DR. SUMAN MAHENDIA

Professor, Department of Physics, Kurukshetra University, Kurukshetra, Haryana -136119, INDIA
Joined the Department of Physics, Kurukshetra University, Kurukshetra, as Assistant Professor in July, 2007
Joined the Department of Physics, Kurukshetra University, Kurukshetra, as Associate Professor in July, 2019
(M): +91 9466095387; **DOB:** 12-06-1983
Email: mahendia@gmail.com; smahendia@kuk.ac.in
Tagline: "Transforming Waste into Clean Energy Solutions for a Sustainable Future"

EDUCATION

Ph.D. (PHYSICS)(K. U. Kurukshetra) **2007-2011**
Title of thesis: ***"Synthesis and Characterization of Metal Nanoparticles Embedded Poly(vinyl alcohol) (PVA) Nanocomposites"***

B.Sc. (**COMPUTER SCIENCE**) (**K.U, KURUKSHETRA**) 2000-2003

B.Ed (Kurukshetra University, Kurukshetra, India**)** **2005-2006**
M.Sc. (PHYSICS) (K.U, Kurukshetra, India**)** **2003-2005**

HONOURS AND AWARDS

- Prerna Award 2024 for Best Teaching and Research contribution to Science and Society by Dr. J.S. Yadav Memorial Charitable Trust, KKR.
- KUK Applause Certificate 2024 for effective and active work in implementing NEP-2020
- Women In Stem (WIS-Forum) Best Researcher Award 2023 under the Category of Maximum Citation of the year
- Women In Stem (WIS-Forum) Best Researcher Award 2023 under the Maximum Research Grant of the year.
- American Chemical Society Best Presentation Award 2023 at CANDEE-23
- Invited and Honored by Governor Haryana at Raj Bhawan, Chandigarh under the capacity of Best Researcher from University, on 15th August 2023

RESEARCH HIGHLIGHTS

- **Research Area:** Plasmonic nanoparticles for SERS and optical sensors; polymer nanocomposites for EMI shielding; **waste-to-energy up-conversion of biomass and plastic waste into advanced nanostructured electrodes for supercapacitors and batteries**; porous 2D nanostructures for water splitting and **green hydrogen generation**.
  Our research group integrates waste management, renewable energy storage, and clean fuel production to directly address environmental sustainability, societal energy needs, and public health concerns arising from waste pollution.

ORCID iD: 0000-0002-4924-4546

- **Published paper:** 45 (International peer reviewed Journals); **Under Process:**4
- **International Conference/Workshops attended:** 25
- **Conference Proceedings:** 24
- **Patent:** 3 (Published)
- **Book Chapter:** 5 completed in Springer series, Wiley; Nova Scientific; 1 under process in RSC
- **Invited Lecture:** 25
- **Projects:** 3 (completed); 3 (Under Process); 1 (Submitted)
- **Invited talk:** about 30 invited talks in national and international conferences, Symposium, workshops and Refresher courses
- **M. Sc Project:** 8(Guided)
- **PhD:** 5(Guided)

"SOCIETAL & ENVIRONMENTAL IMPACT OF RESEARCH"

- **Circular Economy Innovation:** Pioneering conversion of agricultural residues and plastic waste into functional nanomaterials, reducing landfill and pollution while enabling renewable energy storage.
- **Clean Energy Contribution:** Developed low-cost, high-performance electrodes and catalysts for **supercapacitors, batteries, and green hydrogen generation**, promoting energy security and reducing dependence on fossil fuels.
- **Direct Public Benefit:** By transforming harmful plastic and biomass waste into useful energy devices, research contributes to **cleaner cities, reduced air and water pollution, and healthier communities**.
- **Sustainability & Policy Relevance:** Research outcomes align with **UN Sustainable Development Goals (SDG 7 – Affordable and Clean Energy, SDG 12 – Responsible Consumption and Production, SDG 13 – Climate Action)**, supporting India's clean energy and waste management missions.

