DEPARTMENT OF CHEMISTRY
DYAL SINGH COLLEGE, UNIVERSITY OF DELHI
FACULTY DETAIL

Title	Prof. (Dr.)	First Name	Alka	Last Name	Gupta	Photograph
Designation		Professor				
Address		H.No. 943, Sector 23-A, Gurgaon, Haryana-122017				
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Residence		0124-2365189				
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Educational Qualifications		
Degree	Institution	Year
Ph.D	Department of Chemistry, University of Delhi	1991
M.Phil	Department of Chemistry, University of Delhi	1986
MSc (Chemistry)	Department of Chemistry, University of Delhi	1985
BSc (Chemistry)	St. Stephen's College, University of Delhi	1983

Career Profile

Organization	Designation	Duration	Role
Dyal Singh College, University of Delhi	Professor	July 2018 – till date	Teaching and Research
Dyal Singh College, University of Delhi	Associate Professor	October 2009 - July 2018	Teaching and Research
Dyal Singh College, University of Delhi	Reader	October 2006 - October 2009	Teaching and Research
Dyal Singh College, University of Delhi	Lecturer	October 2004 - October 2006	Teaching and Research
Dyal Singh College, University of Delhi	Lecturer (on Adhoc basis)	August 2002 - October 2004	Teaching and Research
National Physical laboratory (NPL)	Research Associate	October 1997 - October	Research

Administrative Assignments (From 1st July 2018 onwards)

Director, Internal Quality Assurance Cell(Since 2016)
Convenor, Scrutiny Committee, Faculty Promotions (Since 2021)
Member, Equal Opportunity Cell (Since 2023)
College Bursar March 2019 – June 2022
Nodal Officer, Swatch Bharat Abhiyan Summer Internship Program, Govt. of India. May June 2018
Nodal Officer, All India Survey on Higher Education,
Deputy Coordinator, Central Evaluation Center, University of Delhi(2009 to 2020)
Vice Principal, Dyal Singh College, 15-04-15 to 14-04-2016

Areas of Interest / Specialization

Nanobiotechnology and Nano-biopesticides
Peptide/Polymer-based Nanostructures for biomedical applications
Bio-pesticides based Nanostructures

Subjects Taught

Undergraduate
B.Sc. (Hons) III year
Chemistry of Biomolecules, Organic Spectroscopy, Polymer Chemistry, Pharmaceuticals Chemistry, Organic Dyes

Practical
All B.Sc. (Hons.)& B.Sc. (Prog.) Organic Chemistry Practical

Research Guidance

Dr. Rahul Goel: Design, Synthesis and Characterization of nanomaterials using self-assembling β-amino acid containing model peptide systems for biomedical applications. (Ph.Dthesis awarded in 2018)

Dr. Charu Garg: Design and development of modified amino-containing peptide based nanostructures for biomedical applications (Ph.D thesisawarded in 2023)

Dr. Preeti Goyal: Design and development of polymeric nanostructures as efficient drug delivery systems (Ph.DThesis Awarded in 2023)

Mr. Ankur: Design and Synthesis of bio-pesticide nano-formulations (Ongoing PhD thesis)

Guiding summer interns in the above-mentioned research area
Guiding postgraduate students in their dissertations

Publications Profile (From 1st July 2018 onwards)

1. Ankur, **Alka Gupta**, Pragati Rawat, Mahak Singh, and Sanjiv Mullick. Development and characterization of Cymbopogon winterianus (Jowitt) essential oil-based nano-emulsion for larvicidal and antifeedant activity against Spodoptera litura (Fab.) (Lepidoptera: Noctuidae). BioNanoScience. 2024. **Impact Factor 3,ISSN No. 2191-1649**

2. Rahul Goel, Meenu Mangal, Aruna Sharma, Pradeep Kumar, **Alka Gupta**. Exploring Self-Assembled Cationic Nanostructures of Amphiphilic β-Peptides for Amplifying Drug Delivery Efficiency. Asian Journal of Chemistry. 2023, 35(12), 3093-3104. **ISSN No. 0975-427X**

3. Ankur, Sanjiv Mullick, **AlkaGupta**. Development of Citronella Essential Oil-based Nanoemulsion

and its larvicidal effects against *Spodoptera litura* (Fab.) (Lepidoptera: Noctuidae). Materials Today: Proceedings. 2023 (Accepted for Publication). **ISSN No. 2214-7853**

