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Department of Chemistry
Jamia Millia Islamia Central University
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Education:

Ph. D. (Polymer Chemistry)
Indian Institute of Technology, Delhi (1994)
M. Phil. (Organic Chemistry)
Aligarh M University, Aligarh (1987)
M.Sc. (Organic Chemistry)
Gauhati University, Guwahati, Assam (1982)
B. Sc. (Chemistry Hons.)
Gauhati University, Guwahati, Assam (1978)

Teaching and Professional Experience:

(2013- 2016)

Working as a Professor in Chemistry, Jamia Millia Islamia University, New Delhi, India. Teaching the following courses at UG and PG levels: (i) Organic Chemistry (ii) Polymer Chemistry and Technology (iii) Polymer Technology, Processing and Specialty Polymers and (iv) Elements of Materials Chemistry

Advised and supervised more than twenty five short research projects of M. Sc. Students. Guided four Ph. D. research programs:

Nidhi (2008): Influence of various phenolic resins on the performance of friction materials

Zainul Abid CKV (2012): Antimicrobial polymers for water disinfection and sterilization

Syed Ishraque Ahmad (2012): Development of biodegradable polymeric hydrogels for biomedical applications

Shubhra Goel (2012): Synthetic, characterization and optical studies of nanostructured materials

(2010 -2013)

Worked as Associate Professor in the Department of Chemistry, Jamia Millia Islamia Central University, New Delhi

(2008-2009)
Joined the Department of Chemistry and Chemical Biology, Rutgers University, New Jersey, USA, as an International scholar on an International Research Fellowship awarded by American Association of University Women (AAUW) Educational Foundation, Washington D.C., USA

(1998-2007)
Started teaching career as Lecturer in the Department of Chemistry, Jamia Millia Islamia Central University, New Delhi, India in 1998 and became Senior Lecturer and Reader in 2002 and 2007 respectively

Research experience:

Research areas include: Polymer Synthesis and Characterization, Functionalization of Biopolymers and Biopolymer based Delivery Systems for Food Nutrients, Development of Drug Delivery Systems especially Iodine-releasing Polymers, Polymeric Reagents for use in Organic Synthesis, Polymeric Water Disinfectants, Antimicrobial Polymers and Iodine-Polymer Formulations as Dietary Supplementations

(1994 - 1996)
Worked in a CSIR sponsored project entitled “Development of Antibacterial Catheter Materials” at the Center for Biomedical Engineering, Indian Institute of Technology, New Delhi as a Research Associate.The research involved iodination of catheter materials to prevent urinary tract infections, characterization and *in vitro* antimicrobial studies of the developed products.

(1993 - 1994)
Worked in the following consultancy projects at the Center for Biomedical Engineering, Indian Institute of Technology, Delhi:

1. Studies on Antimicrobial Activity of an Iodized Polystyrene-Polyethylene Membrane for Disinfection of Drinking Water
2. Studies on Toxicological Evaluation of the Iodized Polymeric Membrane- a Water Disinfectant
3. Development of Medical Grade Pressure Sensitive Adhesives Based on Acrylic Polymers
4. Development of Fire Resistant Low Smoke Cable Compounds Based on Polyvinyl Chloride Resins

(1988 -1993)

Was a research fellow pursuing doctoral program in the Department of Chemistry, IIT Delhi. The title of the Ph. D. thesis was "**Iodine Containing Antimicrobial Polymers".** In order to develop antimicrobial polymers, various iodine containing polymeric hydrogels were synthesized and characterized. Their physical and chemical properties, chemical structure, release of iodine and antimicrobial activity were studied. Applications of the developed antimicrobial polymers as water disinfectants were conducted in static and dynamic conditions.

Have experience on working with UV-VIS Spectrophotometer, IR and NMR Spectrometer, HPLC, DSC and TGA Instruments.

(1985 - 1987)

Qualified UGC NET JRF and joined the Department of Chemistry, AMU, Aligarh to pursue M. Phil. Program in Synthetic Organic Chemistry. M. Phil dissertation was titled "**Synthesis and Characterization of Oxygen Containing Heterocyclic Compounds (3, 4-benzopyrans)**".

Research Projects

1. Bipolymer Based Delivery Systems for Nutrients and Food Components

2. Iodine-Polymer Complexes: Synthesis, Characterization and Release Studies

3. Development of Natural Polymer Based Iodine Supplementation to Combat Iodine Deficiency, a Nutritional Problem Faced by Indian Women (Sponsored by AAUW Educational Foundation, Washington DC, USA)

4. Development of Polymeric Disinfectants for Small-scale Water Treatment Systems (Sponsored by AAUW Educational Foundation, Washington DC, USA)

5. Development of Biodegradable Polymeric Hydrogels for Biomedical Applications

6. Polymeric Reagents – Synthesis, Characterization and their Applications in Organic Synthesis

7. Development of Antimicrobial Polymers for Water Disinfection and Sterilization

Membership:

