

Dr. SEEMA GUPTA

Professor
Department of Chemistry
Acharya Narendra Dev College (University of Delhi)
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➤ **ACADEMIC QUALIFICATION:** M. Phil., Ph.D.

- **Ph.D.**, Department of Chemistry, University of Delhi, Delhi, INDIA(1992)
- **M.Phil.**, Department of Chemistry, University of Delhi, Delhi, INDIA (1988)
- **M. Sc.**, D.A.V. College, Jalandhar, Guru Nanak Dev University, Amritsar, Punjab, INDIA(1986)
- **B.Sc.**, Govt. College, Ropar, Punjabi University, Patiala, Punjab, INDIA(1984)

➤ **TEACHING EXPERIENCE** : 32 years

➤ **CAREER PROFILE**

- Professor, Acharya Narendra Dev College (University of Delhi) since August 2021
- Associate Professor/Reader, Acharya Narendra Dev College (University of Delhi) from August 2000-August 2021
- Senior Lecturer, Acharya Narendra Dev College (University of Delhi) from September 1996-August 2000
- Lecturer, Acharya Narendra Dev College (University of Delhi) from September 1992-September 1996
- Lecturer (Adhoc), Miranda House (University of Delhi) from January 1990- March 1990
- Lecturer (Adhoc), Daulat Ram College (University of Delhi) from August 1990- April 1992
- Lecturer (Adhoc), Gargi College (University of Delhi) from August 1992- September 1992

➤ **SUBJECTS TAUGHT**

- Atomic Structure
- Periodic Table and periodic properties
- Chemical Bonding
- s, p, d and f block elements and their compounds
- Metallurgy
- Coordination Chemistry
- Bioinorganic Chemistry
- Organometallic Chemistry
- Novel Inorganic Solids, Nanomaterials

➤ **Recognized as Ph.D. Supervisor by Department of Chemistry (University of Delhi)**

➤ **AREAS OF INTEREST / SPECIALIZATION**

Coordination Chemistry, Inorganic and material Chemistry, Bioinorganic Chemistry, Inorganic Nanomaterials
Synthesis and Characterization of new metallic nanomaterials and their biological applications

➤ **ADMINISTRATIVE POSITIONS HELD IN COLLEGE**

- Vice Principal : 2010- 2012
- Bursar : 2001- 2003
- Coordinator, Steering Committee for National Assessment and Accreditation Council : 2014- 2016
- Teacher –in-charge(Chemistry Department) : 1995-1997, 2002-04
- Proctor : 2008-2010
- Convener, Disciplinary Committee : 1996-1997
- Member College Complaints Committee in University of Delhi representing College : 2004-2006
- Superintendent Examinations 'Category B' : 2002
- Deputy Superintendent Examinations : 2008-2013
- Liaison Officer : 2012-2014, 2021-present
- Transparency Officer : 2010-2012
- Convener, College Development Committee : 2007-2010
- Convener, Fellowship Committee : 2004-2006
- Convener, Internal Assessment Committee : 2006-2008
- Convener, Attendance Committee : 2006-2008
- Convener, Remedial Coaching Classes : 2012-2014
- Convener, Annual Academic Events Committee : 2014-2016
- Convener, Eco Club : 2016-2019
- Convener, Library Committee : 2020-Present
- Convener, Examination Committee : 2022-present

➤ **OTHER ADMINISTRATIVE ASSIGNMENTS**

- Member, Preparation of Document 'ANDC DOWN THE YEARS...'
- Coordinator, Committee for *Antardhwani* 2014 and 2015; Cultural Festival Organized by University of Delhi where college is awarded third and first position respectively in category of "Award for Good Practices"
- Coordinator Internal Quality Assurance Cell : 2015- 2018
- Member, Finance Committee : 2015- 2018
- Member, Research Monitoring Committee : 2014- 2016
- Member, College New Building Committee : 2015- 2016
- Coordinator, Silver Jubilee Celebrations '*Rajatotsav*': 2015-2016
- Departmental Coordinator, DBT-STAR Scheme : 2016-2018
- **Initiated and coordinated a job oriented Skill development Course "Quality Control Chemist" in the Life Sciences Sector/Industry certified by NSDC and Life Sciences Sector Skill Council 2017-2019**

➤ **E CONTENT: For Undergraduate Students**

- Study materials on chemistry. <http://wikieducator.org/User:Seemagupta/Atmosphere>
- How to weigh a compound <https://www.youtube.com/watch?v=1oH4JGLzx-8>
- How to prepare a standard solution <https://www.youtube.com/watch?v=bV7vdzi6MxE>
- Lecture on Titrimetric Analysis <https://www.youtube.com/watch?v=RyG3U1vQky8>
- Demo Titration of Potassium Permanganate Vs. Oxalic acid <https://www.youtube.com/watch?v=yO9kIqaQBGE>

