

**DR NIDHI RANI GUPTA**

Lieutenant  
Associate NCC Officer

Assistant Professor  
Department of Chemistry  
Multani Mal Modi College  
Patiala- 147001, PUNJAB  
INDIA



**Educational Qualifications** : **MSc.**, Gurukul Kangri University, Harwar, Uttarakhand  
**Ph. D.**, Thapar Institute of Engineering and Technology,  
Patiala, Punjab (formerly Thapar University)  
**Post Doctoral Research**, Indian Institute of Technology-  
Kanpur and Woman Scientist-B (Department of Science &  
Technology-New- Delhi)

**NCC Achievements** : Awarded as best ANO of the course and won Sharma trophy for best in academics, gold medal for first order of merit in 3 months NCC training at Officers Training Academy, Gwalior May to Aug 2023.

**Title of Ph.D.** : “ Potentiometric Investigations on Cation Electrodes Based On Macrocyclic and Acyclic Amide as Ionophores”

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**Experience** : Total Teaching: more than 15 years

**Area of Interest** : Analytical Chemistry, Environmental Chemistry  
Potentiometric Sensors  
Monitoring of Environmental Pollutants  
Metal and pesticide toxicology  
Water soluble carbon nano-tubes and its applications

**PhD Guided:** One PhD guided to Ms Akriti Sharma, dated 4<sup>th</sup> March 2023

**Awards/Achievements:**

- Summer research Fellowship awarded jointly by IASc (Bangalore), INSA(NewDelhi) and NASI (Allahabad) in year 2011 at IIT Kanpur.
- Woman Scientist –B, Awarded by “Department of science and technology” (DST), New-Delhi, INDIA year 2015.

**Research Publications**

1. Sharma, A., Rani Gupta, N., Hooda, N., & Sharma, R. (2023). Metal exposure and breast malignancy: A case-control study of Malwa Region of Punjab. *Environmental Health Engineering And Management Journal*, 10(1), 87-96.
2. Sharma, A., Hooda, N., Gupta, N. R., & Sharma, R. (2023). Efficient RIEV: a novel framework for the prediction of breast cancer cases using ensemble machine learning. *Network Modeling Analysis in Health Informatics and Bioinformatics*, 12(1), 29.
3. Prediction of Malignant Breast Cancer Cases using Ensemble Machine Learning: A Case Study of Pesticides Prone Area, N. Hooda, R. Gupta and N. R. Gupta, *IEEE/ACM Trans Comput Biol Bioinform.* **2020 Oct 22**; PP. doi: 10.1109/TCBB.2020.3033214. Epub ahead of print. PMID: 33090952.
4. Carbon Nano Onions–Polystyrene Composite for Sensing S-Containing Amino Acids DG Babar, NR Gupta, G Nandi, S Sarkar, J. *Compos. Sci.* 2020, 4(3), 90; <https://doi.org/10.3390/jcs4030090> ISSN 2504-477X
5. Silver Selective Electrodes using ionophores with Thioether–Amide–Amine, *Journal of Analytical Chemistry*, 72, No.2, **2017**, 191-202.
6. From the traditional way of pyrolysis to tunable photoluminescent water soluble carbon nano-onions for cell imaging and selective sensing of glucose, *RSC Adv.*, **2016**, 6, 37319-37329.
7. CANCER: The Flip Side of the Green Revolution, *Journal of Basic and Applied Engineering Research*, Volume 3, Issue 1; January-March, **2016**, pp. 24-28.
8. Silver Selective Electrode Based on Liquid Membrane Containing N<sub>2</sub>S<sub>2</sub>O<sub>2</sub> Macrocycle as Ionophore, *Indian Journal of Chemistry*, 47A (**2008**) 1676.
9. Silver (I)- Selective membrane electrodes Based On Macrocycles Possessing Imine And Thioether Combinations, *Analytical chemistry- An Indian Journal*, 7 (**2008**) Issue 4.
10. A Liquid membrane based electrode containing an electroactive chelating substance selective for cobalt (II) ions, *Analytical chemistry- An Indian Journal*, 7 (**2008**) Issue 4.
11. Trace Level determination of Nickel Ions in Chocolate Samples using novel N<sub>4</sub> Macrocycle Based potentiometric sensor", *Journal of Advanced Science, Engineering and Medicine*, 5 (**2013**) 656-661.

