(methyl methacrylate) polymer nanocomposites", AIP Conference Proceedings, vol. 2093, pp. 020040, AIP Publishing, 2019.

22. Sheenam Sachdeva, Jagdish Kaur, Kriti Sharma, S.K.Tripathi, "Performance improvements of organic solar cell using dual cathode buffer layers", Current Applied Physics, vol. 18, pp. 1592, Elsevier, 2018.

23. Poonam, Kriti Sharma, Navjot Singh, S.K. Tripathi, "Characterization of nickel cobalt oxide: a potential material for supercapacitor", Materials Research Express, vol. 6, pp. 025502, IOP Science,2018.

24. Kriti Sharma, Poonam, G.S.S. Saini, S.K. Tripathi, "A comparative study of transport properties of copper doped cadmium selenide thin films at two dopant concentrations", Journal of Materials Science: Materials in Electronics, vol. 29, pp. 9596–9604, Springer,2018.

25. Kriti Sharma, Alaa S. Al-Kabbi, G.S.S. Saini and S.K. Tripathi, "Influence of Zn doping on structural, optical and electrical properties of nanocrystalline CdSe thin films", Journal of Alloys and Compounds, vol. 651, pp. 42, Elsevier,2015.

26. S.K. Tripathi, J. Kaur, R. Ridhi, K. Sharma, R. Kaur, "Radiation induced effects on properties of semiconducting nanomaterials",Solid State Phenomena, vol. 239, pp. 1, Scientific.Net,2015.

27. Alaa S. Al-Kabbi,Kriti Sharma, G.S.S. Saini and S.K. Tripathi, "Effect of doping on transport properties of nanocrystalline CdSe thin film", Thin Solid Films,vol. 586, pp. 1,Elsevier,2015.

28. S.K. Tripathi, Sheenam Sachdeva, Kriti Sharma and Jagdish Kaur,

"Progress in Plasmonic Enhanced Bulk Heterojunction Organic/Polymer Solar Cells", Solid State Phenomena, vol. 222, pp. 117, Scientific.Net,2015.

29. Jagdish Kaur, Baljinder Singh, Kriti Sharma,S.K. Tripathi, "Study of sub gap optical absorption parameters in Pb doped CdSe thin films", AIP Conference Proceedings, vol. 1665, 050009, AIP Publishing, 2015.

30. Kriti Sharma, G.S. Saini, S.K. Tripathi, "Transient photoconductivity measurements of In-doped CdSe thin films", AIP Conference Proceedings, vol. 1675, pp. 030079, AIP Publishing,2015.

31. Jagdish Kaur, Kriti Sharma, Shivani Bharti, S.K. Tripathi, "Thermally induced effect on subbandgap absorption in Ag doped CdSe thinfilms", AIP Conference Proceedings, vol. 1661, pp. 050005, AIP Publishing,2015.

32. S.K. Tripathi, Alaa. S. Al-Kabbi, Kriti Sharma, R. Ridhi, and G. S. S. Saini, "Determination of trap depth in nc-CdSe:Cu thin films using thermally stimulated current measurements",AIP Conference Proceedingsvol. 1591, pp. 256, AIP Publishing,2014.

33. Keisuke Kado, Mutsunori Uenuma, Kriti Sharma, Haruka Yamazaki, Satoshi Urakawa, Yasuaki Ishikawa and Yukiharu Uraoka, "Thermal analysis for observing conductive filaments in amorphous InGaZnO thin film resistive switching memory", Applied Physics Letters, vol. 105, pp. 123506, AIP Publishing, 2014.

34. Alaa S. Al-Kabbi, Kriti Sharma, G.S.S. Saini and S.K. Tripathi, "Mobility lifetime product in doped and undoped nanocrystalline CdSe", Thin Solid Films, vol. 548, 406, Elsevier,2013.

35. Alaa S. Al-Kabbi, Kriti Sharma, G.S.S. Saini and S.K. Tripathi, "Effect of doping on trapping center parameters in nanocrystalline CdSe thin films",Journal of Alloys and Compounds vol. 555, pp. 1, Elsevier, 2013.