➤ **BOOK/Chapter PUBLICATIONS**

- Chapter ‘Hydrogels for drug delivery’ in Book entitled Nanomaterials: Evolution and Advancement towards Therapeutic Drug Delivery (Part II)
- How to face Chemistry(2005), Class XI: Dr. Sunita Hooda, **Dr. Seema Gupta**, Dr. Pooja Bhagat ; Publisher: Pyragon, International Publication
- Content Contributor and Reviewer of the Global Edition of ‘Chemistry,7/E by McMurry, Fay, Robinson
- Content Contribution to the Global addition of Introductory Chemistry, 6th edition by Nivaldo J. Tro,

➤ **AWARDS**

- SERS Women Scientist Award by Scientific Educational Research Society, Meerut(U.P.) India in June, 2019 at Kuala Lumpur, Malaysia
- Meritorious Teachers Award -2017 by Govt. of NCT of Delhi
- “Certificate of Appreciation” Awarded for being selected for the Research Display at the Convocation ceremony on November 19, 2016 by University of Delhi.
- Service Award- निष्ठा In Appreciation of 25 Years of dedication and outstanding service (1992-2017) at Acharya Narendra Dev college(University of Delhi), March 22, 2018
- Highly rating Project among awarded Innovation Project selected in special area of display at *Antardhwani* 2014, University of Delhi

➤ **RESEARCH**

• **REFREED PUBLICATIONS**

1. Singh, R., **Gupta, S.**, & Kumar, P. (2022). The Role of Nanotechnology in Antiviral Regime: An Overview. *Nano Life*, 12(01), 2130011.
2. Deka S.R., **Seema Gupta**, Pradeep Kumar. (2021) Applications of Chitosan in Tissue Engineering. *Trends In Carbohydrate Research*, Vol.13, No.1; 1-11
3. Singh, I., Dhawan, G., **Gupta, S.**, & Kumar, P.(2021) Mannosylated and mannan-modified nanovectors targeting Resident Tissue Macrophages (RTM) for efficient pharmacotherapy. (2021) *Trends In Carbohydrate Research*, Vol.13, No.1; 71-81

4. Singh, I., **Gupta, S.**, Gautam, H. K., Dhawan, G., & Kumar, P. (2020). Antimicrobial, radical scavenging, and dye degradation potential of nontoxic biogenic silver nanoparticles using *Cassia fistula* pods. *Chemical Papers*, 1-13.
5. Singh, I., Dhawan, G., **Gupta, S.**, & Kumar, P. (2020). Recent Advances in a Polydopamine-Mediated Antimicrobial Adhesion System. *Frontiers in Microbiology*, 11.
6. Sharma, B., Singh, I., Bajar, S., **Gupta, S.**, Gautam, H., & Kumar, P. (2020). Biogenic silver nanoparticles: evaluation of their biological and catalytic potential. *Indian Journal of Microbiology*, 60, 468-474.
7. **Gupta, S.**, Singh, I., Sharma, A. K., & Kumar, P. (2020). Ultrashort peptide self-assembly: Front-runners to transport drug and gene cargos. *Frontiers in bioengineering and biotechnology*, 8.
8. G. Dhawan, **S. Gupta**, M. Jain, U. Dhawan, Deepika , P. Dungriyal , Z. Zaidi , Y. Singh , J. Thakur , Dharmendra , A. Chauhan and K. Sharma, "An Explorative Study on Knowledge and Awareness of Health Problems Related to Usage of Fabric Dyes by Road Side Dyers in Delhi, India" *DU Journal of Undergraduate Research and Innovation* Volume 1, Issue 3 pp 20-25, 2015
9. B.S.Garg, Vinod Kumar and **Seema Walia** "Evaluation of Thermodynamic functions for complexation reactions involving bimetal ions and ethyl-2,3 dioxobutyrate-2p-bromo-phenylhydrazone" *Journal of Chemical Sciences* Volume 104, Number 5(1992), 543-547
10. B.S.Garg, **Seema Walia** and V.K.Jain "Investigation of complexation Equilibria and evaluation of thermodynamic parameters of complexes of bivalent metal ions with 2,4-pentanedione-1-(3-chlorophenylhydrazone)PD3CPH using potentiometric technique" *Thermochimica Acta*, 185(1991)263-269
11. B.S.Garg, V.K.Jain and **Seema Walia** "Determination of thermodynamic parameters and stability constants of various dipositively charged metal ions with 2,4-pentanedione-1-(2-chlorophenylhydrazone)PD2CPH using potentiometric technique" *Thermochimica Acta*, 182(1991)329-335
12. B.S.Garg, R.K.Sharma and **Seema Walia** "Liquid-Solid Phase extractions of Complexes of acenaphthaquinonemonoxime with Pd(II) and Co(II) and their spectrophotometric determination" *Vijana Parishad Anusandhan Ptriika* Vol.32.No.2,1989