12. 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.
13. 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.

### Book Chapter

1. Breast Cancer Recurrence Prediction in Biopsy Using Machine Learning Framework, Akriti Sharma, Nishtha Hooda, Nidhi Rani Gupta, *Advances in Communication and Computational Technology*, vol 668. Springer, Singapore., pp 347-357, 2021.  
[https://doi.org/10.1007/978-981-15-5341-7\\_28](https://doi.org/10.1007/978-981-15-5341-7_28)
- Ebook: ISBN: 978-981-15-5341-7
2. "Nano-Carbons from Pollutant Soot: A Cleaner Approach toward Clean Environment", Kumud Malika Tripathi, Nidhi Rani Gupta and Sumit Kumar Sonkar, Willey Scrivener Publishing LLC, ISBN: 9781119041214, 5 FEB 2016, DOI: 10.1002/9781119041214.ch5
3. Sharma, A., Hooda, N., Gupta, N. R., & Sharma, R. (2023). Efficient BREV Ensemble Framework: A Case Study of Breast Cancer Prediction. In *Image Based Computing for Food and Health Analytics: Requirements, Challenges, Solutions and Practices: IBCFHA* (pp. 97-113). Cham: Springer International Publishing.
4. Chapter " Carbon Emission And Footprints" published in the peer-reviewed edited book entitled "Environmental Issues: Causes and Resolutions". Redshine Publication, December 2022 (first edition) ISBN- 10:93-95456-79-5, DOI: 18.10.9395456795

### Book Published

1. "Liquid membrane based potentiometric sensors" Nidhi Rani Gupta, LAP Lambert academic publishing, ISBN: 978-613-9-88859-7, 2018.

### Research Projects Completed

Sr. No.	Title of The Project	Funding Agency	Duration	Present Status	Total Cost

1.	“Impact of organochlorine and heavy metals exposure on malignant/ benign breast diseases in Punjab”	“Department of science and technology” (DST), New-Delhi, INDIA	Nov-2015-Aug-2018	Completed	29,20,179/-
2.	“Carbon Nanotube Polymer Composites for Sensing Amino Acids and Pesticides”	IASc (Bangalore), INSA(NewDelhi) and NASI (Allahbad), INDIA	3 Months	Completed	-

### Invited talks/ Lectures

#### (a) International

1. Cell Imaging by Nano Sized Photoluminescent Carbon Onions from Pyrolysis of Vegetable Ghee, Nidhi Rani Gupta, INDO - UK workshop on ADVANCED NANOMATERIALS FOR ENERGY, HEALTH AND SUSTAINABILITY at Indian Institute of Technology Mandi (3-6 october, 2016).

#### (b) National

2. My Story- From an Ordinary Woman to a Woman Scientist, Nidhi Rani Gupta, 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).

### Number of research Papers Presented in Symposium/ Seminar/ Conference

: National : 06

1. Organochlorines as Xenoestrogens, 2nd national seminar on Responsible Research and Innovations In Sciences & Techlogy (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), pp. 90, 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. Sharma, A., Hooda, N., Sharma, R., & Gupta, N. R. (2023, February). A review of environmental pollutants as breast cancer risk factor. In AIP Conference Proceedings (Vol. 2558, No. 1). AIP Publishing.

8. Sharma, A., Hooda, N., Gupta, N. R., & Sharma, R. (2023). Efficient BREV Ensemble Framework: A Case Study of Breast Cancer Prediction. In Image Based Computing for Food and Health Analytics: Requirements, Challenges, Solutions and Practices: IBCFHA (pp. 97-113). Cham: Springer International Publishing.

9. Sharma, A., Hooda, N., Gupta, N. R., & Sharma, R. (2022, June). Impact of COVID-19 Lockdown on the Risk of Breast Cancer: A Case Study. In IOP Conference Series: Earth and Environmental Science (Vol. 1032, No. 1, p. 012004). IOP Publishing.

