

Name: Dr. Gaganpreet Kaur

Designation: Assistant Professor

Specialization: Inorganic Chemistry & Nanotechnology

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Education

M.Sc. Inorganic Chemistry (2009, Hindu College, University of Delhi, Delhi)

National Eligibility Test (NET): CSIR, 2014

Ph.D. (5th Feb, 2019, Panjab University, Chandigarh)

Title of Ph. D Thesis: Syntheses of Biginelli Derivatives: Nanomaterials Development for Antimicrobial Activities and Molecular Recognition

Professional Experience:

Department of Chemistry, M.M. Modi College, Patiala, India (October, 2018 to till date)

Department of Chemistry, Lovely Professional University, Jalandhar, Panjab India (September 2009 to November, 2013).

Teaching Interests:

- Coordination Chemistry
- Organometallics
- Reaction Mechanism
- Solid State Chemistry
- Bio-inorganic Chemistry

Research Interest: Nanomaterial based sensor development and anti-microbial agents.

- Organic chemistry: Synthesis and characterization of pharmaceutically important Biginelli compounds.
- Nanomaterial development: Fabrication of organic nanoparticles, organic-inorganic nanohybrid materials and quantum dots.
- Analytical chemistry: Recognition of environmentally and biologically important analytes using nanomaterial based sensor systems through UV-vis, Fluorescence spectrophotometry and electrochemical workstation.
- Antimicrobial evaluation: Evaluation of antimicrobial activities of organic and organic-inorganic nanohybrids.

Publications:

1. Navneet Kaur, Kamalpreet Kaur, Tilak Raj, **Gaganpreet Kaur**, Ajnesh Singh, Thammarat Aree, Sae-Jin Park, Tack-Joong Kim, Narinder Singh, Doo Ok Jang, One-pot synthesis of tricyclic dihydropyrimidine derivatives and their biological evaluation, *Tetrahedron* , 2015, **71**, 332-337.
<https://doi.org/10.1016/j.tet.2014.11.039>
2. **Gaganpreet Kaur**, Tilak Raj, Navneet Kaur and Narinder Singh, Pyrimidine-based functional fluorescent organic nanoparticle probe for detection of *Pseudomonas aeruginosa*, *Org. Biomol. Chem.*, 2015, **13**, 4673–4679.
<https://doi.org/10.1039/C5OB00206K>
3. Amanpreet Kaur, **Gaganpreet Kaur**, Amanpreet Singh, Narinder Singh, and Navneet Kaur, Polyamine Based Ratiometric Fluorescent Chemosensor for Strontium Metal Ion in Aqueous Medium: Application in Tap Water, River Water, and in Oral Care, *ACS Sustainable Chem. Eng.*, 2016, **4**, 94–101.
<https://doi.org/10.1021/acssuschemeng.5b00772>
4. **Gaganpreet Kaur**, Amanpreet Singh, P. Venugopalan, Navneet Kaur and Narinder Singh, Selective recognition of lithium(I) ions using Biginelli based fluorescent organic nanoparticles in an aqueous medium, *RSC Adv.*, 2016, **6**, 1792–1799.
<https://doi.org/10.1039/C5RA16743D>
5. **Gaganpreet Kaur**, Tilak Raj, Navneet Kaur and Narinder Singh, A Biginelli-based organic nanoprobe for simultaneous estimation of tyramine and 1,2-diaminopropane: application in real samples, *New J. Chem.*, 2016, **40**, 10536-10544.
<https://doi.org/10.1039/C6NJ02196D>
6. **Gaganpreet Kaur**, Tilak Raj, Sonal Singhal, Navneet Kaur, Tricyclic dihydropyrimidine-based multifunctional organicnanoparticles for detection of Ag (I) ions and spermidine:Real-Time application, *Sensors and Actuators B*, 2018, **255**, 424–432.
<https://doi.org/10.1016/j.snb.2017.08.064>
7. **Gaganpreet Kaur**, Navneet Kaur, Estimation of sodium ions using easily engineered organic nanoparticles-based turn-on fluorescent sensor: Application in biological and environmental samples, *Sensors and Actuators B*, 2018, **265**, 134–141.
<https://doi.org/10.1016/j.snb.2018.02.063>