ORAL/ POSTER PRESENTATION IN INTERNATIONAL/NATIONAL CONFERENCES

- **Gupta S.**, *Gold Nanoparticles Based Optical Biosensor for Trypsin Sensing*' Oral presentation at International Conference on 'Innovative Approaches in Applied sciences and technologies' held from 25-29 June, 2019 at Kuala Lumpur, Malaysia.
- Agarwal G., Chauhan P., Kumar Y., Lakhani D., Singh I., Gautam H.K., **Gupta S.**, Dhawan U., and Dhawan G., Synthesis of silver nanoparticle using *Terminalia Bellerica*: Physicochemical Characterization and their Anti-Biofilm Evaluation, Poster Presentation at 6th World Congress on Nanomedical Sciences under the program

Chemistry Biology Interface: synergistic in New frontiers(CBINSF-2019) organized by Jamia Hamdard & University of Delhi on January 7-9, 2019 at Vigyan Bhawan.

- Vajpayee S., Shandheep A., Arora H., Tiwari S., **Gupta S.**, Kumar R., Arora K., Mittal N., Mewari K., Gupta S., Bhagat P., Biswas K. and Dhawan G. *Synthesis and biological analysis of oxindole-based isoxazolines leading to analog synthesis of marine natural product Flustraminol-B with prime biological significance* Oral presentation at International conference on “Green Chemistry in Environmental Sustainability & Chemical Education”- ICGC2016 held at Department of Chemistry, Daulat Ram College from 17-18 November, 2016
- Shandheep A., Vajpayee S., Arora H., Tiwari S., **Gupta S.**, Kumar R., Arora K., Mittal N., Mewari K., Gupta S., Bhagat P., Biswas K. and Dhawan G. *Design, synthesis and biological evaluation of oxindole-based isoxazolines towards the analog synthesis of marine natural product Flustraminol-B* Poster presentation at International conference on “Green Chemistry in Environmental Sustainability & Chemical Education”- ICGC 2016 held at Department of Chemistry, Daulat Ram College from 17-18 November, 2016
- Saurabh Yadav, **Seema Gupta** and Gagan Dhawan *Synthetic Fabrication of Gold Nanoparticle with Controlled Shape, Size and Surface Functionality* Poster presentation at India International Science Festival (IISF) - Young Scientists’ Conclave (YSC), held at CSIR-National Physical Laboratory (NPL) Campus, New Delhi during 7-11 December, 2016
- Nitish Kumar, Ritika Madaan, **Seema Gupta** and Gagan Dhawan *Characterisation and comparison of different synthesis methods of CuS nanoparticles* Poster presentation at India International Science Festival (IISF) - Young Scientists’ Conclave (YSC), held at CSIR-National Physical Laboratory (NPL) Campus, New Delhi during 7-11 December, 2016
- Anmol, Jayati Khanna, **Seema Gupta** and Gagan Dhawan *Synthesis of Zinc Sulfide and Lead Sulfide Nanoparticles by Chemical Precipitation Method using Different Capping Agents* Poster presentation at India International Science Festival (IISF) - Young Scientists’ Conclave (YSC), held at CSIR-National Physical Laboratory (NPL) Campus, New Delhi during 7-11 December, 2016
- Harshit Arora, Sandeep Gupta, Aparna Shandheep, Srishti Vajpayee, Sumit Tiwari, Kanika Arora, Rajeev Kumar, Nitin Mittal, Komal Mewari, **Seema Gupta**, Pooja Bhagat, Kallolmay Biswas and Gagan Dhawan *One Pot Synthesis and Antimicrobial Activity of Oxindole-Based Spirocyclic Isoxazolines* Poster presentation at National conference on Recent Advances in Biomedical Science: Diagnosis & Research and 2nd Annual Scholar’s Meet at SBMLS” organised by The Society of Biomedical Laboratory Scientists, India held at Gandhi Peace Foundation, University of Delhi on December 16, 2016
- Arora H., Vajpayee S., Shandheep A., Tiwari S., Gupta S., Kumar R., Arora K., Mittal N., Mewari K., **Gupta S.**, Bhagat P., Biswas K. and Dhawan G. *Design, synthesis and biological evaluation of oxindole-based isoxazolines towards the analog synthesis of marine natural product Flustraminol-B* Poster presentation at Innovation Conclave-2016, Nurturing Research at the UG level held at Acharya Narendra Dev College(University of Delhi) during October 25-26,2016
- Oral Presentation by Pooja Rawat, on ‘*Environment Management by Chemical Waste Treatment and Recycling at the source*’ Neha Kumari, Sweta Sharma, Shubham

Biswas, Seema Gupta and Manisha Jain at international Conference on Harnessing Engineering Technology and Innovation for Sustainable Development held at Dr S S B University of Chemical Engineering and Technology, Punjab University, Chandigarh, India on 19-20 September 2014 under Technical Education Quality Improvement Program.