RESEARCH PROJECTS

1. Minor Research Project entitled "**Synthesis of polymer embedded metal nanoparticles for plasmonic sensor application**" from Kurukshetra University, Kurukshetra (2013-2014). **(Completed as PI)**
2. Major Research project entitled "**Synthesis and characterization of graphene decorated with noble metal nanoparticles for electrochemical and optical sensors**" from DST-SERB, New Delhi (Rs 36 lakhs): (August 2015-2019). **(Completed as PI)**
3. Seed Money Project grant entitled "**Development of highly efficient supercapacitive electrode from Bio-mass waste driven porous carbon nanomaterials for energy storage application**" from KUK, (Rs 2 lakhs) (2021-23). **(Completed as PI)**
4. Muti-Institutional Major Project from, NMHS, New Delhi entitled **"Purification and Valorization through Indigenous Tailoring of Raw Polymeric waste into Advanced Multidimensional Carbon Nano Materials (PAVITRAM) for Large Scale Energy Storage applications including Supercapacitors and Batteries** Rs 1.9 Crore (2023-26) **(On Going as Partner and PI from KUK)**
5. Major Research Project submitted to Anusandhan National Research Foundation's (ANRF) Inclusivity Research Grant (IRG) entitled "**Development of electrodes for enhanced Photo-electrochemical (PEC) water splitting application using catalysts based on composites of 2D nanostructures with metal and their oxides nanoparticles**" (2025) (Rs 4097906) **(PI)**
6. Muti-Institutional Major Research Project submitted to Anusandhan National Research Foundation's (ANRF) under PAIR program with IIT Ropar as Hub Institute entitled **"Dynamic Research Ecosystem for Advanced Materials (DREAMS)"** Rs 10.5 Cr. **(PI from KUK as SPOKE Institute)**
7. Muti-Institutional Major Research Project for Centre of Excellence (CoE) under Research and Development Scheme of National Green Hydrogen Mission (NGHM) of Ministry of New & Renewable Energy (MNRE), Hydrogen Division, Govt. of India entitled "**Centre for Integrated Biogas and Methane Decomposition Technology for Green Hydrogen Production**" Rs 22,86,36,480 **(Submitted as Co-PI from KUK)**

PATENTS

1. *Activated Nano-Carbon Soot, Method of Manufacturing Therefore, and Electrodes Produced Therefrom;* ***INDIAN (IN) Patent Application No.: 202211024904; IN Filing Date: 28 April 2022 (Published)***

2. *Controlled Acid Treatment Activated Carbon and Optimization of Graphene Ratio In Modified/Unmodified Activated Carbon-Graphene Composites For Supercapacitor Application;* ***INDIAN (IN) Patent Application No.: IN Filing 202411057818; IN Filling Date: 30 July 2024 (Published)***

3. *ZnCl2 Activated nano carbon soot and composites with waste plastic derived graphene for supercapacitor application thereof;* ***INDIAN (IN) Patent Application No.: 202511018936; IN Filling Date: March 03, 2025 (Filled)***

TEACHING EXPERIENCE

FROM 27 JULY 2007 TO TILL DATE (DEPARTMENT OF PHYSICS, K.U.K**)** TAUGHT **STATISTICAL MECHANICS, ATOMIC AND MOLECULAR SPECTROSCOPY AND PARTICLE PHYSICS**

MEMBER'S OF ACADEMIC AND PROFESSIONAL BODIES

- Life time Member of IAPT
- Life time Member of Vigyan Bharti
- NEP Core-Committee member of NEP-KUK for UG and PG Programmes
- Editorial Board Member of KUK Research Journal
- Member of Academic Council, KUK
- Member of Academic Council, CRSU, Jind
- Member of UGBOS and PGBOS, Department of Physics, KUK

BOOK CHAPTERS

1. **Suman Mahendia**, Rishi Pal Chahal, Anil Kumar Tomar, Heena Wadhwa, Shyam Kumar *"Radiation-Induced Effects on the Properties of Polymer-Metal Nanocomposites" in a Book* Radiation Effects in Polymeric Materials; Ed: Vijay Kumar, Babulal Chaudhary, Vishal Sharma, Kartikey Verma; Springer Nature Switzerland AG 2019, 141-192.

2. Manoj Karakoti, Sandeep Pandey, Nanda Gopal Sahoo, Anirban Dandapat, **Suman Mahendia**, *"Polyethylenedioxythiopohene (PEDOT)-Based Supercapcitor Applications", in a book* Conducting Polymers-Based Energy Storage Materials Ed: Dr Inamuddin, Rajender Boddula, Mohammad Faraz Ahmer, Abdullah Mohamed Asiri; CRC Press, Taylor and Francis Group, 2019, 233-253.

3. **Suman Mahendia**, Sumit Dokwal, Poonam Mahendia, Rishi Pal Chahal, Rashmi Pundeer, Ritu Jangra, Mansi Malik, Sangeeta Saini, Manisha Sandhu, O.P. Sinha, Tristan D. Clemons, *"Waste: Problem, Sustainable Management, and Conversion to Value Added Products";* (Chapter no. 3) in a Book Waste Management: Strategies, Challenges and Future Directions edited by N. G. Sahoo, Nova Science Publisher, New York 2022.

