

DR NIDHI RANI GUPTA

Designation: Assistant Professor

Specialization: Inorganic Chemistry

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Education

MSc, Chemistry, (2001 Gurukul Kangri University, Haridwar, Uttarakhand)

PhD, (September 2009, Thapar Institute of Engineering and Technology, Patiala, Punjab)

Title of PhD thesis “ Potentiometric Investigations on Cation Electrodes Based On Macrocyclic and Acyclic Amide as Ionophores”

Post Doctoral Research from Indian Institute of Technology- Kanpur (IIT-K)
and Woman Scientist-B (Department of Science & Technology-New- Delhi)

Professional Experience (post PhD):

- Department of Chemistry, M.M. Modi College, Patiala, India (11 August, 2018 to till date)
- Department of Chemistry, Khalsa College, Patiala, Punjab, India (02 Jul, 2012 to 10 Aug, 2018)
- Department of Chemistry, Mata Gujri College, Fatehgarh Sahib, Punjab, India (01 Aug, 2011 to 5 May, 2012)
- Department of Chemistry, Dr B R Ambedkar National Institute of Technology, Jalandhar (NIT-J), Punjab, India (25 Jan, 2011 to 03 Jun, 2011)
- Department of Chemistry, RIMT-Maharaja Aggarsen Engineering College, Mandigobindgarh, Punjab, India (30 Jan, 2008 to 27 Jan, 2011)

Teaching Interests: Inorganic Chemistry

Research Interest: Analytical Chemistry, Environmental Chemistry
Potentiometric Sensors
Monitoring of Environmental Pollutants
Metal and pesticide toxicology, Breast Cancer studies
Water soluble carbon Nano-tubes and its applications

Research Publications:

1. Susheel K Mittal, Ashok Kumar, **Nidhi Gupta**, Sukhdeep Kaur, Subodh Kumar, 8 Hydroxyquinoline Based Neutral Tripodal Ionophore as a Copper(II) Selective Electrodes and the Effect of Remote Substituents on Electrodes Properties, *Analytica Chimica Acta*, 585 (2007) 161-170. [DOI: 10.1016/j.aca.2006.12.011](https://doi.org/10.1016/j.aca.2006.12.011)
2. **Nidhi Rani Gupta**, Susheel Mittal, Subodh Kumar, S.K. Ashok Kumar, Potentiometric Studies of N,N'-Bis(2-dimethylaminoethyl)-N,N'-dimethyl-9,10 anthracenedimethanamine as a Chemical Sensing Material for Zn(II) Ions, *Material Science and Engineering C*, 28 (2008) 1025. [DOI: 10.1016/j.msec.2007.03.003](https://doi.org/10.1016/j.msec.2007.03.003)
3. **Nidhi Rani Gupta**, Susheel K. Mittal, Sumit Kumar Sonkar, Trace Level determination of Nickel Ions in Chocolate Samples using noval N₄ Macrocyclic Based potentiometric sensors, *Journal of Advanced Science, Engineering and Medicine*, 5 (2013) 656-661, [DOI: https://doi.org/10.1166/ asem.2013.1293](https://doi.org/10.1166/ asem.2013.1293)
4. **Nidhi Rani Gupta**, Susheel K.Mittal, Subodh Kumar, S.K.Ashok Kumar, A Liquid membrane based electrode containing an electroactive chelating substance selective for cobalt (II) ions, *Analytical chemistry- An Indian Journal*, 7 (2008) Issue 4. [weblink](#)
5. **Nidhi Rani Gupta**, Susheel Mittal, S.K.Ashok Kumar, Mirac Ocak, Ummuhan Ocak, Silver (I)- Selective membrane electrodes Based On Macrocycles Possessing Imine And Thioether Combinations, *Analytical chemistry- An Indian Journal*, 7 (2008) Issue 4. [weblink](#)
6. Susheel Mittal, S.K. Ashok Kumar, **Nidhi Rani Gupta**, Mirac Ocak, Ummuhan Ocak, Silver Selective Electrode Based on Liquid Membrane Containing N₂S₂O₂ Macrocyclic as Ionophore, *Indian Journal of Chemistry* (2008) 47A, 1676. [weblink](#)
7. **Nidhi Rani Gupta**, Kuldeep Singh and Madhu Anand, CANCER: The Flip Side of the Green Revolution, *Journal of Basic and Applied Engineering Research*, (2016) Volume 3, Issue 1, pp. 24-28. [weblink](#)
8. Kumud Malika Tripathi, Anshu Bhati, Anupriya Singh, **Nidhi Rani Gupta**, Sankalp Verma, Sabyasachi Sarkar and Sumit Kumar Sonkar, From the traditional way of pyrolysis to tunable photoluminescent water soluble carbon nano-onions for cell imaging and selective sensing of glucose, *RSC Advances* (2016) 6, 37319-37329 [DOI link: https://doi.org/10.1039/c6ra04030f](https://doi.org/10.1039/c6ra04030f)
9. **Nidhi Gupta**, S. K. Ashok Kumar, Susheel K. Mittal, Prabhpreet Bachittar Singh, S. K. Ashok Kumar, Silver Selective Electrodes using ionophores with Thioether–Amide–Amine, *Journal of Analytical Chemistry* (2017) 72, 2191-202. [DOI link https://doi.org/10.1134/S1061934817020083](https://doi.org/10.1134/S1061934817020083)