- Presented research paper entitled “*Linear free energy relationship of substituents in 2-, 3-, and 4- position of phenyl nucleus with respect to N-atom of substituted hydrazone*” at 2007 - (28th) - International Conference on Science & Technology held at Prague, Czech Republic during July 5-6, 2007.
- Presented poster paper entitled “*Comparative studies of dipositively charged metal ions with 2,4-pentanedione-1-(2-chlorophenylhydrazone)PD2CPH, PD3CPH and PD4CPH using potentiometric technique*” at International symposium on ‘Current trends in Chemical Research’ at Department of Chemistry, University of Delhi, January 7-8, 1991.
- Eshant Bhatia, Divyansh Mittal, Nitish Malhotra, **Seema Gupta**, Manisha Jain and Gagan Dhawan *Design and development of optical biosensor for protease sensing*. Poster presentation at National Conference on Understanding the Mechanism and Challenges of Complex Diseases, December 29-30, 2014 organized by Shaheed Rajguru College of Applied Sciences for Women, University of Delhi and got the **First prize with a Trophy**.
- Priya, Zainab, Aayush, Deepika, Dharmendra, Jyoti, Keshav, Yashaswi, **Seema Gupta**, Manisha Jain and Gagan Dhawan *Survey-based study to identify the health hazards associated with occupational exposure of textile dyes used by dyers to colour the fabrics*. Poster presentation at National Conference: Redefining Science Teaching: Future of Education, March 7-9, 2013, Conference Room, South Campus, University of Delhi.

ORAL/ POSTER PRESENTATION IN INTER COLLEGE CONFERENCES

- **Seema Gupta**, Gagan Dhawan, Anmol, Jayati Khanna *Synthesis and Characterisation of ZnS and PbS Nanoparticles by Chemical Precipitation Method using different Capping Agents* Poster presentation at Innovation Conclave-2016, Nurturing Research at the UG level held at Acharya Narendra Dev College (University of Delhi) during October 25-26, 2016 and **won third prize**.
- Nitish Malhotra, Eshant Bhatia, Divyansh Mittal, **Seema Gupta**, Manisha Jain and Gagan Dhawan *Detection of proteases using gold nanoparticle-based optical biosensor*. Poster presentation at Annual Symposium on Frontiers in Biomedical Research-2015 (FBR-2015) Comprehending Genes @ work: From Structural Biology to Drug Discovery, 29-31 October, 2015. Venue: Conference Centre, University of Delhi.
- Eshant Bhatia, Divyansh Mittal, Nitish Malhotra, **Seema Gupta**, Manisha Jain and Gagan Dhawan *Design and development of gold nanoparticle based optical biosensor for protease sensing*. Oral presentation at Annual Science and Technical Festival, TRYST-2015, February 27- March 2, 2015 organized by IIT Delhi.
- Priya, Zainab, Aayush, Deepika, Dharmendra, Jyoti, Keshav, Yashaswi, **Seema Gupta**, Manisha Jain and Gagan Dhawan *Survey-based study to identify the health hazards associated with occupational exposure of textile dyes used by dyers to colour the fabrics*. Poster presentation at University of Delhi, Academic and Cultural

Festival “Antardhwani” (February, 2013). Shortlisted by the University of Delhi to present the same work again at “Antardhwani” (February, 2014).

➤ **PROJECTS COMPLETED:**

1. Formulation of biodegradable and low-cost Liquid detergent for laboratory glassware (2012-13)

FUNDED BY: DST (INNOVATION AND ENTREPRENEURSHIP DEVELOPMENT CENTRE at Acharya Narendra Dev College)

The market is littered over with several national and global brands and a large number of local brands for cleaning domestic utensils, but in our country, very limited brands and that too with expensive price tags are available for cleaning Laboratory Glassware. Keeping the demand flow from the usage in the science laboratories in all the academic institutions and R&D laboratories, effective and biodegradable detergents at low-cost for cleaning of laboratory glassware has been prepared.

2. Survey-based study to identify the health hazards associated with occupational exposure of textile dyes used by dyers to color the fabrics (2012-13)

FUNDED BY: UNIVERSITY OF DELHI (Innovation Projects); ANDC-104

The project supported by University of Delhi under DU ‘Innovation project for colleges’ scheme involving joint team of three teachers and ten undergraduate students was carried out to enhance the learning experiences of the students. Our team interviewed more than 160 dyers and it was observed that the dyes and chemicals used in textile finishing are very harmful to the health of the dyer.

