

CURRICULUM VITAE

DR. KALPANA AWASTHI

Current Position: Professor, Head of Department of Physics,
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Father's Name: Dr. A.K. Awasthi

Date of Birth: April 11, 1975

Nationality: Indian

h-index: 14
Citations: 1400

Education:

- **Ph.D. :** Nanoscience (2003)
Department of Physics, Banaras Hindu University, Varanasi, India
Topic: Synthesis, Growth and Characterization of Carbon Nanotubes and Related Materials
Thesis Advisor: Padam Shri Prof O. N. Srivastava
- **M. Sc:** Physics, Condensed Matter Physics (1997), (77.2%), Department of Physics, Banaras Hindu University, Varanasi, India
- **B. Sc:** Physics, Math (1994), (79.9%) Agrasen Kanya Degree College, Varanasi, Affiliated with VBS, Purvanchal University Jaunpur, UP, India

Work Experience:

- Assistant Professor at Department of Physics, K.N. Govt. P.G. College, Gyanpur, Bhadohi (16 March 2010)- Professor (KNU, Gyanpur) (Till Now)
- Research Associate (DRDO, New Delhi)), Department of Physics, Banaras Hindu University, Varanasi, (May 2009-March 2010)
- Research Associate (CSIR, New Delhi), Department of Physics, B.H.U., Varanasi (April 2006- March 2009)
- Senior Research Fellow (CSIR, New Delhi) Department of Physics, B.H.U., Varanasi (April 2002- March 2004)
- Project Fellow HTSC, Department of Physics, B.H.U., Varanasi, from 2000-2001
- Jr. Project Fellow (AICTE-Scheme), Department of Physics, B.H.U., Varanasi from 1998 to 2000

Awards and Honours:

- My Academic Profile has been selected for publication in the book entitled “**100 Eminent Academicians of 2021**”, to be published by the International Institute of organized Research (I2OR) which is a registered MSME with the Ministry of Micro, Small and Medium Enterprises, Government of India and is advocating United Nation's Sustainable Development Goals through Academic and Research Programs for API and Career Advancement Scheme.
<https://i2orindia.blogspot.com/2021/08/dr-kalpana-awasthi-eminent-academician.html>
- First Best Poster Presentation Award in the 3rd National Conference on Nanomaterials & Nanotechnology, Amity University, Lucknow (21-23, Dec. 2010)
- Certificate of Merit (2008-09) for the R&D efforts on Carbon Nanotubes and its Applications by Nanoscience center, Department of Physics, B.H.U., Varanasi
- Prestigious **ISCA Young Scientist Award** (Year 2008-09) by the Indian Science Congress Association, Kolkata,
- **GATE** 1998 (Graduate Aptitude Test for Engineering) qualified with 88.56 percentile
- Silver medals (three) in B.Sc. (1994)
- Certificate of Merit in M.Sc. (Previous) (1996)

Membership of Organizations:

- **Life Member**, Indian science Congress Association ((Membership No.-L13313).
- **Life Member**, Indian Association of Physics Teachers (Membership No.-9113 L-5485).
- **Life Member**, Indian Physics Association (Membership No.-VAR/LM/12713).

- **Member:** International Association of Advanced Materials (IN-041175-291-77)
- **Member:** Organization for Women in Science for the Developing World
- **Life member:** Society for Technologically Advanced Material of India-2020
- **Life member:** Global Academic Society LM-J/GAS/135/2021

Field of Research Interests:

- Synthesis, Characterization of Carbon Nanomaterials: Fullerenes, Carbon Nanotubes (Multi-walled and Single-walled), Graphene, Carbon Nanotubes (CNTs)/ graphene - Polymer Composites, Carbon Dots, Carbon quantum Dots and its application in energy storage and agriculture field.
- Green synthesis of metal/ metal oxide nanoparticles (Silver, Zinc Oxide etc.) and its hybrid formation with graphene/ carbon dots/ carbon quantum dots

Research Projects:

- Minor research project entitled “**Preparation, Characterization and Applications of Amino Functionalized Carbon Nanotubes**” funded by UGC, New Delhi (April 2011 to Nov. 2012) (Completed)
Ref. No.: F. No. 8-2(175)/2011(MRP/NRCB) Dated 01/02/2011
- Minor research project entitled “**Efficient Adsorptive Removal of Dye from Textile Wastewater Using Graphene Based Carbon Nanostructures**” funded by Research and Development Grant of Higher Education Department UP (From April 2021 to March 2026) (Completed) (Ref. no. 46/2021/603/70-4-2021-4(56)/2020 Dated 30/03/2021)

Courses Attended:

- Seven-day Short Term Training Programme on Academic Leadership, Governance and Strategic Management organized by UGC MMTC, Iswar Saran PG College, University of Allahabad, Prayagraj, from 16-23 Jan 2025.
- NEP 2020 Orientation & Sensitization Programme organized by UGC MMTC Iswar Saran PG College, Prayagraj, from 20-29 Feb. 2024.
- One-week Online Faculty Development Programme on Teachers in NEP: Role, Awareness, Orientation, Challenges and Response organized by M.G. K.V. University, Varanasi with Teaching Learning Centre for Social Science, Dr. H.G.V. Centre University, Sagar, from 17-23 March 2021.
- 14th Online Short Term Course on E- Content Development organized by UGC HRDC, Gujrat University, from 28 May-3 June 2020.
- One Week Online Faculty Development Programme on The Global Crisis @ COVID-19: Rethinking Policies organized by Km. Mayawati Govt. Girls P.G. College Badalpur, Gautambudh Nagar, from 06-11 May, 2020.
- Faculty Development Programme on Information and Communication Technology, held at M.G. K.V. University, Varanasi from October 24-30, 2018
- 4th Winter Programme held at UGC-HRDC, Banaras Hindu University, Varanasi from February 11- March 03, 2018
- 8th Refresher Course in Environmental Studies held at UGC-HRDC, Banaras Hindu University, Varanasi from December 08- 28, 2015
- 58th Orientation Course held at Academic Staff College of Banaras Hindu University, Varanasi from September 1- 28, 2011.

Research Publications:

Papers in International Journals (29)

- Enhancement of Solid-State DSSC Efficiency through Activated Carbon/Graphene Composite Electrodes
Shiva Kant Ojha, Priyanka Chawla, Shivansh Tripathi, **Kalpna Awasthi**, Mridula Tripathi, Applied Physics A 131 (2025)595.
- Synthesis, Characterization, and Impact of Different Carbon-Based Nanomaterials on Gram (*Cicer arietinum*) Plant Growth and Soil Properties
Kalpna Awasthi, Kritika Gupta and Rajani Srivastava, Current Agriculture Research Journal 12 (3) (2024)1090-1105.

- Notable Electrical and Mechanical Properties of Polyacrylamide (PAM) with Graphene Oxide (GO) and Single-Walled Carbon Nanotubes (SWCNTs)
Seema Awasthi, T P Yadav and **Kalpna Awasthi**, Int Polymer Processing 38(3) (2023)290-299.
- Development of Polymer Electrolyte Based on Graphite/MWNTs Fillers for Sustainable Dye-Sensitized Solar Cell
Kumari Pooja, Anant P. Pandey, **Kalpna Awasthi**, Mridula Tripathi, Priyanka Chawla, Chemical Papers76 (2022)7623-7632
- Carbon Nanomaterials: Fullerene to Graphene
Thakur Prasad Yadav and **Kalpna Awasthi**, Transactions of the Indian National Academy of Engineering 7(2022)715–737
- Selective Growth of Uniform Graphene Films on Metallic (Cu and Au) Substrates
Ch. Ravi Prakash Patel, **KalpnaAwasthi** and Thakur Prasad Yadav, J. Int. Acad. Phys. Sci. 26 (2022) 175-184
- Functionalization of Multi-Walled Carbon Nanotubes and Its Impact on Growth of Tomato Plant (*Solanum lycopersicum* L.)
Kalpna Awasthi, Dheerj Kumar Tripathi and Rajani Srivastava, Journal of Experimental Biology and Agriculture Science 8(2020) 469-478.
- Formation of Single-Walled Carbon Nanotube Buckybooks, Graphene Nanosheets and Metal Decorated Graphene
Seema Awasthi, **Kalpna Awasthi**, O. N. Srivastava, Journal of Nano Research 53(2018) 37-53.
- Growth of Carbon Nanotubes on Icosahedral Quasicrystalline Al–Cu–Fe Alloy
Kalpna Awasthi, T. P. Yadav, and O. N. Srivastava, Advanced Science, Engineering and Medicine 10 (2018)773-777.
- Microwave Assisted Exfoliation of Graphene and its Application in Enzyme Immobilization
Mahe Talat, **Kalpna Awasthi** and O. N. Srivastava, Current Nanomaterials 1(2016) 159-163
- Functionalization of Carbon Nanomaterials (e.g. Carbon Nanotubes and Graphene) Using L-Cysteine,
Mahe Talat, **Kalpna Awasthi**, Shyam Sundar and Onkarnath N Srivastava, Innovations in Corrosion and Materials Science 5(2015)105-112
- Formation of Single and Multi-Walled Carbon Nanotubes and Graphene from Indian Bituminous Coal
Seema Awasthi, **Kalpna Awasthi**, A.K. Ghosh, S.K. Srivastava and O.N. Srivastava, Fuel 147 (2015) 35-42.
- Studies on the Dispersion of Carbon Nanotubes and Graphene in Aqueous Solutions with Different Types of Surfactants
Mahe Talat, **Kalpna Awasthi** and O. N. Srivastava, Adv. Sci. Lett. 20 (2014) 1163-1169
- Synthesis of Carbon and Carbon-Nitrogen Nanotubes Using Green Precursor: Jatropa, Derived Biodiesel
Rajesh Kumar, R. M. Yadav, **K. Awasthi**, T. Shripathi, A. S. K. Sinha, R. S. Tiwari, and O. N. Srivastava, J. Experimental Nanoscience 8(2013) 606-620
- An Oral Formulation of Amphotericin B Attached to Functionalized Carbon Nanotubes is an Effective Treatment for Experimental Visceral Leishmaniasis, Vijay Kumar Prajapati, **Kalpna Awasthi**, Thakur Prasad Yadav, Madhukar Rai, Onkar Nath Srivastava and Shyam Sundar, J. Infectious Diseases 205(2012) 333-336
- Synthesis of Nano-Carbon (Nanotubes, Nanofibres, Graphene) Materials
Kalpna Awasthi, Rajesh Kumar, Himanshu Raghubanshi, Seema Awasthi, Ratnesh Pandey, Devinder Singh, T P Yadav and O N Srivastava, Bull. Mat. Sci. 34(2011) 607- 614
- A Targeted Killing of Leishmania Donovanii in vivo and in vitro with Amphotericin B Attached to Functionalized Carbon Nanotube
Vijay Kumar Prajapati, **Kalpna Awasthi**, Shalini Gautam, Thakur Prasad Yadav, Madhukar Rai, Onkar Nath Srivastava and Shyam Sundar, J Antimicrob Chemother 66 (2011) 874-879.
(This article has been chosen as a new research highlight by Nature India;
<http://www.nature.com/nindia/2011/110530/full/nindia.2011.74.html>)