4. Jai Parkash, Sangeeta Saini, Lovleen Kaur, Meenu Verma, **Suman Mahendia**, Manjeet Rani and Sanjiv Arora; *"Agriculture waste to value added products conversion technology: present, past and future"*; (Chapter no. 9) in a Book Waste Management: Strategies, Challenges and Future Directions edited by N. G. Sahoo, Nova Science Publisher, New York 2022.

5. S Dokwal, **S Mahendia**, RP Chahal, V Sharma, SB Kuhar, S Kumar, "*Irradiation-induced effect on polymer: From mechanism to biomedical applications*", Radiation Technologies and Applications in Materials Science, 2022, 149-175, CRC Press.

6. Poonam Mahendia, Vaishali, Rashmi Pundeer, Nanda Gopal Sahoo, S. A. Hashmi and **Suman Mahendia**, "*Engineering Waste Derived carbon nanomaterials for Supercapacitive applications*", High Performance Supercapacitors From Waste Materials, Edited By Nanda Gopal Sahoo, Anurag Srivastava, Yong Chae Jung And Chetna Tewari. 2025 (Submitted, Under Review)

LIST OF PUBLICATIONS

1. Sumit Dokwal, Poonam Mahendia, Monika Matiyani, **Suman Mahendia**, *Synergistic nanocomposites of gold nanorods and reduced graphene oxide for optical and electrochemical sensing of hydrogen peroxide*, **Next Nanotechnology 9 (2026) 100344**

2. Poonam Mahendia, Manoj Karakoti, Triston D. Clemons, O. P. Sinha, and **Suman Mahendia,** *Bifunctional TiO2-reduced graphene oxide (RGO) binary nanohybrids based as photo-electrocatalysts in both acidic and alkaline medium: Electrochemical, optical and structural insight,* **Materials Science and Engineering B (2025) 323, 118862 (Q1)**

3. Mansi Malik, Ambuj Mishra, **Suman Mahendia**, *Role of sacrificial agent in improving electrode-electrolyte interface kinematics in electrochemical devices,* **AIP Conference Proceedings (2025) 3198(1), 020030 (Q4)**

4. Poonam Mahendia, Ritu Jangra, Manoj Karokoti, **Suman Mahendia** and O. P. Sinha, *A systematic structural insight of microwave heat induces changes in reduced graphene oxide (rgo) for enhanced electrochemical supercapacitive application,* **Energy Storage (2025) 7 (4), e70180 (Q1)**

5. Ritu Jangra, Poonam Mahendia Bhoria, Manoj Karakoti, Sandeep Pandey, Nanda Gopal Sahoo, Anurag Srivastava, **Suman Mahendia**, *Activating agent-driven hierarchical nano-porous structure in mustard oil–derived carbon soot for supercapacitive application,* **Environ Sci Pollut Res (2024) 32(37):21975-21994, https://doi.org/10.1007/s11356-024-34798-2 (Q1)**

6. Malik, M., Chahal, R.P. & **Mahendia S**., *Ternary nanostructure of CdS-rGO-Ag for enhanced photoelectrochemical application,* **Environ Sci Pollut Res (2024) 32, 21961–21974 https://doi.org/10.1007/s11356-024-34541-x (Q1)**

7. Ritu Jangra, Poonam Mahendia, Manoj Karakoti, Patrycja Bober, N. G. Sahoo, Anurag Srivastava, O.P. Sinha, Tristan D. Clemons, Uday Deshpande, and **Suman Mahendia,** *$ZnCl_2$-Assisted Conversion of Nitrogen-Containing Biomass Carbon from Marigold Flower: Towards Highly Porous Activated Nitrogen-Doped Carbon for Low ESR and Enhanced Energy Density Supercapacitors,* **J. Energy Storage, 75 (11) 109-728 (2024) (Q1)**

8. Manoj Karakoti, Gaurav Tatrari, Sandeep Pandey, Pawan Singh Dhapola, Ritu Jangra, **Suman Mahendia**, Mayank Pathak, Sunil Dhali, Pramod K. Singh, Nanda Gopal Sahoo, *Tailoring the electrochemical performance of PEDOT:PSS via incorporation of spray dryer processed graphene oxide,* **Int. J. Energy Res. 46 (13), 18711-18726 (2022) (Q1)**