3. Environment Management by Chemical Waste Treatment at the Source(2013-14)

FUNDED BY: DST (INNOVATION AND ENTREPRENEURSHIP DEVELOPMENT CENTRE at Acharya Narendra Dev College)

The project aimed at recovering and recycling the hazardous chemical waste as per the requirements of the source lab. This technique provides a cheap, ready to use economical alternative to all small labs (which include not only hundreds of college labs but thousands of school labs in one city only) and environmentally unnoticed small industrial sheds scattered everywhere.

4. Design and Development of Gold Nanoparticle based Optical Biosensor for Protease Sensing (2014-15)

FUNDED BY: DST (INNOVATION AND ENTREPRENEURSHIP DEVELOPMENT CENTRE at Acharya Narendra Dev College)

Trypsin is the pancreatic enzyme responsible for the degradation and digestion of dietary protein in intestine of humans. We aim to design a real time, highly sensitive

and efficient technique in the form of a biosensor to detect and measure levels of trypsin in different samples. This method is not only restricted to proteolytic proteins but can also be used for detecting different biomarkers. This system can also be made as a kit to diagnose certain conditions such as pancreatic tumor where trypsin is produced in large amounts and released in blood.

5. Design, synthesis and biological evaluation of oxindole-based isoxazolines towards the analog synthesis of marine natural product Flustraminol-B(2014-15)

FUNDED BY: UNIVERSITY OF DELHI (Innovation Projects); ANDC-306

The proposed research work will synthesize some novel isoxazoline derivatives, and report their chemical and biological activities. The probable efficacy and significant biological activity of the synthesized compounds could lead the chemotherapeutic world in the fight against diseases.

6. Extraction of microbial enzymes from kitchen waste and Preparation of Biological Detergent(2015-16)

FUNDED BY: DST (INNOVATION AND ENTREPRENEURSHIP DEVELOPMENT CENTRE at Acharya Narendra Dev College)

Microbial enzymes can be produced at low cost and exhibit improved stability. Addition to detergents is an important application of these enzymes. The microbial enzyme components cause an increase in detergency and prevent scaling; since enzymes can reduce the environmental load of detergent by-products. The aim of the project is to prepare an environment friendly and cost effective biological detergent. Washing and degreasing by using microbial enzymes allows for smaller amounts of surfactants and operation at low temperatures as compared to chemical detergents available in the market.

7. Effective Delivery of Therapeutic Drugs: Design, Synthesis and Evaluation of Biodegradable Carriers (Feb. 2020-April 2021) as Guest Researcher

FUNDED BY: Sabbatical leave sanctioned by Acharya Narendra Dev College, University of Delhi.

Research Collaboration: Dr. Pradeep Kumar, Senior Scientist, CSIR-Institute of Genomics and Integrative Biology, Mall Road, Delhi-110007, India

Metallic nanoparticles advocated for a variety of biomedical applications such as coating on medical devices, tissue restoration and regeneration, optical sensors, cosmetics, enhanced therapeutic strategies and other health related concerns. Biogenic approach would be used for synthesis of metallic nanoparticles, physicochemical characterization, evaluation for cytocompatibility, antimicrobial effects and catalytic reduction and biodegradable carriers.

Education in Lively Innovative Training Environment (ELITE) Projects

Funding Agency: Acharya Narendra Dev College, University of Delhi.

1. Synthesis of various nanoparticles by using extracts from medicinal plants, their characterization and assessment of antimicrobial properties

2. Green Synthesis, Characterization and Biological evaluation of metallic nanoparticles (May-July, 2018)
3. Nanoparticle synthesis and their physicochemical characterization (May-July, 2018)
4. Green Synthesis and Characterization of ZnS nanoparticles(May-July, 2017)
5. Synthesis and Characterization of ZnS Nanoparticles by microwave irradiation and hydrothermal method without any capping agent
6. Synthesis of CdTe Quantum Dots and its Application in Metal Detection(May-July, 2017)
7. Green and low cost synthesis and characterisation of ZnS nanoparticles(May-July, 2017)
8. Synthetic Fabrication and optimisation of Gold nanoparticle for the development of fluorescence based sensors(May-July, 2017)
8. Study the effect of zein nanoparticles on Candida albicans(May-July, 2017)
9. Synthesis of zinc and lead sulfide nanoparticles using EDTA and PVA as capping agents and their characterization(May-July, 2016)
10. Synthesis and characterization of zinc sulfide, lead sulfide and copper sulfide nanoparticles by chemical precipitation method(May-July, 2016)
11. Synthesis and characterization of gold nanoparticles (May-July, 2016)
12. Synthesis and characterization of copper sulphide nanoparticles (May-July, 2016)
13. Plastics: a Boon or a Bane (May-July, 2015)
14. Assessing adulterants in various food products (May-July, 2015)
15. Design and development of optical biosensor for trypsin. (May-July, 2014)
16. Survey based project on decision making ability of class XII students to choose course for higher studies (May-July, 2013)
17. Literature survey project on "Interaction of self-assembled nanoparticles with drug and drug like molecules (May-July, 2012)

