



**MAITREYI COLLEGE**  
(UNIVERSITY OF DELHI)  
CHANAKYAPURI, NEW DELHI – 110021  
**Faculty Details Proforma for College Website**

|   |   |                     |       |           |  |            |
|---|---|---------------------|-------|-----------|--|------------|
| Title   | Dr.   | First Name          | Nishu | Last Name |  | Photograph |
| Designation   | Assistant Professor   |                     |       |           |  |            |
| Department  | Chemistry   |                     |       |           |  |            |
| Address   | Department of Chemistry, Maitreyi College, University of Delhi, Chanakyapuri, New Delhi-110021, India |                     |       |           |  |            |
| Phone No. Office  |   |                     |       |           |  |            |
| Residence   |   |                     |       |           |  |            |
| Mobile  |   |                     |       |           |  |            |
| Email   | <a href="mailto:nishu@maitreyi.du.ac.in">nishu@maitreyi.du.ac.in</a>                                  |                     |       |           |  |            |
| Web-Page  |   |                     |       |           |  |            |
| <b>Educational Qualifications</b>   |   |                     |       |           |  |            |
| <b>Degree</b>   | <b>Institution</b>  |                     |       |           | <b>Year</b>                              |            |
| Ph.D. Chemistry   | Department of Chemistry, University of Delhi  |                     |       |           | 2023                                     |            |
| M.Sc. Chemistry   | Ramjas College, University of Delhi   |                     |       |           | 2017                                     |            |
| B.Sc. (H) Chemistry   | Motilal Nehru College, University of Delhi  |                     |       |           | 2014                                     |            |
| <b>Career Profile</b>   |   |                     |       |           |  |            |
| <b>Organization / Institution</b>   |   | <b>Designation</b>  |       |           | <b>Duration</b>                          |            |
| Maitreyi College, University of Delhi   |   | Assistant Professor |       |           | 17 <sup>th</sup> January 2024 to PRESENT |            |
| <b>Areas of Interest/Specialization</b>   |   |                     |       |           |  |            |
| Biophysical and Biochemical aspects of Nucleic Acids, Multistranded DNA Structures (Hairpin, Duplex, Holliday Junction, G-quadruplexes, etc.). Bioinformatics approaches using NCBI, Clustal, EPD sites, UCSC browser etc. Bimolecular Interactions: DNA-Drug interactions (using UV-Spectroscopy, UV-thermal denaturation, Circular Dichroism, Fluorescence & Gel-electrophoresis).  |   |                     |       |           |  |            |
| <b>Subjects Paper Taught</b>  |   |                     |       |           |  |            |
| DSC- Biomolecules II<br>CHE-DSC-02- Chemical Bonding and Elements in Biological System<br>SEC- Chemistry of Food, Flavors, and Colourants<br>VAC-The Art of Being Happy   |   |                     |       |           |  |            |
| <b>Research papers published in Peer Reviewed/Indexed Journals</b>  |   |                     |       |           |  |            |
| <ol style="list-style-type: none"> <li>1. <b>Nain, N.</b>, Singh, A., Khan, S., &amp; Kukreti, S. (2023). G-quadruplex formation at human <i>DAT1</i> gene promoter: Effect of cytosine methylation. <i>Biochemistry and Biophysics Reports</i>, 34, 101464. (<b>Impact Factor</b>- 2.7)</li> <li>2. <b>Nain, N.</b>, Singh, A., Khan, S., Kaushik, M., Kukreti, S. (2022). Structural switching/polymorphism by sequential base substitution at quasi-palindromic SNP site (G→A) in LCR of human <math>\beta</math>-globin gene cluster. <i>International Journal of Biological Macromolecules</i>, 201, 216-225. (<b>Impact Factor</b>- 8.2)</li> <li>3. Khan, S., Singh, A., <b>Nain, N.</b>, Gulati, S., Kukreti, S. (2021). Sequence-specific recognition of a coding segment of human <i>DACHI</i> gene via short pyrimidine/purine oligonucleotides. <i>RSC Advances</i>, 11(63), 40011-40021. (<b>Impact Factor</b>- 3.9)</li> <li>4. Khan, S., Singh, A., <b>Nain, N.</b>, &amp; Kukreti, S. (2023). Alkali cation mediated topology displayed by an exonic G-rich sequence of TRPA1 gene. <i>Journal of Biomolecular Structure and Dynamics</i>, 41(19), 9997-10008. (<b>Impact Factor</b>- 4.4)</li> </ol> |   |                     |       |           |  |            |

### Book Chapter

Anju Singh, Shoab Khan#, Nishu Nain#, Shrikant Kukreti (2023). Deciphering Plausible Role of DNA nanostructures in Drug Delivery. In *Fiber and Textile Engineering in Drug Delivery Systems* (pp. 215-251). Woodhead Publishing. (Chapter 7) (#equal contribution) ISBN: 978-0-323-99500-9.