36. Alaa S. Al-Kabbi, Kriti Sharma, G.S.S. Saini and S.K. Tripathi, "Determination of the transport parameters of nanocrystalline CdSe:Cu thinfilms", Physica Scripta, vol. 87, 025604, IOP Science, 2013.

37. Kriti Sharma, Alaa S. Al-Kabbi, G.S.S. Saini, S.K. Tripathi, "Indium doping induced modification of the structural, optical and electrical properties of nanocrystalline CdSe thin films", Journal of Alloys and Compounds, vol. 564, pp. 42, Elsevier,2013.

38. Kriti Sharma, Alaa S. Al-Kabbi, G.S.S. Saini, S.K. Tripathi, "Thermally and optically induced effects on sub-bandgap absorption in nanocrystalline CdSe (nc-CdSe) thin films", Current Applied Physics, vol. 13, pp. 964, Elsevier,2013.

39. Kriti Sharma, Alaa S. Al-Kabbi, G.S.S. Saini and S.K. Tripathi, "Tuning the optical properties in nanocrystalline Zn doped CdSe thin films by light soaking", AIP Conference Proceedings, vol.

1512, pp. 200, AIP Publishing, 2013.

40. Kriti Sharma, Alaa S. Al-Kabbi, G.S.S. Saini, S.K. Tripathi, "Effect of Cu incorporation on structural and optical properties of nanocrystalline CdSe (nc- CdSe:Cu) thin films", Journal of Alloys and Compounds, vol. 540, pp. 198, Elsevier, 2012.

41. Kriti Sharma, Alaa S. Al-Kabbi, G.S.S. Saini, S.K. Tripathi, "Electrical conduction mechanism in nanocrystalline CdTe (nc-CdTe) thin films in different temperature ranges", Applied Physics A, vol. 108, pp. 911, Springer,2012.

42. Kriti Sharma, Alaa S. Al-Kabbi, G.S.S. Saini and S.K. Tripathi, "Determination of dispersive optical constants of nanocrystalline CdSe (nc-CdSe) thin films", MaterialResearch Bulletin, vol. 47, 1400, Elsevier,2012.

43. Kriti Sharma, Alaa S. Al-Kabbi, G.S.S. Saini and S.K. Tripathi, "Temperature variation of optical parameters in nc-CdSe thin films", AIP Conference Proceedings, vol. 1447, pp. 227, AIP Publishing,2012.

44. Alaa S. Al-Kabbi, Kriti Sharma, G.S.S. Saini, and S.K. Tripathi, "Determination of the μτ products of nanocrystalline CdSe:Cu thin films using photocurrent spectroscopy", AIP Conference Proceedings, vol. 1451, pp. 91, AIP Publishing,2012.

45. Alaa S. Al-Kabbi, Kriti Sharma, G.S.S. Saini, and S.K. Tripathi, "Diffusion length measurement in nanocrystalline CdSe from steady state photocarrier grating technique",AIP Conference Proceedings, vol. 1393, pp. 269, AIP Publishing,2011.

46. Kriti Sharma, A.S. Al-Kabbi, Baljinder Singh, G.S.S.Saini, and S.K.Tripathi, "Subbandgap absorption in as-deposited and annealed nc-CdSe thin films using Constant Photocurrent Method (CPM)", AIP Conference Proceedings, vol. 1393, pp. 217, AIP Publishing, 2011.

47. G.S.S. Saini, Sukhdev Dogra, Kriti Sharma, Sukhwinder Singh, S.K. Tripathi, Vasant Sathe, Ranjan K. Singh, "Experimental and density functional theoretical study of the effects of chemical vapours on the vibrational spectra of nickel phthalocyanine thin films", Vibrational Spectroscopy, vol. 57, pp. 61, Elsevier,2011.

Book Chapters:

1. Yamini Gupta, Poonam Siwatch, Shweta Rana, Reetika Karwasra, Kriti Sharma and S.K. Tripathi, *"Structural and Electrochemical Characterizations of Sodium Doped Bimetallic Layered Nanocomposite for Sodium-Ion Capacitors"*, Proceedings of Recent Advances in Nanotechnology, Select Proceedings of ICNOC 2022, Springer Vol. 28, 431-436. ISBN No. 978-981-99-4684-6.