- Effect of Nitrogen Variation on the Synthesis of Vertically Aligned Bamboo-Shaped C-N Nanotubes Using Sunflower Oil
Rajesh Kumar, R.M. Yadav, **Kalpana Awasthi**, R. S. Tiwari and O. N. Srivastava, Int. J. Nanoscience 10(2011)809-813
- Preparation of Carbon-Nitrogen Nanotubes (CNNTs) Poly ethylene Oxide (PEO) Composites Films and their Electrical Conductivity Measurement
Ram Manohar Yadav, Rajesh Kumar, **Kalpana Awasthi** and O. N. Srivastava, Int. J. Nanoscience 10 (2011) 1091-1094
- Large Scale Synthesis of Bundles of Aligned Carbon Nanotubes Using a Natural Precursor: Turpentine Oil
Kalpana Awasthi, Rajesh Kumar, R.S. Tiwari and O.N. Srivastava, J. Experimental Nanoscience 5 (2010)498-508
- Attachment of Biomolecules with Amino Functionalized Carbon Nanotubes
Kalpana Awasthi, D.P. Singh, Sunil Singh, D. Dash and O.N. Srivastava, New Carbon Materials 24(2009) 301-306
- Functionalization Effects on the Electrical Properties of Multi-Walled Carbon Nanotube-Polyacrylamide Composites
Seema Awasthi, **Kalpana Awasthi**, Rajesh Kumar and O.N. Srivastava, J. Nanosci. Nanotech. 9(2009) 5455-5460
- Investigation on Carbon Nanomaterials: Coaxial CNT-Cylinders and CNT-Polymer Composite
Kalpana Awasthi, T. P. Yadav, P. R. Mishra, S. Awasthi and O.N. Srivastava, Bull. Mat. Sci. 31(2008)313-318
- Formation and Microstructural Characterization of Coaxial Carbon Cylinders Consisting of Aligned Carbon Nanotube Stacks
P.R. Mishra, **Kalpana Awasthi** and O.N. Srivastava, J. Nanosci. Nanotech. 7(2007)1815-1819
- Synthesis and Characterization of Carbon Nanotube- Polyethylene Oxide Composites
Kalpana Awasthi, Seema Awasthi, Anchal Srivastava, R. Kamalakaran, S. Talapatra, P. M. Ajayan and O. N. Srivastava, Nanotechnology 17(2006)5417-5422
[This paper has earned unique distinction of being downloaded 250 times just after 28 days of publication (as informed by Publisher)]
- Formation of Carbon Nanotubes without Iron Inclusion and their Alignment through Ferrocene-Ethylene Pyrolysis
Kalpana Awasthi, A.K. Singh and O.N. Srivastava, J. Nanosci. Nanotech. 3(2003) 540-544
- Synthesis and Characterization of Lanthanum Carbide Nanotubes
Kalpana Awasthi, A.K. Singh and O.N. Srivastava, J. Nanosci. Nanotech. 2(2002) 67-71
- Ball-milled Carbon and Hydrogen Storage
Kalpana Awasthi, R. Kamalakaran, A. K. Singh and O. N. Srivastava Int. J. Hydrogen Energy 27(2002) 425-432
- Synthesis of Carbon Nanotubes through Carbon Arc Evaporation Employing Mn, La and Ce Catalysts
Kalpana Awasthi, A.K. Singh and O.N. Srivastava, Fullerene Science and Technology 9 (2001) 397-407, Now published as: Fullerenes, Nanotubes and Carbon Nanostructures

Review Article (02):

- Nanotechnology towards Sustainable Agriculture
Rajani Srivastava, **Kalpana Awasthi** and Dheeraj Tripathi,
International Journal of Scientific Research in Physics and Applied Sciences 6 (2018) 155-158.
- Synthesis of Carbon Nanotubes
Kalpana Awasthi, Anchal Srivastava and O.N. Srivastava, Journal of Nanoscience and Nanotechnology 5(2005)1616- 1636.