➤ **CONFERENCES/WORKSHOPS: Convenor/ Member, Organizing Committee**

- A Webinar on "Quillbot" Awareness Program—One-Stop Place for Making Writing Painless on September 29, 2022.
- Organized program to celebrate World Environment Day-2022 on the Theme ‘Only One Earth’ with CMC VATAVARAN and High Commission of Canada in India on June 03, 2022.
- Chaired a session in the 3rd International Symposium on Ciliate Biology (ISCB-2022) organized by Acharya Narendra Dev College and Maitreyi College, University of Delhi under the aegis of DBT STAR College Scheme and IQAC.
- An online webinar on “e- resources of Delhi University and inflibnet NList” on Saturday, July 31,2021
- Conducted ACT CONCEPT TEST IN CHEMISTRY supported by Association of Chemistry Teachers c/o Homi Bhabha Centre for Science Education(TIFR)(2015-18)
- National Webinar: Flying Jewels (Butterflies of India)- Introduction to Butterflies, Butterfly Gardening and Butterfly Ecology, September 18, 2020
- National Webinar on ‘Sustainable Development’, February 15, 2021
- National Webinar on ‘Our Environment and COVID-19’, June 5, 2020
- A seminar on ‘Challenges in Safe Disposal of Chemical Waste in Academia & Research Laboratories’ on February 23, 2019 at Seminar Hall, Department of Chemistry, University of Delhi, Delhi-110007

- Conclave on ‘Education Deconstructed: Dialogues with Experts’, November 2, 2018 at Seminar Hall of the Acharya Narendra Dev College, University of Delhi.
- ‘Butterfly Campus Count’ Activity on September 17, 2018
- Legal Awareness Program on at Seminar Hall of the Acharya Narendra Dev College, University of Delhi
- Mentoring workshop for faculty members on 25th October, 2018 at Seminar Hall of the Acharya Narendra Dev College, University of Delhi
- ‘E-Waste Management’ on August 10, 2018 at Seminar Hall of the Acharya Narendra Dev College, University of Delhi
- Symposium on ‘CONTEMPORARY ENVIRONMENTAL CONCERNS’ (CEC 2018) held from 15 - 17 March 2018 at Seminar Hall of the Acharya Narendra Dev College, University of Delhi
- Symposium on ‘SAFETY MEASURES AND LABORATORY ETHICS’ organized by Acharya Narendra Dev College, under DBT Star College scheme on February 21-22, 2018.
- Workshop on ‘Systematic Use of Digital Information in Academic Activities’ on November 10, 2017 at the Web Centre, Acharya Narendra Dev College, University of Delhi
- International Conference on “OPEN PARADIGMS IN EDUCATION” organized by Acharya Narendra Dev College, University of Delhi, held at India International Centre, New Delhi from January 31 to February 2, 2012
- National Conference ‘REDEFINING SCIENCE TEACHING: FUTURE OF EDUCATION’ held at South Campus, University of Delhi; March 7-9, 2013
- National Symposium on Chemistry in Biology: THE FUTURE OF LIFE SCIENCES organized by Acharya Narendra Dev College, University of Delhi, held at India International Centre, New Delhi from February 12-13, 2010
- National Symposium on “BIOTECHNOLOGY: EXPANDING HORIZONS” organized by Acharya Narendra Dev College, University of Delhi, held at INSA Auditorium, New Delhi from October 17-18, 2003.

➤ **Participation Conferences/Symposium/Workshops**

- National Conference on ONE EARTH • ONE FAMILY • ONE FUTURE organized by Acharya Narendra Dev College, University of Delhi and Department College Interface, Department of Commerce, Delhi School of Economics, University of Delhi in collaboration with Indian Commerce Association (ICA), Delhi NCR Chapter on April 03, 2023.
- Workshop on ‘Safer and Greener Chemistry Lab’ organized by Acharya Narendra Dev College, University of Delhi and Guru Angad Dev Teaching Learning Centre, S.G.T.B. Khalsa College, University of Delhi on January 13, 2023.
- A Workshop on Read & Publish and Author’s Publishing Journey on July 8, 2021 organized by Cambridge University Press and University of Delhi.
- Online webinar on “Staying Healthy Through Future COVID waves: Essential DOs and DON’T’S” on July 3, 2021 conducted by New Delhi Institute of Management.
- 2-day NIUS teacher workshop titled ‘A Closer Look at Re-designing Experiments for Undergraduate Chemistry Laboratory’ conducted online by Homi Bhabha Centre for Science Education (HBCSE, TIFR) from June 17-18, 2021.
- “Global Women’s Breakfast” Empowering Diversity in Science, February 9, 2021 by Dept. of Chemistry, Government General Degree College, Singur, Association of

Chemistry Teachers (ACT), Rani Rashmoni Green University in collaboration with IUPAC.