2. Kriti Sharma, *"Carbon Footprint: Textile & Apparel Industry"*, Book titled *"Green Fashion and Sustainability"*, Abhishek Publications Chandigarh/New Delhi, Page 7-14, 2023. ISBN No.

978-93-5652-616-7.

3. Kriti Sharma, *"Atmosphere"* Book titled *"Environment, Road Safety, Violence Against Women & Children and Drug Abuse"*, Page 14, 2020. ISBN No. 978-93-86558-26-8.

4. Kriti Sharma, *"Atmosphere"* Book titled *"Environment, Road Safety, Violence Against Women & Children and Drug Abuse"* Page 14, 2018. ISBN No. 978-93-82068-26-8.

5. Kriti Sharma, *"Atmosphere"* Book titled *"Environment, Road Safety, Violence Against Women & Children and Drug Abuse"* Page 14, 2017. ISBN No. 978-93-82068-29-7.

Seminars/ Conferences/Symposiums (Paper Presented)

1. Presented a paper titled "Electrochemical and Structural Evaluation ofSodium-Layered Transition Metal Oxides for Sodium-Ion Capacitors" in *National Conference on Novel Materials for Sustainable Development (NMSD-2024)*at Department ofPhysics, Government Degree College, Porumamilla -516193, A.P., India (March 15 -16, 2024).

2. Presented paper titled "Strategies for Responsible Fashion Consumption for Sustainability" in ICSSR Sponsored *International Seminar on Sustainable Development in India: Strategies and Way Ahead* jointly organized by PG Department of Commerce, Management and Economics, Goswami Ganesh Dutta Sanatan Dharma College, Sec 32-C, Chandigarh (February 27, 2024).

3. Presented Paper titled "Layered Sodium Nickel manganese Oxide as an Electrode Material for Na-ion Capacitor" in *3rd National Seminar on Recent Advances in Physics RAP-2023* organized by Goswami Ganesh Dutta Sanatan Dharma College, Sec 32-C, Chandigarh (October 7, 2023).

4. Presented paper titled "Bio-waste as an Electrode Material for Energy Storage Devices: A sustainable Approach to Green Energy" in *International Conference on "Recent Trends in Advanced Materials* organized by School of Physical Sciences, PC Jabin Science College, Vidya Nagar, Hubli, Karnataka (September 2, 2023).

5. Presented paper titled "A Sustainable Approach to Green Energy using Bio-waste as Electrode Material for Energy Storage Devices" in DHE, Haryana sponsored *One day Interdisciplinary International Conference on the topic of Ecology: Interpretations, Intersections and Interstices* organized by FDP Cell, Arya Kanya Mahavidyalaya, Shahabad, Markanda, Haryana(March 28, 2023).

6. Presented paper titled "Layered Transition Metal Oxides as Promising Electrode Materials for High Performance Energy Storage Devices" in *5th National Seminar on Recent Advances in Materials Science* organized by Goswami Ganesh Dutta Sanatan Dharma College, Sec 32-C, Chandigarh (September 30, 2022).

7. Presented a research paper (oral) titled "Structural and Optical Characterization of Sodium Doped Bimetallic Layered-Nanocomposite" in *International Conference on Frontiers in Physics, Materials Science and Nanotechnology (FPMSN-2022)* at Chaudhary Devi Lal University, Sirsa (March 25-26, 2022).

8. Presented paper in 27th International Conference of International Academy of Physical Sciences (CONIAPS XXVII) on *Recent Advances in Solid Mechanics and Seismology* on October 26-28, 2021 organized by Department of Mathematics Kurukshetra University, Kurukshetra, India.

9. Presented paper titled "Investigation of MOF as Electrode Material for Supercapacitor Application in the *14th Chandigarh Science Congress* jointly organized by Panjab University andChandigarh Region Innovation and knowledge cluster (December 17 -19, 2020).