#### **International:**

1. 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.

#### **7. Number of Posters Presented in Symposium/ Seminar/ Conference**

##### **International**

1. 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

2. Luminescent nanoparticles: Quantum size carbon dots from sugarcane straw, International conference, ICSM, 2014 held on 06-10 october, 2014, at NIT- Jaipur, India.

##### **National**

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, 10<sup>th</sup> national conference on Chemical and Environmental Sciences: Innovations and Advances-2018, at Punjabi University, Patiala, 15-16 Feb 2018.
5. Level of DDT in breast milk, 8<sup>th</sup> National Seminar on New Paradigm in Chemical and Analytical Perspectives-2016, Punjabi University, Patiala, 4-5 Feb 2016.
6. Waste Derived Fluorescent Carbon Dots for Bio-Imaging, 1<sup>st</sup> National Conference NFCS-01, Khalsa College, Patiala, 15 Nov 2014. **(Got first prize)**
7. 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.
8. 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.
9. Coated Wire Ion-Selective electrode for Silver (I) and its Application to Laboratory Teaching, 9<sup>th</sup> National Symposium in Chemistry (NSC-9) CRSI sponsored, Indian Institute of Technology, Bombay-Mumbai, 1-4, Feb, 2007.
10. Silver(I) selective membrane Electrodes Based on Heteroatom Containing Macrocyclic Amide, 8<sup>th</sup> National Symposium of Chemical Research Society of India(CRSI), Indian Institute of Technology, Bombay-Mumbai, 3-5, Feb, 2006.
11. Exposure to environmental pollutants in female patients with breast malignancy (RACES-2023), organised by Multani Mal Modi College, Patiala, 12-13 Apr 2023.

## **Number of Symposium/ Seminar/ workshop/ webinar Attended**

### **International:**

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. Four day's INDO - UK workshop on Advanced Nano materials for Energy, Health and Sustainability at Indian Institute of Technology Mandi (3-6 october, 2016).

### **National**

1. National level quiz on Chemistry, conducted by Rajiv Gandhi Institute of Management and Science, Kakinada and secured 93%, 14 June 2020.
2. 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
3. Three Day's workshop on "Statistical Methods in Bio-Medical Research" at National Institute of Occupational Health (ICMR), Meghaninangar, Ahmedabad, Gujarat, 4-6, Jan, 2017.

### **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.
3. Two weeks faculty Development programme on "Advanced Concepts of Developing MOOCS", organised by Teaching learning centre Ramanujan College, University of Delhi, sponsored by Ministry of Human Resource Development, Pandit Madan Mohan Malviya National Mission of Teachers and Teaching from July 2 to July 17, 2020.
4. 7 days Virtual National Level Capacity Building Programme on integration of Pedagogy & Technology in Teaching Learning from July 13 – 19, 2021 by Multani Mal Modi College, Patiala in collaboration with Council for Teacher Education Foundation.
5. 10 days NEP Orientation and Sensitization Programme, Organised by Human resource development centre, Punjabi University, Patiala from Jan 16 to Jan 25, 2024.


### **Faculty orientation/induction programme**

1. Four weeks faculty orientation/induction programme for faculty in university/ colleges/ institutes for higher education, organised by Teaching learning centre Ramanujan College, University of Delhi, sponsored by Ministry of Human Resource Development, Pandit Madan Mohan Malviya National Mission of Teachers and Teaching from June 4 to July 01, 2020.
2. Four weeks faculty induction programme organised by UGC Human resource development centre, Punjabi Unicersity, Patiala sponsored by University Grant Commission (UGC), from Feb 14 to March 17, 2022.

### **Vocational Training**

1. One month vocational training on “Colour Removal of Dye Waste by Adsorption on Clay” from Central Building Research Institute (CBRI)- Roorkee. (June 12 to July 20, 2000).

I solemnly declare that above particulars are true to the best of my knowledge and believe.



**(Lt. Dr. Nidhi Rani Gupta)**