Book Chapters (14):

- Chemical Disaster Management: An Integrated Framework for Preparedness, Response, and Recovery
Thakur Prasad Yadav and **Kalpana Awasthi**
In Book: Disaster Management
Editors: Dr. Ravendra Kumar, Dr. Shashi Kant, ISBN: 978-93-49491-62-5 pp.176-195 Publisher: Neel Kamal Prakashan, India (2025)
- Graphene-Metal Oxide Hybrids and their Gas-Sensing Characteristics
Thakur Prasad Yadav, Amit Srivastava, and **Kalpana Awasthi**
In Book: Complex and Composite Metal Oxides for Gas, VOC and Humidity Sensors
Editors: Bal Chandra Yadav, Pragati Kumar, Ghenadii Korotcenkov, ISBN: 978-0-323-95476-1 pp. 291-318 Publisher: Elsevier, International (2024)
- Nanotechnology and its Environmental Nexus
Nishant Shekhar, Manoj Kumar Bharty, Ashlesha Kawale, Arti Srivastava and **Kalpana Awasthi**
In book: Contemporary Green Environmental Issues: Local to Global
Editor: Dr. Rajani Srivastava, ISBN: 978-93-5747-780-2 pp.114-121 Publisher: IIP Iterative Publisher, India (2024)
- Imperative Study of Sustainability in Solid Waste Management: Navigating the Scope and Challenges
Ashlesha Kawale, Nishant Shekhar, **Kalpana Awasthi** and Arti Srivastava
In book: Contemporary Green Environmental Issues: Local to Global
Editor: Dr. Rajani Srivastava, ISBN: 978-93-5747-780-2 pp.129-143 Publisher: IIP Iterative International Publisher, India (2024)
- E-Waste Management through Mechanical Milling: A Sustainable Approach
Thakur Prasad Yadav, Rajani Srivastava and **Kalpana Awasthi**
In Book: Strategies to Achieve Sustainable Development Goals (SDGs)
Editor: Dr. Rajani Srivastava, ISBN: 978-1-68507-836-2 pp. 1-26 Publisher: NOVA Science Publisher Inc, New York (2022)
- Synthesis of Novel Complex Metallic Alloys
Thakur Prasad Yadav and **Kalpana Awasthi**
Springer Proceedings in Physics 278
Editors: Kusum Lata Pandey , Pradip Kumar Priya , Umesh Kumar Yadav, Prashanta Kuma Khandai, ISBN: 978- 981-19-2591-7 pp. 25-38 Publisher: Springer (2021).
- Environmental Pollution Management Using 2D Carbon Nanomaterial: Graphene
Kalpana Awasthi and Seema Awasthi
In Book: Renewable Energy Sources An Assessment in Environmental Scenario
Editors: Dr. Abhimanyu Yadav, Dr. Madhu Tiwari, ISBN: 978-81-949793-0-2, pp.145-156 Publisher: Bharti Publications, New Delhi (2020)
- Hydrogen Energy: A Clean and Green Fuel
T. P. Yadav and **Kalpana Awasthi**
In Book: Environmental Aspect of Alternative Energy Sources Editors: Dr. Madhu Tiwari, Dr. Abhimanyu Yadav, ISBN: 978-93-89657-43-2, pp.30-38 Publisher: Bharti Publications, New Delhi (2020)
- Investigations on Exotic Forms of Carbon: Nanotubes, Graphene, Fullerene, and Quantum Dots
Mahe Talat, **Kalpana Awasthi**, Vikas Kumar Singh, O.N. Srivastava
In Book: Functionalized Nanomaterials I: Fabrications **Editors:** Vineet Kumar ,Praveen Guleria,Nandita Dasgupta, Shivendu Ranjan, ISBN: 978-0-8153-7041-3,pp.125-132 Publisher: CRC Press Taylor & Francis group (2020)
- Carbon Nanomaterials for Crop Management, **Kalpana Awasthi** and Rahul Awasthi
In Book: Sustainable Practices for Natural Resource Management Through Biological Tools **Editor:** Dr. Rajani Srivastava, ISBN: 978-81-942473-5-7, pp.1-12 (2019) Publisher: Bharti Publications (New Delhi, India)

- Chirality-Selective Growth of Carbon Nanotubes on Quasicrystalline Alloys, **Kalpna Awasthi**, T. P. Yadav and O. N. Srivastava
In Book: Advances in Chemical Sciences, Vol.2, Editors: Dr. Mridula Tripathi, Dr. S.K. Sivastava, Dr. Roli Srivastava, ISBN: 978-93-88018-17-3, pp.1-12(**2019**) Publisher: Firstprint Publications, (Allahabad, India) (**2019**)
- Synthesis and Applications of Carbon Nanotubes, **Kalpna Awasthi** and O.N. Srivastava
In Book: Synthesis and Characterization (Nanotechnology Series) (**Vol. Editor:** Dr. Shishir Sinha and Dr. Naveen K. Navani) Executive Editor: Dr. J.N. Govil, ISBN: 1-62699-002-6, Vol.2, pages121-171 (**2013**) **Publisher:** Studium Press LLC, USA
- Use of Ferrocene and Ferrocene Admixed Precursors in Synthesis of Carbon Nanotubes, **Kalpna Awasthi** and O.N. Srivastava **In Book:** Ferrocene: Compounds, Properties and Applications, **Eds.** Elisabeth S. Phillips) ISBN: 978-1-61761-880-2, pages 1-28, **2010**, **Publisher:** Nova Science Inc., New York
- Synthesis of Carbon Nanotubes, **Kalpna Awasthi** and O.N. Srivastava, **In Book:** Chemistry of Carbon Nanotubes (**Eds.** V.A. Basiuk and E.V. Basiuk) ISBN: 978-1-58883-128-0, Vol. 1, **2008**, pp. 1-26, **Publisher:** American Scientific Publishers

Research Book (01)

Synthesis and Characterization of Carbon Nanotubes and Related Materials
Publisher: Lambert Academic Publisher, ISBN: 978-3-659-44559-0 (**2013**) pp.1-173.