10. Presented a paper "Study of Electrochemical Performance of Ni-BTC MOF as a Supercapacitor Electrode" at *5th National e-Conference on Advanced Materials and Radiation Physics (AMRP-2020)* organized by Department of Physics, SLIET, Longowal (November 9, 2020 - November 11, 2020).

11. Presented a paper entitled "Synthesis and Characterization of MoS_2 thin films using Modified CVD method" in *4th National Seminar on Recent Advances in Materials Science (RAMS 2020)* organized by Department of Physics, GGDSD College, Sec 32-C, Chandigarh (February 1,2020).

12. Participated as a delegate and presented a paper titled "E Waste Management: As a Challenge to Public Health in India" in the one-day Multi-Disciplinary National Seminar on *Role of Higher Education Towards Promoting Environment Sustainability* organized by Government College for Women, Shahzadpur, Ambala (January 24, 2020).

13. Presented paper entitled "Evaluation of Dispersive Optical Constants of nano-crystalline Zn doped CdSe thin films" in *13th Chandigarh Science Congress* held at Panjab University, Chandigarh (March 13-15, 2019).

14. Presented paper "Structural and Optical Properties of Inorganic Perovskite and Hybrid Perovskite Thin Films Fabricated Layer by Layer" in *1st International Conference on Advances in Nanomaterials and Devices for Energy and Environment (ICAN 2019)* in ABV-IIITM Gwalior (January 27-29, 2019).

15. Presented paper titled "Nickel Cobalt Oxide ($NiCO_2O_4$) as promising electrode material for electrochemical energy storage" in *International Symposium on Functional Materials: Energy and Biomedical applications (ISFM-2018)* in Hotel Shivalik View, Chandigarh (April 13-15, 2018).

16. Presented paper titled “Effect of doping on Subbandgap Absorption Spectra of Doped CdSe Thin Films” in *one day National Seminar on Advancement in Science and Technology (ONSAST-2017)*organized by Dept. of Applied Sciences, PEC University of Technology, Sec 12, Chandigarh (March 4, 2017).

17. Presented paper titled “Optical Absorption Measurements of n-CdSe Thin Films” in *National Seminar on Emerging Trends in Nanoscience and Nanotechnology*organized by GuruGobind SinghCollege for Women, Sec 26, Chandigarh (February 18, 2017).

18. Presented paper titled “Determination of Transport Properties of Annealed NanocrystallineCdSe (nc-CdSe) thin films” in two days *National Conference on Research Trends in Physics and Electronics NPE-2016* in SGGS Khalsa College, Mahilpur (November 25-26, 2016).

19. Presented paper titled “Sub bandgap Absorption Studies of Doped CdSe Thin Films” in *2nd National Seminar on “Recent Advances in Material Science (RAMS)-2016”* organized by GGDSD College, Sector 32-C, Chandigarh (September 17, 2016).

20. Presented paper titled “TransientPhotoconductivityMeasurements of IndopedCdSe thin films” in *4th National Conference on Advanced Materials and Radiation Physics (AMRP-2015)* atSant Longowal Institute of Engineering and Technology, Longowal, Distt. Sangrur-148106 (March 13-14, 2015).

21. Presented paper titled “Steady State Photocarrier Grating Technique-Measurement of Doped Nanocrystalline CdSe Thin Films” in *7th Chandigarh Science Congress (CHASCON-2013)* organized by Panjab University, Chandigarh (March 1-3, 2013).

22. Presented paper titled “Evaluation of Optical Absorption Coefficient in the Subband gap energy range in nanocrystalline Zinc doped CdSe (nc-CdSe:Zn) thin films” in *6th Chandigarh Science Congress (CHASCON-2012)* organized by Panjab University, Chandigarh (February 26-28, 2012).

23. Presented paper titled “Evaluation of subband gap optical absorption coefficient in copper doped CdSe (CdSe:Cu) thin film using photoconducting technique” in *International Conference NanoSciTech 2012* organized by Panjab University, Chandigarh (February 16-18, 2012).

24. Presented paper titled “Preparation and characterization of II-VI semiconducting nanocrystalline thin films” in *5th Chandigarh Science Congress (CHASCON-2011)* organized by Panjab University, Chandigarh (February 26-28, 2011).