9. Manoj Karakoti, Sandeep Pandey, Gaurav Tatrari, Pawan Singh Dhapola, Ritu Jangra, Sunil Dhali, Mayank Pathak, **Suman Mahendia**, Nanda Gopal Sahoo, *An Approach towards Waste to Energy from Effective Conversion of Solid Waste Plastics into Graphene Nanosheets by Using Different Catalysts for High Performance Supercapacitors: A comparative study,* **Mater. Adv. 3, 2146-2157 (2022) (Q1)**

10. Lovleen Kaur, **Suman Mahendia**, Sangeeta Saini, Anurag Srivastava, *Arsenic sensing using Al/Fe doped armchair graphene nanoribbons: Theoretical investigations,* **J. Phys. Chem. Solids 152, 109975 (2021) (Q1)**

11. Manoj Karakoti, Sandeep Pandey, Ritu Jangra, Pawan Singh Dhapola, Pramod K Singh, **Suman Mahendi**a, Ali Abbas, Nanda Gopal Sahoo, *Waste plastics derived graphene nanosheets for supercapacitor application,* **Materials and Manufacturing Processes 36 (2), 171-177 (2021) (Q1)**

12. Gaurav Tatrari, Chetna Tewari, Manoj Karakoti, Mayank Pathak, Ritu Jangra, Santhi Bhushan Boddepalli; **Suman Mahendia**, Nanda Goapl Sahoo, *Mass Production of Metal Doped Graphene from Agriculture Waste of Quercus ilex Leaves for Supercapacitors: Inclusive DFT Study,* **RSC Advances 11 (18), 10891-1090 (2021) (Q1)**

13. Poonam Mahendia, , Heena Wadhwa, Geeta Kandhol, **Suman Mahendia**, Ritu Srivastava, O.P.Sinha, Tristan D.Clemons, Shyam Kumar, *Study of induced structural, optical and electrochemical properties of Poly(3-hexylthiophene) (P3HT), [6,6]-phenyl-C61-butyric-acid-methyl-ester (PCBM) and their blend as an effect of graphene doping,* ***J. Phys. Chem. Solids, 148 (2021) 109644*** **(Q1)**

14. Heena Wadhwa, Geeta Kandhol, Uday P. Deshpande, **Suman Mahendia,** Shyam Kumar, *Thermal stability and dielectric relaxation behavior of in situ prepared poly(vinyl alcohol) (PVA)-reduced graphene oxide (RGO) composites,* ***Colloid and Polymer Science 298, 1319–1333 (2020)*** **(Q1)**

15. Saroj Bala, Sumit Dokwal, Sangeeta Saini, **Suman Mahendia**, Shyam Kumar, *Control of growth solution on the dimensions of gold nanorods accounted for LSPR sensitivity toward liquid ammonia sensing,* ***Photonics Nanostruct.- Fundament. App., (2020) 41 100782*** **(Q1)**

16. Manoj Karakoti, Ritu Jangra, Sandeep Pandey, Pawan Singh Dhapola, Sunil Dhali, **Suman Mahendia**, Pramod K Singh, Nanda Gopal Sahoo, *Binder-free reduced graphene oxide as electrode material for efficient supercapacitor with aqueous and polymer electrolytes,* ***High Performance Polymers, 32(2) 175-182 (2020) (Q3)***

17. Manoj Karakoti, Ritu Jangra, Sandeep Pandey, Pawan Singh Dhapola, Sunil Dhali, **Suman Mahendia**, Pramod K Singh, Nanda Gopal Sahoo, *Spray dryer processed graphene oxide/reduced graphene oxide for high-performance supercapacitor,* ***International Journal of Applied Ceramic Technology, 17 (4) 1899-1908 (2020) (Q3)***

18. Geeta Kandhol, Heena Wadhwa, Subash Chand, **Suman Mahendia**, Shyam Kumar, *Study of dielectric relaxation behavior of composites of Poly (vinyl alchohol) (PVA) and Reduced graphene oxide (RGO)****, Vacuum 160, 384-393 (2019) (Q1)***

19. D Kumar, S Bala, H Wadhwa, G Kandhol, **S Mahendia**, F Chand, S Kumar, *Tuning of LSPR of gold-silver alloy nanoparticles with their composition,* ***AIP Conference Proceedings 2093 (1) (2019), 020048 (Q4)***

20. G Kandhol, S Bala, H Wadhwa, **S Mahendia**, S Kumar, *Enhanced UV-blocking and thermal stability of Agar: Effect of reinforcement of reduced graphene oxide (RGO),* ***AIP Conference Proceedings, 2093 (1) (2019), 020046 (Q4)***