Edited Books (04):

- Materials Science: A Field of Diverse Industrial Applications
Editors: Dr. Arti Srivastava, Dr. Mridula Tripathi, **Dr. Kalpna Awasthi** and Dr.Subhash Banerjee
Publisher: Bentham Science Publishers Pte. Ltd. Singapore ISBN: 978-981-5051-24-7 (2023) pp 1-179.
- Material Science: Future Aspects
Editors: **Dr. Kalpna Awasthi**, Dr. Arti Srivastava and Dr. Mridula Tripathi,
Publisher: NOVA Science Publisher Inc, New York ISBN: 978-1-68507-843-0 (**2022**) pp 1-264.
- Physical and Biological Sciences: Know- how Social Solicitation
Editors: Mridula Tripathi, Arti Srivastava, **Kalpna Awasthi**, Hemlata Pant and Priyanka Chawla
Publisher: Krishna Computer Sansthan, India ISBN: 978-81-956345-9-0 (2022) pp 1-325.
- Versatile Solicitations of Materials Science in Diverse Science Fields
Editors: Dr. Mridula Tripathi, Dr. Arti Srivastava and **Dr. Kalpna Awasthi**
Publisher: NOVA Science Publisher Inc, New York ISBN: 978-1-53619-798-3 (**2021**) pp 1-328.

Paper in Conference Proceedings (06)

- Google Classroom: Interactive Teaching and Learning Tool
Kalpna Awasthi
In Recent Advances & Innovations in Physics Teaching and Research Eds: Dr Akhilesh Tiware & Dr Pramod Kumar, Publisher: LAMBERT Academic Publishing ISBN: 978-620-0-78765-1 pp32-33(2020)
- Synthesis of CNTs by Low Pressure Chemical Vapor Deposition using Ferritin Based Fe Catalyst, **Kalpna Awasthi**, Seema Awasthi and O. N. Srivastava, Emerging Paradigms in Nanotechnology pp104-107(2013).
- Preparation of Graphene Sheets by Carbon Nanotubes, **Kalpna Awasthi** and O.N. Srivastava, 3rd National Conference on Nanomaterials and Nanotechnology (**2010**)135
- Investigations on Electrical Properties of Polyacrylamide-Carbon Nanotube Composites, Seema Awasthi, **Kalpna Awasthi**, and O.N. Srivastava, Int. Conf. on Recent Advance Composite Material (**2007**) 416
- Carbon Special Forms (Graphitic Nanofibres, Ball-milled Carbon) as Hydrogen Storage Materials, Bipin Kumar Gupta, **Kalpna Awasthi**, A.K. Singh and O.N. Srivastava, Hydrogen Energy Progress 14(**2002**) A2-9
- New Carbon Variants: Graphitic Nanofibres and Nanotubes as Hydrogen Storage Materials, Bipin Kumar Gupta, **Kalpna Awasthi** and O.N. Srivastava, Hydrogen Energy Progress 13(**2000**) 487

Conferences/Workshops /School Attended

National Conferences (36)