4. Preeti Goyal, Pradeep Kumar and **Alka Gupta**. Amphipathic methoxypolyethylene glycol-curcumin conjugate as effective drug delivery system useful for colonic diseases. Colloid and Polymer Science, 2021,299, 1757-1766. **Impact Factor2.4, ISSN No. 0303-402X**

5. Preeti Goyal, Mahak Singh, Pradeep Kumar and **Alka Gupta**.Chol-Dex nanomicelles: Synthesis, characterization and evaluation as efficient drug carriers for colon targeting. Carbohydrate Research, 2021, 500, 108255. **Impact Factor3.1, ISSN No. 1873-426X.**

6. Charu Garg, Ayushi Priyam, Pradeep Kumar, Ashwani Kumar Sharma and **Alka Gupta**. In Vitro Assessment of Core-Shell Micellar Nanostructures of Amphiphilic Cationic Polymer-Peptide Conjugates as Efficient Gene and Drug Carriers. Journal of Pharmaceutical Sciences, 2020, 109, 2847-2853. **Impact Factor 3.8, ISSN No. 0022-3549**

7. Charu Garg, Ashwani Kumar Sharma, **Alka Gupta**, and Pradeep Kumar. Anisamido-Polyethylenimines as efficient nonviral vectors for the transport of Plasmid DNA to sigma receptor-bearing cells in vitro. Journal of Pharmaceutical Sciences, 2019, 108, 1552-1558. **Impact Factor 3.8, ISSN No. 0022-3549.**

8. Rahul Goel, Charu Garg, Hemant Kumar Gautam, Ashwani Kumar Sharma, Pradeep Kumar and **Alka Gupta**. Fabrication of cationic nanostructures from short self-assembling amphiphilic mixed α/β-pentapeptide: potential candidates for drug delivery, gene delivery, and antimicrobial applications. International Journal of Biological Macromolecules 111 (2018) 880 –893. **Impact Factor 8.2, ISSN: 0141-8130.**

9. Prachi Nagar, Preeti Goyal, **Alka Gupta**, Ashwani Kumar Sharma, Pradeep Kumar. Synthesis, characterization and evaluation of retinoic acid-polyethylene glycol nanoassembly as efficient drug delivery system. Nano-Structures & Nano-Objects 14 (2018) 110–117.
   Impact Factor: 1.097, ISSN: 2352-507X.

10. KritiShivhare, Charu Garg, Ayushi Priyam, **Alka Gupta**, Ashwani Kumar Sharma and Pradeep Kumar, Enzyme sensitive smart inulin-dehydropeptide conjugate self-assembles into nanostructures useful for targeted delivery of ornidazole. International Journal of Biological Macromolecules 106 (2018) 775–783.
    Impact Factor 8.2, ISSN: 0141-8130.

Conference Organization/ Presentations(From 1st July 2018 onwards)

Invited Talk Delivered

1. **"Self-assembled nanostructured drug delivery systems designed using biodegradable and bio-**

reducible polymers" delivered in an International Conference on "Macromolecules: Synthesis, Morphology, Processing, Structure, Properties and Applications (ICM-2024)" organized by Mahatma Gandhi University, Kottayam, Kerala, India on January 12-14, 2024

2. **"Structural analysis by spectroscopic methods"** delivered in a webinar organized by the Department of Chemistry, Shaheed Rajguru College of Applied Sciences, University of Delhi, on October4, 2021.

3. **"Spectroscopy and its application"** delivered in a webinar organized by the Department of Science, Lady Irwin College, University of Delhi, on August 14, 2021.

Conference/workshop/FDP organized

1. Science Fair on National Science Day 2024 on 28-29 February 2024 organised by Internal Quality Assurance Cell, Dyal Singh College.

2. One-week Faculty Development Program on Environment Sustainability and Higher Educationwas organized in collaboration with the Ministry of Environment Forest and Climate Change and Teri School of Advanced Studies from June 4 to June 11, 2018.

3. A Summer Research Internship program was organized for undergraduate students from June 2019 to July 2019.

Papers presented at Conferences

1. Ankur, Nida, Rupom Pathori, Sanjiv Mullick and **Alka Gupta**. Nano-emulsified formulation of *Eucalyptus citriodora* essential oil: Development, Characterization and its repellent activity against *Spodoptera litura* (Fab.) (Lepidoptera: Noctuidae). International Conference on Advances In Chemical And Applied Sciences For Sustainable Development (ACASSD-2024), 29th-30th March 2024, Organized by JECRC University, Jaipur, Rajasthan, India. (Oral Presentation).