8. **Gaganpreet Kaur**, Amanpreet Singh, Ajnesh Singh, Navneet Kaur and Narinder Singh, Cobalt complexes of Biginelli derivatives as fluorescent probes for selective estimation and degradation of organophosphates in aqueous medium, *Dalton Trans.*, 2018, **47**, 5595-5606.
<https://doi.org/10.1039/C8DT00150B>
9. Vandna Dhanwal, Archana Katoch, Amanpreet Singh, Souneek Chakraborty, Mir Mohd Faheem, Gaganpreet Kaur, Debasis Nayak, Narinder Singh, Anindya Goswami, Navneet Kaur, Self-assembled organic nanoparticles of benzimidazole analogue exhibit enhanced uptake in 3D tumor spheroids and oxidative stress induced cytotoxicity in breast cancer, *Materials Science and Engineering: C*, 2019, **97**, 467-478.
<https://doi.org/10.1016/j.msec.2018.12.039>
10. **Gaganpreet Kaur**, Harpreet Kaur, Amanpreet Singh, Monika Chaudhary, Navneet Kaur, Narinder Singh and Kailash C. Jena, Multifunctional Receptor with Tunable Selectivity: A Comparative Recognition Profile of Organic Nanoparticles with Carbon Dots, *Chem Asian J.*, 2020, **15**, 2160–2165. DOI: [10.1002/asia.202000523](https://doi.org/10.1002/asia.202000523)

Review Articles

1. Navneet Kaur, **Gaganpreet Kaur**, Umesh A. Fegade, Amanpreet Singh, Suban K. Sahoo, Anil S. Kuwar, Narinder Singh, Anion sensing with chemosensors having multiple -NH recognition units, *Trends in Analytical Chemistry*, 2017, **95**, 86-109.
<https://doi.org/10.1016/j.trac.2017.08.003>

Conferences/Seminars/Symposium

A) Paper presented:

1. **Gaganpreet Kaur**, Navneet Kaur, “UV-Vis investigation of DNA intercalation ability of dihydropyrimidine derivatives and crystallographic analysis” in “CHASCON-2015”, at Panjab University, Chandigarh, India, 25/02/2015 to 27/02/2015.

2. **Gaganpreet Kaur**, Navneet Kaur, "Biginelli Compounds: synthesis, DNA intercalation ability and crystallographic analysis" in the "1st CRIKC Nanoscience day", at IISER, Mohali, on 21/07/2015.
3. **Gaganpreet Kaur**, Navneet Kaur, "Biginelli-based organic nanoparticles (ONPs) for bacterial recognition and as antibacterial agents" in the "International Conference on Nanoscience, Nanotechnology and Advanced Materials, NANOS-2015," held in GITAM University, Vishakhapatnam, India, 14/12/2015 to 17/12/2015.
4. **Gaganpreet Kaur**, Navneet Kaur, "Fluorescent Organic Nanoparticles (FONPs) based on Biginelli compound for bacterial recognition in aqueous medium and antibacterial activity" in "International Conference, Nanoscitech 2016", held in Panjab University, Chandigarh, India, 18/02/2016 to 20/02/2016.
5. **Gaganpreet Kaur**, Navneet Kaur, "Biginelli-based Fluorescent Organic Nanoparticles: bacterial recognition and antibacterial agents" at the "2nd CRIKC Nanoscience Day", held at IISER, Mohali, India, on 08/08/2016.
6. **Gaganpreet Kaur**, Navneet Kaur, "Biginelli-Based Fluorescent Organic Nanoparticles: bacterial detection and antibacterial activity" in "Achievements of Women in Science and Technology: Current Scenario and Future Prospects-AWSAT, 2017", held at Panjab University, Chandigarh, India, 13/01/2017 to 14/01/2017.
7. **Gaganpreet Kaur**, Navneet Kaur, "Organic Nanoparticles of Biginelli Derivative as Probe for Selective Detection of Biologically Relevant Analytes" in "Nanoscitech, November, 2017", held in Panjab University, Chandigarh, India, 09/11/2017 to 10/11/2017.
8. **Gaganpreet Kaur**, Navneet Kaur, "Organic Nanoparticles of Biginelli Derivative as Sensor for Selective Recognition of Metal Ions" in "International conference on Nanotechnology: Ideas, Innovations and Initiatives – 2017 (ICN3i-2017)", held in IIT Roorkee, Roorkee, India, 06/12/2017 to 08/12/2017.
9. **Gaganpreet Kaur**, Navneet Kaur, "Selective Recognition of Lithium Ions Using Organic Nanoparticles of Biginelli Derivative" in "RACES 2019", held in MM Modi College, Patiala, India, 11/04/2019 to 12/04/2019.

B) Attended

1. **Gaganpreet Kaur**, Navneet Kaur, Participated in the “International Conference on Nanoscience and Technology, ICONSAT-2014”, held at Panjab University, Chandigarh from 02/03/2014 to 05/03/2014.
2. Attended webinar on“Teachers for Future: Capacity Building Session” organized by Annammal College of Education for Women, Thoothukudi on 27.05.2020.
3. Participated in One day International webinar on“Post Covid Challenges Before Indian Education System” organized by CTEF and Multani Mal Modi College Patiala, held on 29.05.2020.