- Green Energy Technology for Sustainable Viksit Bharat (Oral) National Seminar on Approaches to Sustainable Development towards Viksit Bharat @2047, Govt. Degree College, Saiyadraja, 01-02 June **2026**.
- Eco-Sustainable Graphene/Graphene Oxide Synthesis from Agrowaste Derived Carbon (Invited Lecture) National Seminar and Workshop on Advanced Functional Materials and Applications, Centre of Material Sciences, University of Allahabad, Prayagraj, 20-21 Feb. **2026**.
- Sustainable Synthesis of Graphene Oxide from Agrowaste (Invited Lecture) National Conference on Recent Advances in Condensed Matter Physics, Department of Physics, Ewing Christian College, Prayagraj, 21-22 March **2025**.
- Innovative Approaches Towards Synthesis and Applications of Carbon Nanomaterials (Invited Lecture) National Conference on Frontiers in Science & Sustainability: Innovations in Research for Viksit Bharat, Sunbeam College for Women, Varanasi, 10-11 March, **2025**.
- Graphene Oxide: A Promising Nanomaterial for Energy (Oral) National Conf. on Exploring Science & Technology Innovations, Department of Physics, SRMIST Delhi- NCR Campus, Modinagar, Ghaziabad, 30-31 August, **2024**.
- Environmental Remediation using Nanomaterials (Oral) National Seminar on Perspective on Environment and Biodiversity Conservation, K.B.P.G. College, Mirzapur, 30-31 March, **2024**.
- Graphene Oxide: Effective Adsorptive Materials for Removal of Dyes (Invited Lecture) National Conference on Hydrogen Energy and Advanced Materials, Department of Physics, BHU, Varanasi, 24-25 April, **2023**.
- Need of Self-Reliant India (Oral) National Seminar on Self-Reliant India: Challenges and Prospects, Faculty of Commerce, KNPG College, Gyanpur, Bhadohi, 24-25 March **2023**
- NEP 2020: Multidisciplinary Approach in Higher Education, National Seminar on Role of NEP-2020 in the Transformation of Higher Education, Mahamaya Govt. Degree College Mahona, Lucknow, 19 March **2023**.
- Graphene Oxide: Carrier for Slow Release of Plant Micronutrients (Oral) National Conference on Biological Diversity & Environmental Sustainability, Department of Botany, KNPG College, Gyanpur, Bhadohi, 25-26 March **2022**.
- Targeted Drug Delivery using Carbon Nanomaterials (Oral) National Symposium on Laser in Biology, Medical Science, Atmospheric Science and Climate Change, Department of Physics, UP College, Varanasi, 14-15 March **2022**
- Waste Management Using Nanotechnology (Invited) National Conference on Green Technology: A Roadmap for Sustainable Development, Department of Chemistry, HNB Govt. P.G. College, Naini, Prayagraj, February 23- 24, **2020**
- Google Classroom: Interactive Teaching and Learning Tool (Oral) XXXIV Annual IAPT Convention-2019, National Seminar on Recent Advances & Innovations in Physics Teaching & Research, Department of Applied Sciences, Indian Institute of Information Technology Allahabad, Prayagraj, October 13-15, **2019**.
- Allotropes of Carbon-Based Nanomaterials (Invited talk), National Seminar on Innovative Frontiers in Applied Sciences, Department of Chemistry, CMP Degree College, Prayagraj, Sept.26-28, **2019**
- Nanotechnology in Herbal Drugs (Oral) National Conference on Heal from Greens, Deptt. of Botany, K.N. Govt. P.G. College, Gyanpur, Bhadohi, March 30-31, **2019**.
- Raman Spectroscopic Investigation of Carbon Nanomaterials, (Oral) National Symposium on Applied Spectroscopy: Biology and Medical Science, Department of Physics, U.P. College, Varanasi February 19-20, **2019**
- Multifunctional Carbon Nanostructures for Energy Applications, (Invited talk) National Conference on Advanced Nanomaterials and their Applications, Department of Physics, MNNIT Allahabad, Prayagraj, December 21-23, **2018**.
- Molybdenum Disulfide (MoS_2): Promising Electrocatalyst for Hydrogen Evolution (Oral) National Conference on Hydrogen Energy in Indian Perspective: Role of Nanomaterials, Hydrogen Energy Centre, Deptt. of Physics, B.H.U., Varanasi, October 31-Nov. 02, **2018**.
- Functional Two-Dimensional Transition Metal Dichalcogenide Beyond Graphene, (Poster) National Conference on Recent Trends in Condensed Matter Physics and Materials, Deptt. of Physics, B.H.U., Varanasi, September 15-16, **2018**.
- Nanotechnology and sustainable agriculture: What are the possibilities? (Oral) National conference on Environmental Issues and Challenges in India Ramabai Govt. Mahila P.G. College, Akbarpur, Ambedkar Nagar, February 04-05, **2018**.
- Carbon Nanomaterials for Renewable Energy Generation and Storage, (Oral) National Conf. on Energy, Environment and its Impact on Society, Faculty of Science, K. N. Govt. P. G. College, Gyanpur, Bhadohi, Jan. 19-20, **2017**.

- Functionalized Carbon Nanotubes as a Novel Drug Delivery System, (Oral) National Conf. on Scientific approach for Welfare of Society, Deptt. of Botany, K.N. Govt. P.G. College, Gyanpur, Bhadohi, March30-31, **2016**.
- Graphene: Exotic form of Carbon, (Poster) in National seminar on Recent Advances in Physical Sciences, Deptt. of Physics, U.P. College, Varanasi, Feb.28,**2015**.
- Nanomaterials for Waste Water Managements (Oral) National seminar on Environmental Conservation, Sustainable Development and Industrial Expansion in 21st Century, Deptt. of Botany, ABR P.G. College, Anpara, Sonebhadra, Feb.21-22,**2015**.
- Role of Nanomaterials to Clean up the Environment, (Oral)National Conference on Vistas of Environmental Awareness, K.N. Govt. P.G. College, Gyanpur, Bhadohi, March30-31, **2014**.
- Preparation and Characterization of Amino Functionalized Carbon Nanotubes (Invited Lecture) in National conference on Chemistry and Life, Deptt. of Chemistry, C.M.P. College, Allahabad, Sept.16-17, **2012**.
- Synthesis Carbon Nanotubes by Chemical Method, (Oral) National Conference on Nanomaterials & Applications: Present Position and Road Ahead, Deptt. of Physics, B.H.U., Varanasi, March 16-18, **2011**.
- Investigations on Carbon Nanotubes (Invited talk) National Conference on Advancement of Nanomaterials and its Applications, D.A-V College, Kanpur, Feb.15-16, **2011**.
- Preparation of Graphene from Carbon Nanotube (Poster) 3rd National Conference on Nanomaterials and Nanotechnology, Amity University, Lucknow Campus, Lucknow, Dec.21-23, **2010**.
- Functionalization of Carbon Nanotubes and their Application for Polymer Composite (Oral) National Symposium on Synthesis, Characterization and Applications of Technologically Important Materials, Deptt. of Physics, B.H.U., Varanasi, Jan.5-6, **2010**.
- Synthesis of Carbon Nanotubes (Oral) 1st One Day Conference on New Trends in Research, Deptt. of Physics, B.H.U., Varanasi, Oct. 27,**2007**
- Synthesis of Carbon Nanotubes by Arc-Discharge Method Symposium on Recent Developments in Nano Materials and their Applications (Participation), Deptt. of Physics, B.H.U., Varanasi, March 13-14, **2007**
- Carbon Nanotubes and CNT-polymer Composite (Oral) One Day Workshop on Nanoscience and Nanotechnology, Deptt. of Physics, B.H.U., Varanasi, March 20, **2006**.
- Ball-Milled Carbon and Hydrogen Storage (Poster), 31st National Seminar on Crystallography, BARC, Bombay, June 2001
- Formation and Characterization of Carbon Nanotubes and Carbide Nanorods (Poster), 31st National Seminar on Crystallography, BARC, Bombay, June, **2001**
- Formation and Characterization of Carbon Nanotubes (Poster), VISION 2001, Dept. of Physics, B.H.U., Varanasi, May, **2001**