2. Rupom Pathori, Nida, Ankur, **Alka Gupta** and Sanjiv Mullick. Development and survival of *Spodoptera litura*(Fab.) (Lepidoptera: Noctuidae) larvae on horticultural crops. International Conference on Advances In Chemical And Applied Sciences For Sustainable Development (ACASSD-2024), 29th-30th March 2024, Organized by JECRC University, Jaipur, Rajasthan, India. (Poster Presentation).

3. Ankur, Nida, Rupom Pathori, Sanjiv Mullick and **Alka Gupta**. *Eucalyptus citriodora* essential oil loaded PEG-based nanoformulation: Development, characterisation, and bio-efficacy against *Spodoptera litura* (Lepidoptera: Noctuidae). International Conference Offline on "Macromolecules: Synthesis, Morphology, Processing, Structure, Properties and Applications (ICM-2024), 12th-14th January 2024, organized by Mahatma Gandhi University, Kottayam Kerala, India. (Short Invited Lecture)

4. Ankur, Nida, Sanjiv Mullick and **Alka Gupta,** "Repellency and Insecticidal Activity of Nano-emulsified formulation of *Eucalyptus citriodora* Essential oil against *Spodoptera litura* (Fab.) (Lepidoptera: Noctuidae)", 74th International Symposium on Crop Protection (ISCP 2023), 23rd

May 2023, Ghent University, Belgium. (Poster Presentation)

5. Ankur, Sanjiv Mullick and **Alka Gupta**,"Development of Citronella essential oil-based Nanoemulsion and its larvicidal effects against *Spodoptera litura* (Fab.) (Lepidoptera: Noctuidae)" 4th International Conference on Materials, Manufacturing and Modelling (ICMMM2023), 24th-26th March 2023, VIT, Vellore, India. (Oral Presentation)

6. Ankur, Rahul Goel, Sanjiv Mullick, and **Alka Gupta**, "Nano-encapsulated bio-pesticide formulation: Synthesis, characterization,and bio-efficacy of nano-encapsulated lemon grass essential oil against *Spodoptera litura* (Fab.) (Lepidoptera: Noctuidae)", International Conference on Nano Science and Nano Technology (ICONSAT) 5th to 7th March 2020, organized by S. N. Bose National Centre for Basic Sciences, Kolkata.

7. Charu Garg, **Alka Gupta** and Ashwani Kumar Sharma, "Modified amino-acid Containing Self-Assembled peptide Nanostructures as Drug Delivery Vehicle", International Conference on Nano Science and Nano Technology (ICONSAT) 5th to 7th March 2020, organized by S. N. Bose National Centre for Basic Sciences, Kolkata.

8. Preeti Goyal and **Alka Gupta**, "Design and Evaluation of Retinoic Acid Amphiphilic as a Simple and Efficient Drug Transporter", International Conference on Nano Science and Nano Technology (ICONSAT) 5th to 7th March 2020, organized by S. N. Bose National Centre for Basic Sciences, Kolkata.

9. **Alka Gupta,**"Nanostructures of beta aminoacids based short oligomers: Potential Biomedical Applications", presented in 7th Indian peptide Symposium, February 28th to March 1st 2019, organized by Birla Institute of Technology, Hyderabad Campus.

10. Charu Garg, Hemant Kumar Gautam, Ashwani Kumar Sharma, Pradeep Kumar and **Alka Gupta**, "Amphiphilic mixed peptide based nanostructures for biomedical applications, presented in 7th Indian peptide Symposium, February 28th to March 1st 2019, organized by Birla Institute of Technology, Hyderabad Campus.

Research Projects (Major Grants/Research Collaboration) (From 1st July 2017 onwards)

Project: **CSIR-ASPIRE Transdisciplinary Major Research Project, 2024-2027**.
Title: Development of Nano-emulsified essential oil and Plant Metabolites based formulations and their bio-efficacy against *Spodoptera frugiperda* (Lepidoptera: Noctuidae).
Funding: **INR 24,43,360/-;** Funding Agency: CSIR
PI: **Prof. Alka Gupta**, Department of Chemistry, Dyal Singh College.
Co- PI: Dr. Sanjiv Mullick, Department of Zoology, Dyal Singh College.

Awards and Distinctions (From 1st July 2017 onwards)

NIL

Association With Professional Bodies

Life Member of Indian Peptide Society Life Member of American Peptide Society Life Member of Royal Society of Chemistry
Other Activities like MOOCs/ Patents etc. (From 1st July 2017 onwards)
Reviewer of journal, Acta Biomaterialia since 2019

Sd/-

(Prof. Alka Gupta)
Signature of Faculty Member