10. Prediction of Malignant Breast Cancer Cases using Ensemble Machine Learning: A Case Study of Pesticides Prone Area, *IEEE/ACM Trans Comput Biol Bioinform.* **2020 Oct 22**; doi: 10.1109/TCBB.2020.3033214.
11. Carbon Nano Onions–Polystyrene Composite for Sensing S-Containing Amino Acids, *J. Compos. Sci.* 4(3), **2020**, 90; <https://doi.org/10.3390/jcs4030090>

Book/ Book Chapter

1. **Nidhi Gupta**, *Liquid membrane based potentiometric sensors*, LAP Lambert academic publishing (2018) ISBN: 978-613-9-88859-7. [weblink](#)
2. Kumud Malika Tripathi, **Nidhi Rani Gupta** and Sumit Kumar Sonkar (2016) *Nano-Carbons from Pollutant Soot: A Cleaner Approach toward Clean Environment*, Willey Scrivener Publishing LLC, ISBN: 9781119041214, [DOI: 10.1002/9781119041214.ch5](https://doi.org/10.1002/9781119041214.ch5)

Conference / Seminars

A. Resource Person / Invited Lectures:

1. Delivered an invited talk on “Cell Imaging by Nano Sized Photoluminescent Carbon Onions from Pyrolysis of Vegetable Ghee” in *INDO - UK workshop on Advanced Nanomaterials For Energy, Health And Sustainability* at Indian Institute of Technology Mandi (3-6 october, 2016).
2. Invited lecture on “My Story- From an Ordinary Woman to a Woman Scientist” on *International Women’s Conclave 2019, Balance for Better*, Organised by Department of Science and Technology, New Delhi & Jawaharlal Nehru University, New Delhi, at Jawaharlal Nehru University (8 March 2019).

B. Paper presented:

1. Organochlorines as Xenoestrogens, *2nd national seminar on Responsible Research and Innovations In Sciences & Technology (RRIST-2020)*, Guru Nanak College, Budhlada, Punjab.
2. Silver Selective electrode Based on Xylene Containing a Cyclic Amide Linkage, *National Conference on Sensors (NCS – 2005)*, Thapar University, Patiala.
3. A green analytical Technique for Sensing Low Concentration of Lanthanide ions, *National Conference on Sensors (NCS – 2005)* November, 2005, Thapar University, Patiala.
4. Colour Removal of Dye Waste (Crystal Violet) by Adsorption on Clay, *National Conference on Materials and Related Technologies*, September, 2003, Thapar University, Patiala.

5. Removal of Black Sulphate from the Textile Waste Waters- A Profile, *National Conference on Materials and Related Technologies*, September, 2003, Thapar University, Patiala.
6. Effect of Gelatin Content on Particle Size of PMMA-DVB Resin during the Suspension Polymerisation, *National Conference on Materials and Related Technologies*, September, 2003, Thapar University, Patiala.
7. Copper(II)-selective electrode based on uracil containing acyclic amide linkages, *Conference on Molecules to Materials (ICMM-06)*, pp. 405, March 3-4, 2006, SLIET, Longowal.