21. S Kataria, S Bala, S Chand, **S Mahendia,** OP Sinha, S Kumar, *Synthesis and characterization of zinc oxide (ZnO) nanostructures,* ***AIP Conference Proceedings, 2093 (1) (2019), 020031 (Q4)***

22. S Bala, D Kumar, S Chand, H Wadhwa, **S Mahendia,** S Kumar, *Synthesis and characterization of gold nanorods encapsulated in reduced graphene oxide,* ***AIP Conference Proceedings, 2093 (1) (2019), 020011 (Q4)***

23. RP Chahal, **S Mahendia**, AK Tomar, A Malik, H Kumar, S. Kumar, *Gamma irradiation induced modification in optical behaviour of PVA/Ag nanocomposite films,* ***AIP Conference Proceedings, 2093 (1) (2019), 020005 (Q4)***

24. AK Tomar, **S Mahendia**, R Chahal, S Kumar, Electrical studies of PMMA blended with iron loaded polyaniline, ***AIP Conference Proceedings, 2093 (1) (2019), 020002 (Q4)***

25. Heena Wadhwa, Devender Kumar, **Suman Mahendia**, Shyam Kumar, *Microwave assisted facile synthesis of reduced graphene oxide-silver (RGO-Ag) nanocomposite and their application as active SERS substrate,* ***Mater. Chem. Phys. 194 274-282 (2017). (Q1)***

26. Devender Kumar, Heena Wadhwa, **Suman Mahendia**, Fakir Chand, Shyam Kumar, *Effect of rose water on structural, optical and electrical properties of composites of reduced graphene oxide-Poly (vinyl alcohol) (PVA) grafted with silver nanoparticles,* ***Material Research Express 4 025021 (2017). (Q2)***

27. RP Chahal, **S Mahendia**, AK Tomar, S Kumar, *SHI irradiated PVA/Ag nanocomposites and possibility of UV blocking,* ***Optical Materials 52 (2016) 237-241. (Q1)***

28. **Suman Mahendia**, Heena, Geeta Kandhol, Uday P. Deshpande, Shyam Kumar, *Determination of glass transition temperature of reduced graphene oxide-poly(vinyl alcohol) composites using temperature dependent Fourier transform infrared spectroscopy,* ***J. Molecular Structure, 1111 (2016) 46–54. (Q2)***

29. **Suman Mahendia**, Anil Kumar Tomar, Parveen K. Goyal and Shyam Kumar, *Study of Dielectric Behavior and Charge Conduction Mechanism of Poly(Vinyl Alcohol) (PVA)-Copper (Cu) and Gold (Au) Nanocomposites as a Bio-resorbable Material for Organic Electronics,* ***J. Elect. Mater., 45 (2016) 5418–5426. (Q2)***

30. Heena, Devender Kumar, Rishi Pal Chahal, **Suman Mahendia** and Shyam Kumar, *Study of Conduction Behavior of Graphene-PVA Composites prepared by Ex-situ Method,* ***App. Sci. Lett. 2(4) (2016) 126-128. (Peer-Reviewed)***

31. Rishi Pal Chahal, **Suman Mahendia**, A.K.Tomar, Shyam Kumar, *UV-Irradiated PVA-Ag nanocomposites for optical applications,* ***Applied Surface Sciences, 343 (2015) 160-165. (Q1)***

32. **Suman Mahendia**, Anil Kumar Tomar, Parveen K. Goyal and Shyam Kumar, *Tuning of Refractive Index of Poly(vinyl alcohol) (PVA): Effect of Embedding Cu and Ag Nanoparticles,* **J. Appl. Phys., 113 (2013) 073103.** ***(Q1)***

33. Kalpana Sharma, Rishi Pal Chahal, **Suman Mahendia**, Anil Kumar Tomar and Shyam Kumar, *Optical behaviour of swift heavy ions irradiated poly(vinyl alcohol) films,* **Rad. Eff. Def. Solids 168(5) (2013) 378-384. (Q3)**

34. Heena, **Suman Mahendia**, Rishi Pal Chahal, Neetu Munjal and Shyam Kumar, *Graphene-Polyvinyl Alcohol (PVA) Composites with Enhanced Conductivity: A Comparative Study of Various Synthesis Approaches,* ***Int. J. Adv. Electrochemistry, 2 (2014) 50-54. (Peer-Reviewed)***

35. Rishi Pal Chahal, **Suman Mahendia**, A.K. Tomar, Shyam Kumar, *γ-irradiated PVA/Ag nanocomposite films: materials for optical applications,* **J. Alloys Compd. 538 (2012) 212–219. (Q1)**