- National Initiative on Undergraduate Science - Teacher Development Workshop “ Designing meaningful problems for assessment in Chemistry” January 1-7, 2021 by Homi Bhabha Centre for Science Education (HBCSE, TIFR).
- FDP on “Development of Teacher's e-kit and MOOCs in Four Quadrant Format” of e-Content, September 12-20, 2020 by Guru Angad Dev Teaching Learning Centre, S.G.T.B. Khalsa College, University of Delhi.
- Delegate in Multi-session Web workshop on ‘Designing Quality Multiple Choice Questions’ August 1-10, 2020 by Homi Bhabha Centre for Science Education (HBCSE, TIFR).
- FDP on “Developing Multimedia enriched Powerful Presentations” August 11-16, 2020 by Guru Angad Dev Teaching Learning Centre, S.G.T.B. Khalsa College, University of Delhi
- “National Webinar on Web Content Licencing – An Overview” by The Bhopal School of Social Sciences on June 26, 2020
- Webinar on ‘Safe Water, Sanitation and Health for all during and post Covid 19’ , 07th July 2020 by Centre for Science and Environment and WaterAid South Asia in partnership with WHO and Emory University
- 1st International Conference on “Emerging Trends of Nanotechnology in Drug Discovery” organized by Sri Venkateswara College, University of Delhi, Department of Biochemistry,(UDSC) UDSC in association with University of Maderia,Portugal. held on May 26-27,2014
- Re-launch of ‘Creative Commons India’ held on November, 12, 2013 at India Islamic Centre, Lodhi Road, New Delhi
- Workshop on ‘Open Science for Higher Education and Research’ by Acharya Narendra Dev College ,University of Delhi held on October 3, 2013 at UDSC, New Delhi
- Workshop on Foundation Course “Science and Life” at CPDHE, University of Delhi, on June21-22,2013
- The Academic Congress “Enabling the Young: Redefining Education” organized by University of Delhi on September 6-7,2012
- International Conference on “Open Paradigms in Education” organized by Acharya Narendra Dev College ,University of Delhi, held at India International Centre, New Delhi from January 31 to February 2, 2012
- Participated in workshop on Research in UG Science and Mathematics Education, organized by Acharya Narendra Dev College in collaboration with Vidya Bhawan Society from May 14-18, 2012
- National Seminar “Teaching Redefined: Open Access to Education” organized by Acharya Narendra Dev College ,University of Delhi, on November 1,2011
- International Conference on Education in Chemistry at Homi Bhabha Centre for School Education(TIFR),Mumbai, during November 12-14,2010
- Workshop on Improvement of Chemistry Lab Safety Manual held at ILLL, University of Delhi on August 3,2010
- Indo-European Conference on Quality Assurance in Higher Education held at the Conference Centre on May 6-7,2010
- Workshop on “Application of Free/Open Source Software in Science Teaching and Research” held on April 14-15,2010
- National Symposium on “Challenging Areas in Forensic Science” held at Sri Guru Teg Bahadur Khalsa College, University of Delhi on February 5,2010

- National Symposium on Chemistry in Biology :THE FUTURE OF LIFE SCIENCES organized by Acharya Narendra Dev College ,University of Delhi, held at India International Centre, New Delhi from February 12-13, 2010
 - Seminar on Semester System in B.Sc. (H) Chemistry organized by Department of Chemistry, University of Delhi on November 7,2009
 - Base Camp for Application of EasyNow-Techniques for e-Content Development entitled Easy Now-A course material preparation module organized by Acharya Narendra Dev College ,University of Delhi & Commonwealth Educational Media Centre for Asia on September 12-October 9,2009
 - Workshop on “Wikied2009- Open Educational Resources organized by Acharya Narendra Dev College ,University of Delhi in association with Commonwealth of Learning, Vancouver, Canada held on January 9-13.2009
 - Workshop on LINUX and FREE-OPEN SOURCE SOFTWARES organized by Acharya Narendra Dev College, University of Delhi in association with OpenLx Linux on December 6-7,2007
 - Seminar on “Third Year Chemistry Course” of the restructured B.Sc. Programme organized by Department of Chemistry, University of Delhi on October 27,2007
 - International Symposium on Green/Sustainable Chemistry Department of Chemistry, University of Delhi on January 10-13,2006
 - Symposium on “Emerging Areas in Chemistry” organized by Hindu College, University of Delhi on, December 1-3,2005
 - National Seminar on “Recent trends in Chemistry” held at Maitreyi ollege, University of Delhi on September 22-24,2004
 - National Symposium on “Biotechnology: Expanding Horizons” organized by Acharya Narendra Dev College ,University of Delhi, held at INSA Auditorium, New Delhi from October17-18,2003‘
 - Workshop on “High Resolution NMR Spectroscopy of Polymers” held at Indian Institute of Technology , Delhi on December 1-2,2001
 - Professional Development Programme, Refresher Course in Chemistry-Code (CH-91) organized by Centre for Professional Development in Higher Education”, University of Delhi from December 20 to January 10,1992
 - Professional Development Programme(Refresher Course in Chemistry-Code CH-78) entitled “Current Developments of Chemistry” organized by Centre for Professional Development in Higher Education”, University of Delhi from October 3 to October23,1996
 - Professional Development Programme entitled ”Refresher Course in Chemistry-Code CH-17” organized by Centre for Professional Development in Higher Education”, University of Delhi from December 20 to January 10,1992
 - Workshop on “ Experiments for Higher Education” held at Hans Raj College, University of Delhi on April 6-10,1992
 - International Symposium on “Current Trends in Chemical Research” held at University of Delhi on January 7-8.1991
- **Contribution towards Curriculum Development at University of Delhi:**
- Member, “Third Year Chemistry Course” of the restructured B.Sc. Programme of Chemistry, University of Delhi in 2007
 - Member, B.Sc.(H) Chemistry; Inorganic Chemistry; UG Implementation of Semester System, University of Delhi in 2009