1. Life member of Society for Biomaterials and Artificial Organs, India
2. Member of American Chemical Society, Polymer Chemistry Division, USA

Fellowships:

- American Association of University Women (AAUW) Educational Foundation's International Fellowships
- Post-doctoral Research Fellowship by Council for Scientific and Industrial Research, India
- Senior research fellowship by Indian Institute of Technology, Delhi, India
- Junior research fellowship, NET by University Grants Commission, India

Courses Participated in:

1. 57th Four-week Orientation Course at Academic Staff College, Jamia Millia Islamia, New Delhi from 19 February to 21 March, 2002
2. 3-Week Refresher Course at Center for Professional Development in Higher Education, University of Delhi from 22 February to 14 March, 2006
3. 3-Week Refresher Course in Chemistry at Center for Professional Development in Higher Education, University of Delhi from 14 February to 08 March, 2011
4. 1-Week Hands on Training in NMR Spectroscopy at the Department of Chemistry and Chemical Biology, Rutgers University, the State University of New Jersey, USA

List of Selected Published Research Papers

1. **Nasreen Mazumdar**, Akbar Ali and Showkat A Ganie, "Iodine Derivatives of chemically Modified Gum Arabic Microspheres, *Carbohydrate Polym*; 92(1), 497-502, **2015**

2. **Nasreen Mazumdar**, S. Ishraque Ahmed, Akbar Ali and Showkat A Ganie, Iodine complexes of acid-functionalized poly(vinyl alcohol) hydrogels: synthesis, characterization and release studies, March issue of *Journal Polymeric Materials*, **2016**

3. **Nasreen Mazumdar**, S. I. Ahmad and S. Kumar, "Functionalization of natural gum: an effective method to prepare iodine complex. *Carbohydrate Polym*; 92(1), 497-502, **2013**

4. **Nasreen Mazumdar**, CKV Zainul Abid and Harpal Singh, "Synthesis and Characterization of Quaternary Ammonium Polyamidoamine Dendrimers and Dendritic Polymer Network with Potential Antimicrobial Activities", *Polymers for Advanced Technologies* (**2014**) (In press)

5. **Nasreen Mazumdar**, Shubhra Goel and Alka Gupta, "Growth of One-Dimensional Polyindole Nanostructures", *Journal of Nanoscience and Nanotechnology*, 11, 1-9, **2011**

6. **Nasreen Mazumdar**, S. Goel and Alka Gupta, "Synthesis and Characterization of Poly(indene-co-pyrrole) Nanofibers", *Polym. Adv. Technol.* 21, 888-895, **2010**

7. **Nasreen Mazumdar**, Michel L. Chikindas, Kathryn Uhrich, "Slow Release Polymer-Iodine Tablets for Disinfection of Untreated Surface Water", *Journal of Applied Polymer Science*, 17(1), 329-334, **2010**

8. **Nasreen Mazumdar**, Shubhra Goel, Alka Gupta, "One-dimensional Nanofibers of Polyindene: Synthesis and Characterization", *Journal of Polymer Research*, 17, 639-645, **2010**

9. **Nasreen Mazumdar**, CKV Zainul abid, Sruti Chattopadhyay, Harpal Singh, "Synthesis and Characterization of Quaternary Ammonium PEGDA Dendritic Copolymer Networks for Water Disinfection", *Journal of Applied Polymer Science*, 116(3), 1640-1649, **2010**

10. **Nasreen Mazumdar**, Shubhra Goel, Alka Gupta, "Synthesis and Characterization of Polypyrrole Nanofibres with Different Dopants", *Polymers for Advanced Technologies*, 21, 205-210, **2010**

11. **Nasreen Mazumdar,** Shubhra Goel, Alka Gupta Fabrication of Polyindene and Polyindole Nanostructures, *Appl. Surf. Sci*. 256, 4426-4433, **2010**

12. **Nasreen Mazumdar**, Z. Abid, I. Ahmed, N. Hasan, Preparation and Characterization of Polymeric Films Based on Gum Acacia, Polyvinylalcohol and Polyvinylpyrrolidone-iodine, *Journal of Applied Polymer Science*, Vol. 109, 775-781, **2008**

13. **Nasreen Mazumdar**, Nidhi and J. Bijwe "Influence of Amount and modification of Resin on Fade and Recovery Behaviour of Non-asbestos Organic (NAO) Friction Materials", *Tribology Letters*, 23(3), 215-222, **2006**

14. **Nasreen Mazumdar**, Nidhi, B. K. Satpathy and J. Bijwe, "Influence of Phenolic Resins on the Fade and Recovery Properties of Friction Materials", *Journal of Reinforced Plastics and Composites*, Vol. 25(13), 1333-1340, **2006**

15. **Nasreen Mazumdar**, Nidhi, B. K. Satpathy and J. Bijwe, Influence of Modified Phenolic Resins on the Fade and Recovery Behavior of Friction Materials, *Wear* (259) 1068-1078, **2005**