25. Presented paper titled “Sub-band gap absorption in as-deposited andannealed nc-CdSethin films byConstantPhotocurrent Method” in

International Conference on Advances in Condensed and Nanomaterials (ICACNM-2011) organized by Dept. of Physics, Panjab University, Chandigarh-160014 (February 23, 2011).

26. Presented paper titled "Temperature Variation ofOpticalParameters in nc-CdSe Thin Films" in *56th DAE Solid State PhysicsSymposium 2011*,organized by SRMUniversity,Kattankulathur,Tamil Nadu (February 19, 2011).

27. Presented paper titled "Analysis of optical and dispersion parameters of nanocrystalline CdSe thin films" in *International Conference on Multifunctional Materials* organized by Banaras Hindu University, Varanasi (December 6-9, 2010).

28. Presented paper titled "Optical absorption measurements of n-CdSe thin films" in *Nat. Conf. on Emerging Trends in Nanotechnology* in S.D. College, Ambala (March 30-31, 2010).

29. Presented paper titled "Subband gap absorption measurements of n-CdSe thin films" in *4th Chandigarh Science Congress (CHASCON-2010)* organized by Panjab University, Chandigarh (March 19-20, 2010).

30. Presented paper titled "Effect of Bi addition on the physical parameters of a Ge-Se alloy" in *National Conference on Recent Advances in Condensed Matter Physics (RACMP-09)* organized by NIT Hamirpur (May 23-24, 2009).

31. Presented paper titled "Imidazole chloranil complexes studied by density functional theory and infrared techniques" in *3rd Chandigarh Science Congress (CHASCON-2009)* organized by Panjab University, Chandigarh (February 26-28, 2009).

32. Presented paper titled "Electrical properties of In_xSe_{1-x} thin films" in *3rd Chandigarh Science Congress (CHASCON-2009)* organized by Panjab University, Chandigarh (February 26-28, 2009).

Refresher Courses/Workshops/Training Programmes

1. Participated in the One Week Online National Level FDP on "Recent Advances in Functional Materials and Characterizations" organized by Department of Physics, SRM Institute of Science and Technology, Ramapuram, Chennai on 25th to 30th November 2024.

2. Completed the online – NEP 2020 Orientation & Sensitization Programme under Malaviya Mission Teacher Training Programme (MM-TTP) of University Grants Commission (UGC) organized by UGC-Malaviya Mission Teacher Training Centre (MMTTC), Panjab University, Chandigarh from 01.02.2024 to 14.02.2024.

3. Completed One-Week National Faculty Development Program (FDP) on "Subject-Specific Benchmarking of Learning Outcomes: Outcome-Based Education" jointly organized by Goswami Ganesh Dutta Sanatan Dharma College, Chandigarh and

Guru Angad Dev Malaviya Mission Teacher Training Centre, SGTB Khalsa College, University of Delhi from 26th October to 01st November 2023.

4. Participated in one week on-line Short-Term Course on "Optical materials and Characterization Techniques &Synchrotron radiation and Neutron based Characterization Techniques" organized by Department of Physics, NIT Uttarakhand from 24.02.2023 to 03.03.2023.

5. Participated in the Faculty Development Programme on "Information Sources and Services for Teaching, Learning and Research" in collaboration with A.C. Joshi Library, Panjab University, Chandigarh conducted by Human Resource Development Centre, Panjab University, Chandigarh under RUSA 2.0 grant from 01.02.2022 to 07.02.2022.

6. Participated in Online Training Session on "EBSCO eBook Academic Collection and EBSCO Mobile App" organized by College Library, Goswami Ganesh Dutta Sanatan Dharma College, Sector 32, Chandigarh on July 12, 2021.

7. Participated in the 2 days online workshop on "Scanning Electron Microscopy: Technique and its Applications" organized by North East Centre for Biological Sciences and Healthcare Engineering, Indian Institute of Technology Guwahati, Assam in collaboration with Zeiss India, with support of Department of Biotechnology, Govt. of India as part of Azadi ka Amrit Mahotsav form 15th – 16th June, 2021.