International Conferences (24)

- Nanotechnology Evolution from Carbon (Invited Lecture) Int. Conf. on Indian Knowledge System: Opportunities, Possibilities and Challenges, CMP Degree College, Univ. of Allahabad, Prayagraj, 18-19 Feb. **2025**.
- Two-Dimensional Carbon Nanomaterials (Graphene Oxide) Material for Energy (Invited Lecture) Int. Conf. on Advancement in Functional Materials. Prof. Rajendra Singh Institute of Phys. Sci. for Study and Research, Veer Bahadur Singh Purvanchal University, Jaunpur, 8-10 Feb. **2024**
- Two-Dimensional Carbon Nanomaterial (Graphene Oxide): Active Ingredient for Enhancing Plant Growth Int. Conf. Cont. Multi. Issues in Applied Sciences, Humanities, Agriculture, Animal health and Production (Invited Lecture) Rajiv Gandhi South Campus, Barkachha, Mirzapur, 14-15 Nov. **2022**.
- Carbon Based Nanomaterials: Glimpse of Synthesis and Applications (Invited talk) 27th International Conference of International Academy of Physical Sciences on Hydrogen Energy and Nanomaterials, Department of Physics, BHU, Varanasi, 26-28 Oct.**2021**.
- Non-Covalent Functionalized Carbon Nanotubes (Oral) International E Conference on Advanced Functional Materials and Optoelectronic Devices, Centre for Renewable Energy, Prof. Rajendra Singh Institute of Physical Sciences for Study and Research, VBS Purvanchal University, Jaunpur, June 13-15,**2020**
- Functionalized Multi-walled Carbon Nanotubes (Oral) International Conference on Ultrasonics and Materials Science for Advanced Technology, Department of Physics, Prof. Rajendra Singh Institute of Physical Sciences for Study and Research, VBS Purvanchal University, Jaunpur, November 16-18,**2019**
- Nanotechnology for Green Energy Management (Oral) International Conference on Recent Trends and experimental approaches in Science, Technology, Agriculture and Management, Footwear Design & Development Institute, Amethi, October 20-21, **2019**
- Growth of Carbon nanotubes on Al-Cu-Fe quasicrystal (Oral) International Conference on Nanoscience and Nanotechnology, Department of Applied Physics, School of Physical Sciences, Babasaheb Bhimrao Ambedkar University, Lucknow, September 22-24, **2017**.

- Uniform diameter and high-density growth of single- walled carbon nanotubes (Oral) International Conference on Nanomaterials & Nanotechnology, March01-03, **2017**. Vinoba Bhave Research Institute, Saidabad, Allahabad.
- Spectroscopic Investigations on functionalized Carbon nanotubes (Oral) Int Conf on Advances in Light Technologies and Spectroscopy of Materials, Department of Physics, Lucnow University, January 16-18, **2016**
- Synthesis of Aligned Single-Walled carbon Nanotubes (Oral) Int. Conf. on Multifunctional Materials for Future Applications, Deptt of Chemistry, IIT BHU, Varanasi, Oct. 27-29,**2015**
- Synthesis Methods of Carbon Nanotubes (Invited Talk) Int. Conference on Nanoscience and Life, Deptt. of Physics, B.H.U., Varanasi ,28 Feb.- 2 March, **2015**
- Investigations on Functionalization of Carbon Nanotubes, (Oral presentation) Int. Conference on Advanced Materials and Applications (ICAMA-2014), Centre of Material Sciences, University of Allahabad March 24-26, **2014**
- Applications of Carbon Nanotubes (Oral) Int. Conference on Nanomaterials with Special Reference to Energy Security, Deptt. of Physics, B.H.U., Varanasi, March 12-14, **2014**
- Studies on the dispersion of Graphene and CNT in aqueous solutions with different types of surfactants (Poster) Int. Conference on Nanoscience and Nanotechnology, Babasabheb Bhimrao Ambedkar university, Lucknow, Nov.18-20, **2013**
- Synthesis of CNTs by Low Pressure Chemical Vapor Deposition using Ferritin Based Fe Catalyst, (Oral) Frontiers in Nanoscience, Nanotechnology and their Applications Panjab University, Chandigarh, Feb. 16-18, **2012**
- Higher Education and sustainable Development; Emerging challenges and Mahamana's Vision (Participation) Banaras Hindu University, Varanasi, Dec. 24-25, **2010**
- Attachment of Biomolecules with Amino Functionalized Carbon Nanotubes (Oral) 96th Indian Science Congress, North-Eastern Hill University Shilong, Jan. 3-7, **2009**
- Higher Education: Global Perspective and Indian Vision (Participation) Banaras Hindu University, Varanasi, Dec. 25-27, **2009**
- **Award Lecturer:** New Studies on Carbon Nanotube-Polyethylene Oxide Composites (Presented in young scientist award lecture programme of physical sciences in 95th Indian Science Congress, Andhra University, Visakhapatnam), Jan.3-7, **2008**
- Nanoscience and Technology (Participation) Chennai Feb. 27-29, 2008.
- Synthesis of Carbon Nanotube Using Natural Hydrocarbon Precursors (Bio-diesel, Caster and Sun flower oil) 14 APAM Conferences on State of Materials Research and New Trends in Materials, Science, NPL New Delhi, Nov. 18-20, **2008**
- High Yield Synthesis of Aligned Carbon Nanotubes Bundles Using A Natural Precursor: Turpentine Oil (Poster) Humboldt-Kolleg on Structural Characterization and Spectroscopy of Materials Relevant to Nanotechnology, Biomedical and Geobiology, Deptt. of Physics, B.H.U., Varanasi, Nov. 7-9, **2008**
- Carbon Nanotube-Polyethylene Oxide Composite: Microstructural and Electrical Investigation (Oral) Int. Conf. on Recent Advance Composite Materials, B.H.U., Varanasi, Dec.17-19, **2004**.

