

CURRICULUM VITAE

Dr. Swati Chaudhary

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Permanent Address:

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Gali No-4 Shahdara
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Research Interests:

Biophysical aspects of DNA and its multistranded structures, DNA-drug interaction, Molecular Biology, Genetics, Cancer Biology, Nanotechnology, Characterization of Tobacco products.

Academic Qualifications:

Ph.D. (Chemistry), Department of Chemistry, University of Delhi, Delhi, India, 2018

Thesis Title: Characterization of DNA structures formed at Single Nucleotide Polymorphic (SNP) sites of Human GRIN1 and APOE Genes.

M.Sc. (Organic Chemistry), Hindu College, University of Delhi, Delhi, India, 2012.

B.Sc. (Chemistry (H)), Hindu College, University of Delhi, Delhi, India, 2010.

Academic Distinctions:

- **Best poster award** in 22nd ISCB International Conference (ISCBC-2016) organized by Uka Tarsadia University, Surat, Gujarat (2016).

- Secured 3rd rank in **Delhi University, M.Sc. (Chemistry)**, Department of Chemistry, University of Delhi (2012).
- Got scholarship for scoring high marks (was amongst **Top 20**) at **Delhi University level** (2007).

Career Profile (Academic/Research Experience):

Research Experience:

- Working in collaboration with **Cluster Innovation Centre**, University of Delhi from 2019 onwards continuously (DST-SERB funded project).
- Working in Collaboration with **National Institute of Cancer Prevention and Research**, ICMR, Noida from 2020 onwards.

Current Employment:

- Presently working as **Assistant Professor**, Applied Science Department, Maharaja Surajmal Institute of Technology (2018-present).

Teaching Experience:

- Maharaja Surajmal Institute of Technology, Guru Gobind Singh Indraprastha University, Delhi (From July 2018 onwards).
- Maharaja Surajmal Institute of Technology, Guru Gobind Singh Indraprastha University, Delhi (From January 2017 – May 2018).

Administrative Experience:

- Member, Admission Committee of B. Tech (CSE) (Aug. 2021).
- Member, Research Project Committee (2021).
- Member, Prakriti/NSS Committee (2021).
- NAAC coordinator of Applied Science Department, Maharaja Surajmal Institute of Technology, 2021.
- Question paper setter for B. Tech Students (Subject- Environmental Studies), 2021.
- Member, Admission Committee of B. Tech (IT) (Aug. 2020).

- Member, E-cell Committee (2020).
- Member, Prakriti/NSS Committee (2020).
- Member, Admission Committee of B. Tech (IT) (Aug. 2019).
- Member, E-cell Committee (2019).
- Member, Prakriti/NSS Committee (2019).

Subjects Taught:

- B. Tech 1st sem; Paper ETCH-113, Applied Chemistry.
- B. Tech 2nd sem; Paper ETEN-114, Environmental Studies.

Publications (Research Articles/Reviews/ Book Chapters):

1. **Swati Chaudhary**, Mohan Kumar and Mahima Kaushik. Interface of G-quadruplex with both stabilizing and destabilizing ligands for targeting various diseases. *"International Journal of Biological Macromolecules"* 219 (2022) 414-427. <https://doi.org/10.1016/j.ijbiomac.2022.07.248>. IF= 8.025.
2. **Swati Chaudhary**, Pankaj Kumar and Mahima Kaushik. Exploring the interaction of guanidine ligands Amiloride, Rimeporide and Cariporide with DNA for understanding their role as inhibitors of Na⁺/H⁺ exchangers (NHEs): A spectroscopic and molecular docking investigation. *"International Journal of Biological Macromolecules"* 213 (2022) 834-844. <https://doi.org/10.1016/j.ijbiomac.2022.06.009>. IF= 8.025.
3. **Swati Chaudhary**, Amit Singh, Pankaj Kumar and Mahima Kaushik. Strategic targeting of non-small-cell lung cancer utilizing genetic material-based delivery platforms of nanotechnology. *"Journal of Biochemical and Molecular toxicology"* 35(7) (2021) e22784. <https://doi.org/10.1002/jbt.22784>. IF= 3.568.
4. **Swati Chaudhary**, Mahima Kaushik, Saami Ahmed and Shrikant Kukreti. Exploring the potential of i-motif DNA formed in the promoter region of GRIN1 gene for nanotechnological applications. *"Results in Chemistry"* 2 (2020) 100086.
5. **Swati Chaudhary**. Vitamin D- Safeguard against cancer. *"International Journal of Advanced Research"* 7(10) (2019) 1234-1237.