36. A.K. Tomar, **Suman Mahendia**, Rishi Pal Chahal, Shyam Kumar, *Structural and dielectric spectroscopic studies of polyaniline–poly(methylmethacrylate) composite films,* **Synthetic Metals, 162 (2012) 820– 826. (Q1)**

37. P. K. Goyal, V. Kumar, Renu Gupta, **S. Mahendia**, Anita, S. Kumar, *Modification of polycarbonate surface by Ar^+ ion implantation for various opto-electronic applications,* **Vacuum, 86(8) (2012) 1087-1091. (Q1)**

38. P. K. Goyal, V. Kumar, Renu Gupta, **S. Mahendia**, T. Sharma and S. Kumar, *Change in the Electrical Conductivity of N^+ Ion Implanted Polycarbonate,* ***Adv. Appl. Sci. Res., 2 (2011) 227-231. (Peer-Reviewed)***

39. Tanu Sharma, **Suman Mahendia**, Sanjeev Aggarwal, Shyam Kumar and D. Kanjilal, *100 keV nitrogen ion beam implanted polycarbonate: A possibility for UV blocking devices,* ***Optical Materials, 33 (2011) 1741-44. (Q1)***

40. V. Kumar, P.K. Goyal, **Suman Mahendia**, Renu Gupta, Tanu Sharma and Shyam Kumar, *Tuning of refractive index and optical band gap of CR-39 polymer by heating,* ***Rad. Eff. Def. Solids, 166 (2011) 109-113. (Q3)***

41. A.K. Tomar, **Suman Mahendia** and Shyam Kumar, *Structural characterization of PMMA blended with chemically synthesized Pani,* ***Adv. Appl. Sci. Res., 2 (2011) 327-333 (Peer-Reviewed)***

42. A.K. Tomar, **Suman Mahendia** and Shyam Kumar, *Modification in optical and electrical properties of PMMA on blending with Polyaniline,* ***Int. J. Nanoscience, 10 (2011) 1-5. (Peer-Reviewed)***

43. Rishi Pal Chahal, **Suman Mahendia**, A.K. Tomar and Shyam Kumar, *Effect of ultraviolet radiation on the optical and structural characteristics of in-situ prepared PVP-Ag nanocomposites,* ***Digest J. Nanomater. Biostruct., 6 (2011) 299-306. (Peer-Reviewed)***

44. **Suman Mahendia,** A. K. Tomar, Rishi Pal Chahal, Parveen Goyal and Shyam Kumar, *Optical and structural properties of Poly(vinyl alcohol) films embedded with citrate stabilized gold nanoparticles,* ***J. Phys. D: Appl. Phys., 44 (2011) 20510. (Q1)***

45. **Suman Mahendia**, A.K. Tomar and Shyam Kumar, *Nano-Ag doping induced changes in optical and electrical behaviour of PVA films,* ***Mater. Sci. Eng. B, 176 (2011) 530-534. (Q1)***

46. **Suman Mahendia,** A.K. Tomar and Shyam Kumar, *Electrical conductivity and dielectric spectroscopic studies of PVA-Ag nanocomposite films,* ***J. Alloys Compd. 508 (2010) 406-411. (Q1)***