8. Participated in seven days National Faculty Development Programme on "Improving the Teaching and Research Acumen" organised by Goswami Ganesh Dutta S.D. College, Kheri Gurna, Banur from June 7-13, 2021.

9. Participated in one day workshop on National Education Policy-2020: Opportunities in Research and Innovation organized by School of Physical Sciences, Jawaharlal Nehru University, New Delhi, India on March 31, 2021.

10. Completed two-Week Interdisciplinary Refresher Course/Faculty Development Programme for "Advanced Research Methodology Tools and Techniques" organized by Teaching Learning Centre, Ramanujan College, University of Delhi Under the Aegis Of Ministry Of Education Pandit Madan Mohan Malaviya National Mission on Teachers and Teaching from January 30, 2021 - February 14, 2021.

11. Participated in Short Term Couse on "Novel Multifunctional Materials" sponsored by TEQIP-III and organized by Department of Applied Sciences, Punjab Engineering College (Deemed to be University), Chandigarh from Jan 11, 2021 to Jan 16, 2021.

12. Participated in one week online short-term course on "Recent Advances in Optical and Magnetic Materials" sponsored by TEQIP III jointly organized by Dept. of physics, NIT Uttarakhand

and Dept. of Physics, SLIET Longowal held from Dec. 14, 2020 to Dec. 18, 2020.

13. Completed the "1st Online Short-Term Course on Quality in Higher Education" organized by UGC –Human Resource Development Centre, Gujarat University, Ahmedabad from Dec. 7, 2020 to Dec. 13, 2020.

14. Participated in a One week online Short-Term Course on "Advanced Functional Materials (AFMAT-2020)" organized by Department of Physics, Sant Longowal Institute of Engineering and Technology, Longowal from 28.9.2020 to 2.10.2020.

15. Participated in one week Faculty Development Program on "Effective Online Teaching and Learning" through video conferencing organized by Dr. SSBUICET, Panjab University in collaboration with Dibrugarh University Institute of Engineering and Technology, Assam under TEQIP-III (MHRD, Govt. of India) from September 14 to September 19, 2020.

16. Completed one week faculty development program on "DevelopingMultimedia enriched Powerful Presentations" organized by Guru Angad Dev Teaching Learning Centre SGTB Khalsa College, University of Delhi from 11.08.2020 to 16.08.2020.

17. Participated in 100th Online Short-Term Course on "E - Content Development" organized by UGC – Human Resource Development Centre, GUJARAT UNIVERSITY, Ahmedabad from 23.7.2020 to 29.7.2020.

18. Completed one Week Faculty Development Programme on "Biological Data Analysis and Data Science" under RUSA organized by Department of Bioinformatics and Biochemistry, GGDSD College, Chandigarh from February 27- March 4, 2020.

19. Completed National Workshop (FDP) on "Technology and Instructional Reforms with reference to Online Teaching, Learning & Evaluation" organized by Centre for Academic Leadership and Education Management (CALEM), Panjab University, Chandigarh from 15.7.2020 to 20.7.2020.

20. Participated in 8 Hours of Faculty Development Program on "Process Management in Problem Solving (Online Live FDP)" conducted by ICT Academy from 3.6.2020 to 8.6.2020.

21. Participated in 5 days "Hands on FDP: Data Science using Python" organized by Department of Information Technology of Jeppiar Institute of Technology from 18.5.2020 to 22.5. 2020.

22. Completed Six days International Faculty Development Program on "Novel Materials for Energy and Biomedical (Covid-19) Healthcare Application" organized by Department of Science & Humanities, M. Kumarasamy College of Engineering (Autonomous), Karur from 11.5.2020-16.5.2020.

23. Participated in the Six days online workshop on "Research

Ethics and Quantitative Techniques for Research and Publications" organized by College library, Goswami Ganesh Dutta S.D. College, Chandigarh from 25th April to 30th April 2020.

24. Participated in two days Science Academies' Lecture Workshop on Materials Engineering for Sustainable Environment and Energy (MESEE-2020) Chandigarh held at CSIR-CSIO, Chandigarh during January 9-10, 2020.