6. Mahima Kaushik, Swati Mahendru, **Swati Chaudhary**, Mohan Kumar and Shrikant Kukreti. Prerequisite of a holistic blend of traditional and modern approaches of cancer management. *"Current Cancer Therapy Reviews"* 15(1) (2019) 56-64.
7. **Swati Chaudhary**, Mahima Kaushik, Saami Ahmed, Ritushree Kukreti and Shrikant Kukreti. Structural switch from hairpin to duplex/antiparallel G-quadruplex at Single-Nucleotide Polymorphism (SNP) site of Human Apolipoprotein E (*APOE*) gene coding region. *"ACS Omega"* 3(3) (2018) 3173-3182. IF= 4.132.
8. Saami Ahmed, Mahima Kaushik, **Swati Chaudhary** and Shrikant Kukreti. Formation of G-wires, bimolecular and tetramolecular G-quadruplex: Cation induced structural polymorphs of G-rich DNA sequence of human *SYTX* gene. *"Biopolymers"* 109(5) (2018) e23115. IF= 2.505.
9. Saami Ahmed, Mahima Kaushik, **Swati Chaudhary** and Shrikant Kukreti. Structural polymorphism of a cytosine-rich DNA sequence forming i-motif structure: Exploring pH-based biosensors. *"International Journal of Biological Macromolecules"* 111 (2018) 455-461. IF= 8.025.
10. **Swati Chaudhary**, Mahima Kaushik, Ritushree Kukreti and Shrikant Kukreti. Structural switch from multistranded G-quadruplex to single strands as a consequence of point mutation in the promoter of human *GRIN1* gene. *"Molecular Biosystems"* 13 (2017) 1805-1816. IF= 4.212.
11. Mahima Kaushik, **Swati Chaudhary**, Swati Mahendru, Saami Ahmed, Ankit Kumar Pathak and Shrikant Kukreti. MicroRNA: A Multi-Facet Biological Target for Cancer and other Diseases. *"Clinical Cancer Drugs"* 4(1) (2017) 2-9, Doi: 10.2174/2212697X04666170123122037.
12. Mahima Kaushik, Anju Singh, Mohan Kumar, **Swati Chaudhary**, Saami Ahmed, and Shrikant Kukreti. Structure specific ligand recognition of multistranded DNA structures. *"Current Topics in Medicinal Chemistry"* 17(2) (2017) 138-147. IF= 3.570.
13. Mohan Kumar, Mahima Kaushik, **Swati Chaudhary**, and Shrikant Kukreti. Spectroscopic Studies of the Binding Interactions of Phenothiazinium Dyes (Thionine Acetate, Azure A and Azure B) with Calf-thymus DNA. *"Journal of Drug Metabolism & Toxicology"* 7:3 (2016).

14. Mahima Kaushik, **Swati Chaudhary**, Swati Mahendru, Mohan Kumar, and Shrikant Kukreti. Genetic variations: Heroes or villains. *"Journal of Down Syndrome & Chromosome Abnormalities"* 2 (2016).
15. Mahima Kaushik, Swati Mahendru, **Swati Chaudhary**, and Shrikant Kukreti. DNA Fingerprints: Advances in their Forensic Analysis Using Nanotechnology. *"Journal of Forensic Biomechanics"* 8:1 (2016).
16. Mahima Kaushik, Mohan Kumar, **Swati Chaudhary**, Swati Mahendru, and Shrikant Kukreti. Advancements in Characterization Techniques of Biomolecules: Cyclic Voltammetry, Gel Electrophoresis, Circular Dichroism, and Fluorescence Spectroscopy. *"Advanced Techniques in Biology and Medicine"* 4:3 (2016).
17. Mahima Kaushik, Swati Mahendru, Mohan Kumar, **Swati Chaudhary**, and Shrikant Kukreti. Genomic Databases and Softwares: In pursuit of Biological relevance through Bioinformatics. *"Advanced Techniques in Biology and Medicine"* 4:3 (2016). IF=2.64.
18. Mahima Kaushik, Shikha Kaushik, Kapil Roy, Anju Singh, Swati Mahendru, Mohan Kumar, **Swati Chaudhary**, Saami Ahmed, and Shrikant Kukreti. A bouquet of DNA structures: Emerging diversity. *"Biochemistry and Biophysics Reports"* 5 (2016) 388-395.