Webinar

1. Four days international webinar on Bio Conclave- An Intellectual War against COVID 19- pandemic, organised by department of pharmaceutical Biotechnology, Hindu College of Pharmacy, Amravati Road Guntur-522002, AP, 19-22 June, 2020)
2. National level quiz on Chemistry, conducted by Rajiv Gandhi Institute of Management and Science, Kakinada and secured 93%, 14 June 2020.
3. Participated and cleared National level quiz on “Environment Awareness- Time for Nature” organised by department of chemistry, Govt. Digvijay Autonomous PG college, Rajnandgaon, Chattisgarh-491441, June 7 2020

C. Posters Presented

1. Metalloestrogens and Malignancy, 12th national conference on “*Chemical and Environmental Sciences: Advanced Innovations – 2020*”, Punjabi University, Patiala, 19-20 Feb 2020.
2. Level of Heavy Metals in Females with Breast cancer, *Recent Advances in Chemical and Environmental Sciences (RACES-2019)*, organised by Multani Mal Modi College, Patiala, 11-12 Apr 2019.
3. Role of Pesticides & Heavy Metals in Pre-Term Births of Infants, *Recent Advances in Chemical and Environmental Sciences (RACES-2019)*, organised by Multani Mal Modi College, Patiala, 11-12 Apr 2019.
4. Exposure of Organochlorine Pesticides & Breast Cancer, *10th national conference on Chemical and Environmental Sciences: Innovations and Advances-2018*, at Punjabi University, Patiala, 15-16 Feb 2018.
5. High Levels of HCH and its Derivatives in Blood of Women in Punjab, India, *International Conference of the Public Health Foundation of India and Pacific Basin Consortium*, held on 14 – 16 November, 2017 at New-Delhi, India

6. Level of DDT in breast milk, *8th National Seminar on New Paradigm in Chemical and Analytical Perspectives-2016*, Punjabi University, Patiala, 4-5 Feb 2016.
7. Luminescent nanoparticles: Quantum size carbon dots from sugarcane straw, *International conference(ICSM, 2014)* held on 06-10 october, 2014, at NIT- Jaipur, India.
8. Waste Derived Fluorescent Carbon Dots for Bio-Imaging, *1st National Conference NFCS-01*, Khalsa College, Patiala, 15 Nov 2014. (*Got first prize*)
9. Synthesis and Characterisation of Carbon Nano Tubes from Candle Soot, *Fourth National Conference on Recent Advances in Chemical and Environmental Sciences-2012, (RACES- 2012)*, Multani Mal Modi College, Patiala 3, Mar 2012.
10. Determination of some metal ions in real life samples by N- donor based ion selective electrodes, *Third National Conference on Recent Advances in Chemical and Environmental Sciences-2011, (RACES- 2011)*, Multani Mal Modi College, Patiala, 28 Feb-1 Mar, 2011.
11. Coated Wire Ion-Selective electrode for Silver (I) and its Application to Laboratory Teaching, *9th National Symposium in Chemistry (NSC-9) CRSI sponsored*, Indian Institute of Technology, Bombay-Mumbai, 1-4, Feb, 2007.
12. Silver(I) selective membrane Electrodes Based on Heteroatom Containing Macrocyclic Amide, *8th National Symposium of Chemical Research Society of India(CRSI)*, Indian Institute of Technology, Bombay-Mumbai, 3-5, Feb, 2006.

Workshops and Training Courses

1. Three Day's workshop on "Statistical Methods in Bio-Medical Research" at National Institute of Occupational Health (ICMR), Meghaninagar, Ahmedabad, Gujarat (4-6, Jan, 2017)
2. Four day's INDO - UK workshop on Advanced Nanomaterials for Energy, Health and Sustainability at Indian Institute of Technology Mandi (3-6 october, 2016).
3. One month vocational training from Central Building Research Institute (CBRI)-Roorkee. (June 12 to July 20, 2000).

Faculty Development Programme

1. Faculty Development Programme on Teaching Pedagogy, Teaching Ethics & Value Education, organised by Khalsa College, Patiala, 18-24 Dec, 2017.
2. Faculty Development Programme on Emerging Issues & Challenges in Higher Education, organised by International Quality Assurance Cell (IQAC) Multani Mal Modi College, Patiala, 17-22 July, 2019.

Achievements, Awards and Recognitions

1. **Research Projects Completed** “Impact of organochlorine and heavy metals exposure on malignant/ benign breast diseases in Punjab” funded by “**Department of science and technology**” (DST), New-Delhi, INDIA, from Nov-2015 to Aug-2018, **Total Cost 29,20,179/-**
2. **Research Projects Completed** “Carbon Nanotube Polymer Composites for Sensing Amino Acids and Pesticides” **funded by IASc (Bangalore), INSA(NewDelhi) and NASI (Allahbad), INDIA** at Indian Institute of Technology – Kanpur (IIT-K)
3. **Extra Co-curricular “NCC – B Certificate”** in year 1996 under the authority of Ministry of Defence, Government of INDIA.

Life-Membership

1. Indian Society for Electro Analytical Chemistry (ISEAC), BARC- Mumbai, INDIA