### Conferences Organization/ Presentations

1. Participated in oral presentation on topic “G-quadruplex formation at human DAT1 gene promoter: Effect of cytosine methylation” in International Conference on “Recent Trends in Biological and Chemical Sciences” at ICRTBCS-2023 jointly organized by Shri Ramswaroop Memorial University, Uttar Pradesh and Hindu College, University of Delhi, India held on November 25th, 2023. **(3rd Prize in Oral Presentation)**
2. Participated in “International Conference and Workshop on Twelve Principles of Green Chemistry and UN-SDGs” organized by Green Chemistry Network Centre, Hindu College, University of Delhi on November 9-10th, 2023.
3. Presented a poster on topic “Structural switching/polymorphism by sequential base substitution at quasi-palindromic SNP site (G→ A) in LCR of human  $\beta$ -globin gene cluster” in International Conference on “Recent Advances in Nanomedical Sciences (RANMS-2022)” organized by Institute of Nano Medical Science (INMS) & Institution of Eminence (IOE), University of Delhi, held during June 22-23, 2022. **(Best poster Award)**
4. Participated in “XV J-NOST 2019” Conference for Research Scholar organized by the Department of Chemistry, University of Delhi held during October 18-21, 2019.
5. Participated in “National Symposium on Recent trends, Development and Methodologies in Biophysics” organized by the Department of Biophysics, University of Delhi, South Campus, held on September 7, 2019.
6. Presented a poster on topic “Eukaryotic Telomeric Sequence under Methylation” in International Conference on “6th World Congress on Nanomedical Sciences” organized by Jamia Hamdard University & University of Delhi on January 7-10, 2019.

### Workshops

1. Participated in 7 Day Technical Hands-On-Workshop on “**Molecular Docking | Study to predict interaction energy between molecules**” organized by BDG LIFESCIENCES from November 24-30, 2021.
2. Participated in the National Workshop on “**Thieme Chemistry: Science of Synthesis**” organized by Department of Chemistry, University of Delhi, held on September 28, 2018.
3. Participated in the “**American Chemical Society (ACS) on-campus Meeting**” at North Campus, University of Delhi held on February 5, 2018.

### Webinars

1. Attended the International webinar on “**Personalized Medicine and Pharmacogenomics: A Novel Cost Effective Approach in Therapeutics**” organized by ISPOR Student Educational Society, Department of Pharmacy Practice, NIPER Mohali, India held on January 20, 2022.
2. Attended the International webinar on “**Post-COVID challenges and opportunities for the Chemist**” jointly organized by Indian Science Congress Association (Delhi Chapter) and Department of Chemistry, University of Delhi held on December 28, 2021.
3. Attended the webinar on Popular Science Writing “**AWSAR (Augmenting Writing Skills for Articulating Research)**” organized by DST, GOI & Vigyan Prasar, held on October 14, 2021
4. Attended the webinar on “**Communicating Science to the Citizen during COVID19 pandemic: Be prepared not panic**” organized by National Council for Science & Technology Communication, DST, GOI and Gujarat Council on Science and Technology, DST, Government of Gujarat on May 11, 2020.
5. Attended the webinar on “**Learning to live with virus**” organized by National Council for Science & Technology Communication, DST, GOI and Gujarat Council on Science and Technology, DST, Government of Gujarat on May 12, 2020.
6. Attended the webinar on “**Genome sequencing in search of vaccine for coronavirus**” organized by National Council for Science & Technology Communication, DST, GOI and Gujarat Council on Science and Technology, DST, Government of Gujarat on May 13, 2020.

7. Attended the webinar on “**S & T Intervention in fighting COVID 19 pandemic**” organized by National Council for Science & Technology Communication, DST, GOI and Gujarat Council on Science and Technology, DST, Government of Gujarat on May 15, 2020.
8. Attended the National webinar on “**रोग में योग**” organized by Yoga Club, Bhaskaracharya College of Applied Science, University of Delhi held on May 16, 2020.

#### **Awards and Distinctions**

- **3<sup>rd</sup> Prize** in Oral Presentation jointly organized by Shri Ramswaroop Memorial University, Uttar Pradesh and Hindu College, University of Delhi, 2023
- **Best Poster Award** presented by Institute of Nano Medical Science (INMS) & Institution of Eminence (IOE), University of Delhi, 2022.
- Senior Research Fellowship (**SRF**) from CSIR, Govt. of India [2020-2023] Ph.D. period.
- Junior Research Fellowship (**JRF**) from CSIR, Govt. of India. [2018-2020] Ph.D. period.
- Qualified Graduate Aptitude Test in Engineering (GATE), 2018
- Secured **AIR-36** in CSIR NET JRF, Dec-2017
- Secured **AIR-15** in CSIR NET LS, June-2017
- **AIR-2** in Ph.D. Entrance Exam 2017, Delhi University
- **AIR-22** in M.Sc. Entrance Exam 2015, Delhi University
- Secured **AIR-438** in IIT-JAM 2014

#### **Faculty Development Programme (FDP)/Refresher Course**

Successfully completed Four Week Faculty Orientation/Induction Programme for “**Faculty in Universities/Colleges/Institutions of Higher Education**” Organized by Teaching Learning Centre Ramanujan College, University of Delhi under the aegies of Ministry of Education, Pandit Madan Mohan Malaviya National Mission on Teachers, and Teaching (PMMMNTT) held from **22 January 2024 – 20 February 2024** and obtained **A+ grade**.