Book Chapters:

1. **Swati Chaudhary**, Niloy Sarkar and Mahima Kaushik. Recent advances in nanotechnology for accomplishing sustainable agriculture. *Water Conservation in the Era of Global Climate Change*, (2021) 147-166. ISBN no.- 978-0-12-820200-5.
2. Niloy Sarkar, **Swati Chaudhary**, Mahima Kaushik. Nano-fertilizers and Nano-pesticides as promoters of plant growth in Agriculture, In Singh P., Singh R., Verma P., Bhadouria R., Kumar A., Kaushik M. (eds) *Plant-Microbes-Engineered Nano-particles (PM-ENPs) Nexus in Agro-Ecosystems. Advances in Science, Technology & Innovation (IEREK Interdisciplinary Series for Sustainable Development)*. Springer, Cham. (2021) 153-163. https://doi.org/10.1007/978-3-030-66956-0_10. ISBN no.- 978-3-030-66956-0.

3. **Swati Chaudhary**, Mohan Kumar, Saami Ahmed, Mahima Kaushik. Detection and Removal of Heavy metals from wastewater using Nanomaterials, In Water resource management: Strategies and scarcity, (March 2021) 243-272. ISBN no.- 978-1-119-69367-3.
4. Mahima Kaushik, **Swati Chaudhary**, Sonia, Komal and Shrikant Kukreti. Decoding DNA structure using NMR spectroscopy, In Applications of NMR spectroscopy, (2019) vol 7, 144-163, Bentham Science Publishers. ISBN no.- 978-1-68108-642-2.
5. Mahima Kaushik, Swati Mahendru, Mohan Kumar, **Swati Chaudhary**, Saami Ahmed, Sonia, and Shrikant Kukreti. Overview of Chemoresistance in Cancerous cells, In Frontiers in Drug Design & Discovery, (2018) Vol 9, 35-90, Bentham Science Publishers. ISBN no.- 978-1-68108-583-8.

Workshop/Conference/Seminar Participated:

Talks Delivered:

- Oral talk on "To explore the structural difference between the $\epsilon 3$ and $\epsilon 4$ allele SNP of the human Apolipoprotein (APOE) gene" in Professor Amarnath Maitra Memorial seminar, Department of Chemistry, University of Delhi, 11th Feb. 2017.

Poster Presentations:

International:

- To explore the structural difference between the $\epsilon 3$ and $\epsilon 4$ allele SNP of the human Apolipoprotein (APOE) gene
S. Chaudhary, S. Ahmed, S. Kukreti
22nd ISCB International Conference 2016, Uka Tarsadia University, Surat, Gujarat, India (6-8th Feb. 2016)
- Identification and Characterization of DNA Quadruplex Element in the Human GRIN1 Promoter region
S. Chaudhary, S. Kukreti
21st ISCB International Conference 2015, CDRI, Lucknow, India (25-28th Feb. 2015)

National:

- Groundwater Pollution
S. Chaudhary, S. Gupta, M. Kumar, S. Ahmed
National Symposium on Geogenic Contamination of groundwater 2016, Department of Regional water Studies, Teri University, New Delhi, India (22nd April 2016)
- Plausible G-quadruplex elements in human GRIN1 promoter region
S. Chaudhary, S. Ahmed, S. Kukreti
National symposium on Biophysics 2015, Centre for Interdisciplinary Research in Basic Sciences, Jamia Millia Islamia, New Delhi, India (14-17th Feb. 2015)

Participation at Conferences/Seminars/workshops:

- 7th WHO TobLabNet Meeting, Singapore (7-9th December, 2022)
- WHO TobLabNet 2-day training programme, Health Sciences Authority, Singapore (5-6th Dec. 2022)
- National Conference on Nucleic Acid Science & Technology, CSIR-Institute of Minerals and Materials Technology, Bhubaneswar (10-13th Aug. 2021)
- International Conference on Artificial Intelligence and Applications, Maharaja Surajmal Institute of Technology, Delhi (6-7th Feb. 2020)
- International Congress on Friedreich's ataxia and DNA structure in Health and Disease, AIIMS, New Delhi and DNA Society of India (11-13th April 2015)
- A workshop on Computational Chemistry and Bioinformatics, Department of Chemistry, Miranda House, University of Delhi, Delhi in collaboration with DS BIOVIA (26-28th Aug. 2015)
- Academic and cultural festival 'Antardhwani' organized by University of Delhi (20-22nd Feb. 2015)
- A workshop on Information /literacy and Competency organized by Delhi University Library System, University of Delhi, Delhi (4th Dec. 2014)
- Author Workshop conducted by Elsevier in association with University of Delhi, Delhi (22nd Sept. 2014)
- A workshop on IPR, Patenting and Patentability Assessment organized by Cluster Innovation Centre, University of Delhi (4th Sept. 2014)

- National symposium on Frontiers of Biophysics, Biotechnology and Bioinformatics, University of Mumbai, Mumbai (13-16th Jan. 2013)
- Awards of good practice event, Cultural festival, Antardhvani, University of Delhi, Delhi (22-24th Feb. 2013)
- Publishing Connect Workshop, conducted by Elsevier in collaboration with University of Delhi, Delhi (11th Sept. 2013)
- International Interdisciplinary Science Conference on protein folding and diseases, Jamia Millia Islamia, Delhi (8-10th Dec. 2012)

FDP/Refresher Programme attended:

- AICTE-ISTE approved Orientation/Refresher Programme on 'Use of ICT in Engineering Education', Maharaja Surajmal Institute of Technology, New Delhi (7-13th April 2021).
- 'Global Tobacco Control: Learning from the Experts Course' conducted by Institute for Global Tobacco Control, Johns Hopkins Bloomberg School of Public Health. (15th July 2020)
- 'Smokeless Tobacco Cessation' short term course conducted by National Institute of Cancer Prevention and Research, ICMR (10th July- 28th Sept. 2020).
- FDP on 'Entrepreneurial opportunity identification and project formulation in service sector', Maharaja Surajmal Institute of Technology in collaboration with Education and Educational Management Department, NITTTR, Chandigarh (13-17th May 2019).
- FDP on 'Contemporary issues and challenges in management, education and information technology', Maharaja Surajmal Institute of Technology, Delhi (5-9th Feb. 2019).
- FDP on 'Classroom communication through ICT', Maharaja Surajmal Institute of Technology in collaboration with Education and Educational Management Department, NITTTR, Chandigarh (28th May- 1st June 2018).

Research Projects (Major/Minor Grants/Research Collaboration):

- "Physicochemical Investigations of the binding interactions of NHE inhibitors (Rimeporide, Amiloride and Cariporide) with APOE3/APOE4 isoforms of human *APOE* gene" funded by DST-

SERB, Government of India under the scheme 'Teachers Associateship for Excellence Research (TARE)'- PI (2019-ongoing) Reg. No. TAR/2019/000343.

Achievements/Awards/Distinctions:

- Awarded certificate of **Excellence in Research** by Maharaja Surajmal Institute of Technology, Delhi in recognition of an **outstanding contribution** to the quality of research (11th Jan. 2020).
- Awarded **Senior Research Fellowship** by CSIR (2015-2018).
- Joint CSIR-UGC (National Eligibility Test for Lectureship (**NET**) Qualified (2012).
- Awarded **Junior Research Fellowship** by CSIR (2012-2014).

Membership of Scientific/Research Societies:

- Life Member, Indian Biophysical Society.
- Life Member, DNA Society of India (DSI) (LM-168).
- Life Member, Indian Science Congress.