25. Participated in the workshop on Electrochemical Techniques for Energy, Sensor and Corrosion Application (WET-2019) held at CSIR-CSIO, Chandigarh on November 18-19, 2019.

26. Participated in workshop on "Innovative Experiments in Physics" organized by Department of Physics, G.G.D.S.D. College, Chandigarh on March 30,2019.

27. Completed Refresher Course in "Experimental Physics" organized by Dept. of Physics, PU, Chandigarh from June 16, 2015 to July 1, 2015.

28. Completed Refresher Course in "Research Methodology in Physical and Life Sciences" organized by Department of Physics, Panjab University, Chandigarh under the auspices of the UGC Human Resource Development Centre, Panjab University, Chandigarh from 16.5.2017 to 5.6.2017.

29. Completed 111th Orientation Programme organized by UGC - HRD Centre Academic Staff College, Panjab University, Chandigarh from 26.05.2016 to 22.06.2016.

Invited Talks

1. Delivered a lecture on *"Nanomaterials: Synthesis & Characterization"* on 23.11.2022 in online Short-term course on Refresher Course in Engineering Physics (ICT-135) conducted by NITTTR, Chandigarhfrom November 14 – 25, 2022.

2. Acted as resource person and delivered lecture on *"Stefan's Constant of Radiation"* in 94th Two-week Refresher Course in Experimental Physics organized by Panjab University, Chandigarh, Indian Academy of Sciences Bangalore (IASc), Indian National Science Academy, New Delhi (INSA), The National Academy of Sciences India, Allahabad (NASI)from December 18,2017 to January 2, 2018.

3. Acted as resource person and delivered lecture on *"Young's Modulus of Brass by Flexural Vibrations of a Bar"* in 79th Two-week Refresher Course in Experimental Physics organized by Panjab University, Chandigarh, Indian Academy of Sciences Bangalore (IASc), Indian National Science Academy, New Delhi (INSA), The National Academy of Sciences India, Allahabad (NASI)from September 25,2016 to October 10, 2016.

Project

- DST SERB Sponsored research project "Investigation of the Properties of 2-D Materials for the Device Fabrication and its Biosensing Application" of 23 lakhs from March2018-2021.

PhD Thesis

- Degree Awarded-02
    - Dr. Poonam (Degree awarded February 18, 2020)
      Thesis title: Study of Nanocomposites for Supercapacitor Application.
    - Dr. Anmol (Degree awarded August29, 2023)
      Thesis title: Investigation of Transport Properties of Transition Metal Dichalcogenides for Electronic Applications
- Thesis Submitted-1
  Ms. Nirmal (Thesis submitted on May 31, 2024)
  Thesis title: Study of Metal Organic Frameworks(MOFs) Based Nanocomposite Material for Supercapacitor Applications
- Currently Supervising-02
  Ms. Yamini Gupta
  Ms. Reetika Karwasra

Administrative Experience

- Member BOSONS-The Physics Club.
- Member of Undergraduate Board of Studies (UGBoS) Panjab University, Chandigarh w.e.f. 23.3.2023-23.3.2025.
- Deputy Superintendent in Panjab University Semester Examination December 2017 & December 2024.
- Centre Superintendent Duty in Panjab University Semester Examination from 26.11.2022 to 15.1.2023.
- Organizing Secretary of National Seminar on Recent Advances in Materials Science (RAMS 2019) on January 30, 2019.
- Organizing secretary of 4th National Seminar on "Recent Advances in Materials Science" (RAMS 2020) on February 01, 2020.
- Organizing secretary of 6th National Seminar on "Recent Advances in Materials Science" (RAMS 2024) on October 16, 2024.

Membership of Physics Associations

- Indian Asso. of Phys. Teachers (IAPT)
- Chandigarh Vigyan Parishad
- Chandigarh Region Innovation &
- Knowledge Cluster (CRIKC)
- Indian Physics Association (IPA)

Reviewer of Journals

- ACS Publications
- Journal of Energy Storage
- Electrochimia Acta
- Materials Chemistry and Physics
- Materials Today Communications
- International Journal of Hydrogen Energy