Workshops and training courses:

1. Attended a workshop on “Science Management and Administration” at IISER, Pune. (18-21, September 2017).
2. Attended UGC Sponsored Faculty Development Program at Multani Mal Modi College, Patiala. (July, 2019)
3. One Week International Faculty Development Programme on “Challenges in Restructuring the Innovative Teaching Learning Techniques” from 02.06.2020 to 08.06.2020 organized byAuxilium College, Vellore (Online).
4. 4-Week Induction/Orientation Programme for "Faculty in Universities/Colleges/Institutes of Higher Education" from June 04 - July 01, 2020 from Teaching Learning Centre, Ramanujan College, University of Delhi (Online).
5. Two Weeks Faculty Development Programme on "ADVANCED CONCEPTS FOR DEVELOPING MOOCS" from July 02 - July 17, 2020 from Teaching Learning Centre, Ramanujan College, University of Delhi (Online).

6. Seven Days Faculty Development Programme on “RESEARCH METHODOLOGY FOR SOCIAL SCIENCES” organized by Council For Teacher Education Foundation (CTEF) (Punjab & Chandigarh Chapter) & Multani Mal Modi College, Patiala from June 20-26, 2020 (Online).
7. Online workshop on “Behavioural Changes amid COVID-19: Issues & Redressal” organized by Internal Quality Assurance Cell of D.A.V. College, Jalandhar on 1st June 2020.
8. One Day International Virtual Conference on “Novel Corona and Novel Challenges: Life Ahead with Covid -19” organized by UGC Cell, Sri Guru Gobind Singh College, Chandigarh on 03 June, 2020.

Webinars

1. Online webinar on “Teachers for future - Capacity building Session” by Annammal College of Education for Women, Thoothukudi on May 27, 2020.
2. International Webinar on “Post COVID Challenges Before Indian Education System” by Council For Teacher Education Foundation (CTEF) (Punjab & Chandigarh Chapter) & Multani Mal Modi College, Patiala on May 29, 2020.
3. Webinar on “Nanotechnology for Environmental Remediation” organized by PG Department of Chemistry, D.A.V. College, Abohar on 2nd June, 2020.
4. National Webinar on “Creating Virtual Learning Environment” organized by Department of Education, Sri Guru Granth Sahib World University, Fatehgarh Sahib, Punjab on June 5, 2020.
5. International Webinar on “Production of Radionuclides and their Applications in Medical Imaging & Therapy”, organized by Chaudhary Bansi Lal University, Bhiwani, Haryana on 10th June, 2020.
6. National Webinar on “Paradigm Shift from Offline to Online teaching”, organized by KRMD.A.V. College, Nakodar on 13th June, 2020.
7. Webinar on “Stereochemistry” organized by PG Department of Chemistry, D.A.V. College, Abohar on 16th June, 2020.

8. Webinar on “Chemical Sensor” organized by PG Department of Chemistry, D.A.V. College, Abohar on 6th August, 2020.

Fellowships and Awards

1. Scored **45th rank in the All India** CSIR-UGC-NET exam held in June, 2013 and was awarded JRF and SRF fellowship by Council of Scientific and Industrial Research (CSIR), India for pursuing PhD.
2. **First** prize in poster with title “UV-Vis Investigation of DNA Intercalation Ability of Dihydropyrimidine Derivatives and Crystallographic Analysis” at CHASCON-2015, Panjab University, Chandigarh, India.
3. **First** prize in poster entitled “Fluorescent Organic Nanoparticles (FONPs) based on Biginelli Compound for Bacterial Recognition in Aqueous Medium and Antibacterial Activity” in the international conference “Nanoscitech 2016”, January, held in Panjab University, Chandigarh, India.
4. **First** prize in poster presentation entitled "Biginelli-Based Fluorescent Organic Nanoparticles: Bacterial Detection and Antibacterial Activity" in "Achievements of Women in Science and Technology: Current Scenario and Future Prospects-AWSAT, 2017", January, held in, Panjab University, Chandigarh, India.
5. **Second** prize in poster presentation entitled "Organic Nanoparticles of Biginelli Derivative as Sensor for Selective Recognition of Metal Ions" in "ICN:3I-2017", December held in IIT Roorkee, Roorkee, India.
6. **Second** prize in the 3 MinuteThesis oral presentation at an international workshop on “Science Management and Administration” held in September, 2018 at IISER, Pune, India.