16. **Nasreen Mazumdar**, A. Rattan and H. Singh, Iodine Incorporated Latex Catheters: In Vitro Antimicrobial Studies, *Trends in Biomaterials and Artificial Organs*, Vol. 17 (1), 28-33, **2003**

17. **Nasreen Mazumdar**, R. Vardarajan and H. Singh, Preparation and Properties of Iodinated Polymeric Hydrogels, *Oriental Journal of Chemistry*, Vol. 18(3), 417-420, **2002**

18. **Nasreen Mazumdar**, R. Vardarajan, and H. Singh, Iodine Incorporated Copolymer of Methyl Methacrylate and N-vinylpyrrolidone. I. Synthesis and Characterization, *Journal of Macromol. Sci.- Pure and Applied Chemistry,* A 33(3), 353-370, **1996**

19. **Nasreen Mazumdar**, R. Vardarajan, A. Rattan and H. Singh, "Inactivation of Escherichia coli in Water by Iodine Containing Polymer", *Journal of Water Supply Research & Technology- AQUA*, 42(6), 351-356, **1993**

20. **Nasreen Mazumdar**, R. Vardarajan, A. Rattan and H. Singh, "Inactivation of Escherichia coli in Water by Iodine Containing Polymers", *Trends in Biomaterials and Artificial Organs*, 6(2), 57-62, **1992**

Book Chapters

1. *Recent Advances in Synthesis of Polypyrrole Nanostructures* In: Polypyrrole: Properties, Performance and Applications
   Nasreen Mazumdar, Shubhra Goel and Alka Gupta
   (Invited Chapter, Accepted in Nova Publications, New York, USA, in press)

2. *Nanostructured Conducting Polymers* In: Advances in Nanotechnology
   Nasreen Mazumdar, Shubhra Goel and Alka Gupta
   (Invited Chapter, Accepted in Nova Publications, New York, USA, in press)

Papers presented in seminars and conferences in India and abroad (2009-2014)

(i) Presented a paper titled "Iodine Complexes of Chemically Modified Natural Gum and their Use as Iodine Release Systems" at EPNOE 13, International Polysaccharide Conference organized by ACS and EPNOE (European Network of Polysaccharide) on October, 2013 in Nice, France

(ii) Presented a poster titled "Iodine Complexes of Chemically Modified Natural Gum" at the International Conference Biomaterials- 2014, New Delhi on October 27-30, 2014

(iii) Presented a poster titled "An Iodine Releasing Polymer for Use as Source of Dietary Iodine" at Global R & D Summit-Destination India in New Delhi, organized by FICCI and DST in July 2013

(iv) Presented a paper "Iodine Release Systems Based on a Natural Gum for Use as a Dietary Iodine Source" at the conference "New Frontiers in Chemistry" held at the Department of Chemistry, Punjabi University, Patiala on February, 2013

(v) Presented an invited talk on “Polymeric Disinfectants” at a conference “Frontiers in Polymer Science II” at the Department of Chemistry, HPU, Shimla on December 13, 2013

(vi)Presented a lecture on “Water and Women: Some Reflections” as an invited speaker on June 7, 2009 at Schering Plough Research Institute, Summit, New Jersey, USA

(vii) Presented a paper on “Alternative Water Treatment Devices for Underdeveloped Countries” as an invited speaker on March 22, 2009 at AAUW branch office, New York, USA

(1992- 2007)

Nasreen A. Mazumdar and Syed I. Ahmad, “Gum Acacia and its Derivative Based Biodegradable Hydrogel Matrices for Release of Iodine” IUPAC/ACS conference on Macromolecules for a Safe, Sustainable and Healthy world, June 11-13, 2007, Brooklyn, NY

Nasreen A. Mazumdar, N. Hassan and I. Ahmad, Preparation, Properties and Synthetic Applications of Polymeric Brominating Agents, presented at the International Conference on Recent Advances in Polymers, Chennai, January, 2006

Nasreen A. Mazumdar and R. Pandey, Studies on Preparation and Properties of a Biodegradable Polymer Based on Blended Gum Acacia, presented at the International Conference on Plastics and Environment-Opportunities and Challenges, New Delhi, February, 2003

Nasreen A. Mazumdar and R. Pandey, “Suspension Polymerization of Acrylates and Methacrylates for Biomedical Applications” presented at a National Conference on Smart polymers, Allahabad, 2002

Nasreen A. Mazumdar and H. Singh, Synthesis, Characterization and Applications of Iodinated PVP/MMA Copolymers, presented at the International Conference on Drug Delivery Systems, Jadavpur University, Kolkata, December, 2000

Nasreen A. Mazumdar, R. Vardarajan and H. Singh, “Iodine Containing Antimicrobial Polymer for Sustained Delivery”, presented at the ACS International Symposium on Polymer Delivery Systems, San Francisco USA, April, 1992