➤ **Contribution towards Secondary Education:**

Expert/Resource Person Participation in workshops

- Workshop on "Identification of core concepts in science for middle and secondary stages of school education in the light of NEP 2020" at DESM, NCERT, New Delhi.
- Examination Board for Indian National Chemistry Olympiad National Chemistry(INCHO)- 2022 and 2023 organized by HBCSE as a part of Chemistry Olympiad Program in India.
- 'A study of Syllabi of Chemistry at Higher Secondary Stage' March 18-20, 2019, at Department of Education in Science and Mathematics, NCERT, New-Delhi
- "Review of Modules(Chemistry) developed by Subject Matter Expert for MOOCs for School Education" 09/05/2017 at Department of Education in Science and Mathematics, NCERT, New-Delhi
- "Field Trial and Finalization of Training Package in Chemistry at Higher Secondary Stage" March 16-20, 2015 at Department of Education in Science and Mathematics, NCERT, New-Delhi
- "Field Trial and Finalization of Training Package in Chemistry at Higher Secondary Stage" February 16-20, 2015 at Department of Education in Science and Mathematics, NCERT, New-Delhi
- Programme entitled "Review and Development of Microscale Chemistry Kit at Higher Secondary Stage" at Division of Educational Kits, NCERT, New-Delhi,
- Programme entitled "Development of Exemplar Problems in Chemistry for Class XII" at NCERT, New Delhi
- Steward for the Guinness World Record in the category 'Largest Practical Science Lesson' by Vijana Bharti on 7th December 2015 at IIT Campus, New Delhi
- Academic Inputs for the AIPMT examination, September 28, 2015
- Conducted session 3 Days PGT Summer Workshop for the Teachers of Bal Bharati Public School, all across the Country organized by that BBPS Training Centre, empanelled by the Central Board of Secondary Education, a Unit of Child Education Society, In-service Training Program; 18-20 May, 2015
- Validations of VCDs in UDAAN programme to train the girls for the Engineering Entrance Examination by CBSE, April 2015

➤ **Life Membership:**

- Indian Society of Analytical Scientists(Regd.),-DELHI CHAPTER(Sr. No.013)
- Association of Chemistry Teachers(LM No.466)

➤ **Contribution towards Environmental Sustainability:**

Organize various activities with College students on segregation of non-biodegradable waste, paper recycling, plantation drives, prevent disposable plastic, air pollution, noise pollution etc.

Due to the activities on environment sensitization organized was awarded with **WORLD ECOLOGY, ENVIRONMENT AND DEVELOPMENT (WEED) AWARD at 26th WORLD ENVIRONMENT CONGRESS** for outstanding contribution towards environment conservation by International Association of Educators for World Peace, Plastic free College of the Year Award on the National Environment Convention-2018

➤ **INVITED TALKS:**

Talk delivered on “Role of stakeholders on Vigilance, Corruption and Transparency in Governance in India” at a National held on November 1, 2021 on the occasion of Vigilance Awareness Week 2021 organized by Vivekananda College, Daulat Ram College and Acharya Narendra Dev College, University of Delhi.

➤ **CONTRIBUTION TOWARDS ENTREPRENEURSHIP:**

Director, ANDC inStart Foundation, (A Section 8 Company) funded under Government of NCT Delhi’s incubation policy to promote Incubation of Startups hosted by Acharya Narendra Dev College (University of Delhi).

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