INVITED LECTURE

1. 56th Refresher Course in Experimental Physics, at Department of Physics, Punjab University, Chandigarh, 11th Feb-26nd Feb, 2013
2. National Conference on Recent Developments in Physics (NCRDP-2014) sponsored by Department of Higher Education, Govt. of Haryana at S.D. (PG) College, Panipat, March 29- 30, 2014.
3. Science Academies' 72nd Refresher Course in Experimental Physics, at Department of Physics, Punjab University, Chandigarh, 16th June-1st July, 2015
4. Science Academies' Refresher Course in Experimental Physics, at Department of Physics, Kurukshetra University, Kurukshetra, 13th Sept-28nd Sept, 2015.
5. Regional Science Congress-2015, Jawahar Navodaya Vidyalaya, Kurukshetra Haryana, 21th Nov., 2015
6. Science Academies 100th Refresher Course in Experimental Physics, July 17-August 1, 2018, Department of Physics, Panjab University, Chandigarh,
7. International Conference on Efficient Solar Power Generation and Energy Harvesting, during 12-14 Feb, 2019 Organized by Amity University UP, Noida, India, on title: Multipurpose devices based on Graphene: Integrated solar energy harvesting, storage and sensing devices.
8. 2nd International Conference on Energy, Functional Materials And Nanotechnology & "Sustainable Environment Management (ICEFN-SEM-2019)" (www.Icefn2019.In) From 24-26th, May, 2019 organized by "Nanoscience and Nanotechnology Centre (NSNT)", Department of Chemistry, D.S.B. Campus, Kumaun University, Nainital, Uttarakhand, India.
9. Third International Conference on Science and Engineering of Materials (ICSEM- 2019), July 19-21, 2019, School of Basic Sciences & Research, Sharda University, Greater Noida
10. Science Academies' 72nd Refresher Course in Experimental Physics, at Department of Physics, Punjab University, Chandigarh, Dec 15th, 2021 (Dec 14th, 2021 to Dec 29th, 2021).
11. Science Academies' Refresher Course in Experimental Physics, at Department of Physics, Punjab University, Chandigarh, Dec 16th, 2021 to (Dec 14th, 2021 to Dec 29th, 2021).
12. Value-Added Course on "Futuristic Research and Related Experimental Techniques, at Department of Physics of J.C. Bose University of Science and Technology, YMCA, Faridabad (13-2-21).
13. Value-Added Course on "Futuristic Research and Related Experimental Techniques, at Department of Physics of J.C. Bose University of Science and Technology, YMCA, Faridabad (14-2-21).
14. Refresher Course in Chemistry organized by UGC-HRDC-KU, Nainital, Uttrakhand (14 July, 2022).
15. Refresher Course in Chemistry organized by UGC-HRDC-KU, Nainital, Uttrakhand (19 July, 2022).
16. Keynote Speaker Two days Hands-on Training Workshop on Upcycling of Solid waste into carbon nanomaterials and their characterization for various Applications at Kumaun University, Nainital from 6-7 Oct. 2023.
17. 84th Online Refresher Course: Basic & Applied Sciences (04-12-2023 to 17-12-2023)
18. 2nd International conference on Advances in nanomaterials and devices for energy and Environment, CANDEE-2023 at ABV-IIITM, Gwalior (19-12-23 to 20-12-23)
19. In-House symposium on progress in Metallurgy and Materials, ISPMM-2024 at IIT-Indore (28-2-24).
20. One day Workshop on Implementation on NEP-2020 at IGU, Meerpur, Rewari (2-4-24).
21. Plenary talk at National seminar on National Education Policy:2020, Implementation and Challenges at KLP college, Meerpur, Rewari (20-4-24).
22. 89th Online Refresher Course: Sciences (14-10-2024 to 27-10-2024), UGC - Malaviya Mission Teacher Training Centre (Formerly known as UGC-HRDC), Sardar Patel University, Gujrat (21/10/2024).
23. 3rd International Conference on Advances in Nanomaterials and Devices for Energy and Environment (CANDEE-2024), ABV-IIITM Gwalior (3-5 Dec, 2024)
24. 3rd International Conference on "Energy, Functional Materials/Molecules, and Nanotechnology" (ICEFN-2025), and a National Workshop on Solid Waste Management (NWSWM)" at Kumaun University, Nainital, from March 20th to 22nd, 2025.
25. Five-day workshop on "Atomistic Simulations for Sensing and Supercapacitor Devices: Tools, Techniques, and Emerging Trends (AS^3T^3-2025)", at ABV-IIITM Gwalior held from May 23–27, 2025.
26. International Conference on Photonics and Emerging Materials for Futuristic Technology (PEMFT-2025), at CCSU Merrut, UP during Nov, 12 to 15, 2025
27. International Conference on Advances in Nanomaterials and Devices for Energy and Environment (CANDEE-2025) at IIITM Gwalior, during 16 to 18, 2025
28. Invited Guest Lecture at PSG Institute of Advance Studies at Coimbatore, Tamil Nadu on 15th Dec, 2025

M.SC PROJECT GUIDED

Name of student	Session
Garima	2020-22
Divya Gupta	2020-22
Riya	2021-23
Manvi Goyal	2021-23
Bhavya	2022-24
Pooja	2022-24

RESEARCH GUIDED

Name of student	Thesis title
Devender (02-UC-5) (2012-18)	Study of localized surface plasmon resonance for different metal nanomaterials
Heena (05 DSK693) (2013-18)	Synthesis and characterization of graphene based composites
Geeta Kandhol (03-SP-67)(2014-20)	Synthesis and characterization of reduced graphene oxide and its composites with poly (vinyl alcohol) (PVA) and agar polymer
Saroj Bala (2017-UD-Ph.D.-7) (2017-23)	Synthesis and characterization of reduced graphene oxide and metal nanoparticles based composites for sensing application
Ritu Jangra(11-RK-1012) (2018-25)	Synthesis and characterization of carbon based materials for supercapacitive application