Workshops/ School (8)

- One Day Workshop on NAAC Awareness programme, Mahatma Gandhi Kashi Vidhyapeeth, Varanasi, March 26, 2019
- Workshop on MOOCs, E- content Development and Open Educational Resources, UGC-HRDC, B.H.U., August 19-25, 2018
- One day workshop on Attaining Sustainable Development Goals in India by 2030: Challenges & Opportunities, Rajiv Gandhi South Campus, Barkachha, November 10, 2017
- Workshop on Exotic materials: Synthesis, Characterization and Application, Deptt. of Physics, B.H.U., Varanasi, January . 1-3, **2013**
- Pre - Conference Workshop NanoSciTech-2012. Panjab University, Chandigarh, Febury 15, **2012**
- Workshop on Multifunctional Materials, Deptt. of Physics, B.H.U., Varanasi, December 6, **2010**
- DST - Advanced School on Nanoscience and Nanobiology, Indian Institute of Science, Bangalore (5-16 Feb. **2007**)
- One day Workshop on Nanoscience and Technology, Deptt. of Physics, B.H.U., Varanasi, March 20, **2006**

Co-Curricular Activities:

- Organizers of Online Lecture Series on Emergence of Material Science organized by Physics Department, K.N. Govt. P. G. College, Gyanpur, December 2020- February 2021).
- Convener, National Conference on Innovative Approaches Towards Sustainable Development Organized by Department of Physics, K.N. Govt. P. G. College, Gyanpur, January 09-10, 2020.
- Convener, Workshop on Experimental Crystallography, Organized by IQAC and Department of Physics, K.N. Govt. P. G. College, Gyanpur, March 27-28, 2019.
- Organizing Secretary, Workshop on E-Literacy organized under Nari Sashaktikaran Sankalp Abhiyan, K.N. Govt. P. G. College, Gyanpur, December 19, 2018.
- Faculty Coordinator of Spoken Tutorial Software Training Programme (2018-2019) - MHRD
- Counselor in conducting the online course on Overview of RS and GIS Applications for Natural Resource Management organized by Indian Institute of Remote Sensing under off-campus outreach certificate programme, November 13- December 01, 2017.
- Organizing Secretary, National Conference on Energy, Environment and its Impact on Society, Organized by Faculty of Science, K.N. Govt. P. G. College, Gyanpur, January 19-20, 2017
- Convener, Workshop on Current Trend in Material Science, Organized by Department of Physics, K.N. Govt. P. G. College, Gyanpur, February 18-24, 2016
- Organizing Committee Member, National Conference on Vistas of Scientific Approach for Welfare of Society, Organized by Department of Botany, K.N. Govt. P. G. College, Gyanpur, March 30-31, 2016
- Organizing Secretary, National Conference on Vistas of Environmental Awareness, K.N. Govt. P. G. College, Gyanpur, March 30-31, 2014

Administrative Responsibilities:

- Centre Incharge (Bhadohi - Dist.) of National Graduate Physics Examination, Conducted by Indian Association of Physics Teachers (2017-till now)
- DBT Star College Scheme: Project Coordinator (2020 - 10 July 2021) & Course Coordinator (2021- 2023)
- IQAC Coordinator (2019- 2022)
- NIRF Coordinator (2019-Till now)
- AISHE Nodal Officer (2019-20)
- Convener, Institution Innovation Council KNPG College-2018-2019
- Vice-President Institution Innovation Council KNPG College (2020- 2025)
- Departmental Course Coordinator: DST-FIST Scheme 2024
- Head of Department (From 2023- till now)
- Nodal Coordinator (Virtual Lab) (2025-till now)

Kalpna

Dr. Kalpana Awasthi

Professor, Head of Department

Kashi Naresh University, Bhadohi