TRAINING COURSES AND CONFERENCES/ WORKSHOP

1. UGC Sponsored Special Orientation Programme/Summer School, Academic Staff College, Kurukshetra University, Kurukshetra, June 13, 2008 – July 7, 2008
2. Workshop on Patent Awareness Organized by Kurukshetra University, Kurukshetra Sponsored by Patent Information Centre, HSCST, DST, Hisar, Haryana and TIFAC, DST, Govt. of India, New Delhi, April 5, 2008
3. An IUAC Acquaintance Programme on Accelerator Based Science and Technology organized by GJU of Science & Technology, Hisar, Haryana and IUAC, New Delhi, Oct 23, 2009
4. National Symposium and Workshop on Thermal Analysis at Kurukshetra University, Kurukshetra during March 9-13, 2010.
5. AICTE/MHRD Sponsored One Week Short Term Course on Nano science & Technology (Nano- 2010), May 31st, 2010 – June 4th, 2010, NIT Hamirpur, HP
6. Application Workshop on Atomic Absorption Spectrometer (AAS) Organized by IUAC, New Delhi, Sep 27-28, 2010
7. Third Science Conclave: A Congregation of Noble Laureates, Indian Institute of Information Technology, Allahabad, Dec 8-14, 2010
8. Refresher Course in Physics, Academic Staff College, HP University, Shimla, July 25, 2011 – Aug 13, 2011UGC sponsored One week National Workshop on "Advanced Characterization and Simulation Technique (ACST-2012) from March 12-17, 2012 at Kurukshetra University, Kurukshetra.
9. 50th Refresher Course in Experimental Physics, Indian Academy of Science, Banglore, 6th Aug-22nd Aug, 2013
10. 84th BRNA-IANCAS National Workshop on Radiochemistry and Applications of Radioisotopes from October 23-27, 2013 at Kurukshetra University, Kurukshetra.
11. Science Academies' Refresher Course in Statistical Mechanics, Homi Bhabha Centre for science education (TIFR), Mumbai, 6th Nov-19th Nov, 2013.
12. Two days National Workshop on Ion Beam Induced Growth and Engineering of Materials, 11-12th March, 2014, Kurukshetra University, Kurukshetra
13. Two days 2nd National Workshop on Ion Beam Induced Growth and Engineering of Materials, 4-5 March, 2014, Kurukshetra University, Kurukshetra
14. Two Days Workshop on Opportunities and Challenges for Women in STEM, organized by Women faculty of Science, Life Sciences, Engineering & TechnologyKurukshetra University, Kurukshetra, 24th -25th Jan 2018
15. One day NSM Workshop on High Performance Computing (May 04, 2018) Department of Physics, Kurukshetra University, Kurukshetra and Centre for Development of Advanced Computing (C-DAC), Pune
16. Two Days Workshop on Multi-Scale Modeling & Simulation of Nanomaterials Two days (May 22-23, 2018), Amity Institute of Nanotechnology, Amity University, Noida
17. Awareness Programme for Teachers (June 09, 2018) Amity Institute of Nanotechnology, Amity University, Noida
18. Two Days Workshop on Graphene based Device Fabrication and Characterization (Feb 26-27, 2019) UIET, Kurukshetra University, Kurukshetra
19. One day Seminar on Draft National Education Policy, 2019 (July 24, 2019) Faculty Development Centre, Kurukshetra University, Kurukshetra
20. Training Programme on Organic Photovoltaics & Electronics Technology 2018 (Aug 06-10, 2018) CSIR, National Physical Laboratory, New Delhi
21. Short Term Course on Emerging Fields in High Energy Physics (July 15-19, 2019) Department of Physics, Dr B R Ambedkar National Institute of Technology, Jalandhar, Punjab
22. First Virtual Conference Rescheduled on 14 – 16 July 2020 due to the cancellation in April 2020: Second International Symposium "Functional Nanomaterials in Industrial & Clinical Applications: Academy – Industry – Clinician Meet" (Online)
23. International Conference of Material for Sustainable Development (ICMSD)-2022 (19-20, Ict, 2022) organized by Dept. of Nano Science and Materials, Central University of Jammu, India
24. Chemical Catalysis Conference 3.0, 3rd Conference on Heterogeneous Catalysis-2024, December 6 - 8, 2024 at IIT Gandhinagar
25. Workshop on Electrochemical Methods and Solid Gas Reactions, December 9-2024 at IIT Gandhinagar.