

CURRICULUM VITAE

Dr. Dimple Kumari

Assistant Professor

Department of Chemistry,

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Education

PDF	Dept. of Chemistry, IIT Bombay
Ph.D. (Chemistry)	Dept. of Chemistry, DIAT Pune
M.Sc. (Organic Chemistry)	Patna University, Patna

Research/Teaching Experience

Position	Organization	Duration
Assistant Professor (Senior Grade)	COCAS, Patna	09 th Nov. 2021 to till date
Assistant Professor	COCAS, Patna	09 th Nov. 2017 to 08 th Nov. 2021
Research Associate	IIT Bombay	Dec. 2014 to Nov. 2016
Research Scholar (Ph.D.)	DIAT Pune	July 2009 to June 2014

Teaching Interests:

Organic Chemistry, Spectroscopy, Bio-organic Chemistry, Medicinal Chemistry, Nanomaterials, Green Chemistry

Research Interests:

Organic Synthesis, Energetic Materials and their formulations, Computational studies of organic compounds, Nano Chemistry

Ph.D Supervision: 01 (ongoing)

Research Projects (ongoing/completed): NIL

Summer Faculty Research Fellow

SFRF 2023 - IIT Delhi (16th May 2023 to 14th July 2023)

Mentor: Prof. Dibyajyoti Ghosh, Department of Materials Science and Engineering

Topic: Machine Learning approaches of Perovskites

Orientation/ Refresher Programmes

1. Refresher course in **Chemistry** organized by UGC - Malaviya Mission Teacher Training Centre, Pondicherry University, Puducherry during 1st to 14th August 2025.
2. Two weeks online refresher programme in **Chemistry** organized by Teaching Learning Centre, Ramanujan College, University of Delhi sponsored by MHRD-Pandit Madam Mohan Malviya National Mission on Teachers and Teaching during 28th April to 11th May 2024.
3. Refresher course in Chemistry organized by UGC-Human Resource Development Centre, Savitribai Phule Pune University, conducted by School of Chemical Sciences, Kavayitri Bahinabai Chaudhari North Maharashtra University, Jalgaon during 17th to 30th August 2021.
(Theme: Role of Teacher in Academics, Research & Industry).
4. Two weeks online refresher programme on “**Advanced Research Methodology Tools and Techniques**” organized by Teaching Learning Centre, Ramanujan College, University of Delhi sponsored by MHRD-Pandit Madam Mohan Malviya National Mission on Teachers and Teaching during 15th to 30th April 2021.
5. “84th Orientation Programme” organized by UGC–Human Resource Development Centre (UGC-HRDC), Patna University during 29 Nov. to 19 Dec., 2019.

Co-curricular Activities

1. **Coordinator, Department of Bio-Chemistry, COCAS, Patna** since July 2024
2. **College Coordinator of Concept Test in Chemistry (CONTECH)** (conducted by Association of Chemistry Teachers (ACT), C/o Homi Bhabha Centre for Science Education, Mumbai to assess the conceptual understanding in chemistry throughout the nation), COCAS Patna since 2018
3. **Member, Training and Placement Cell, COCAS, Patna**
4. **Executive Member, COCAS Teachers association (COCASTA)**
5. **Member, NAAC Committee (Research & Innovation), COCAS, Patna**

6. **IGNOU Academic Counselor-reg for MSCCHE Programme**
7. **Life Member**, Indian Science Congress Association (**L35913**)
8. **Life Member**, Association of Chemistry Teachers (**ACT**) (**2309**)
9. **Life Member**, Energetic Materials Society

Research Publications/Patents

(a) International Journals:

1. Sunil Kumar, Abhinay Thakur, Amit Kumar Mishra, Rajeev Kumar, Manickam Selvaraj, Arun Karnwal, **Dimple Kumari**, Anshuman Srivastava, Ubaid Ahmad Khan, Nidhi Asthana, Ambrish Singh, Laxman Singh, *Materials and processes in nanogenerators for energy harvesting: A review of chemical modification strategies and paradigms*, **Journal of Alloys and Compounds (Elsevier)**, **1044**, 184278, 2025.
2. Laxman Singh, Saravanakumar Balakrishnan, and **Dimple Kumari**, *Mechanistic Insights in Surface Engineering of Micro-/Nanocomposite Phase Change Materials for Thermal Energy Storage: A Review*, **Adv. Energy Sustainability Res. (Wiley)**, 2500067(1-28), 2025.
3. Purnima Justa, Nancy Jaswal, D.K. Gangwar, **Dimple Kumari**, Pramod Kumar, *Fabrication and In vitro Evaluation of Dox@FeSe Nanorods for Independent Photothermal and Chemotherapeutic Effects Toward Theranostic Cancer Treatment*, **Next Research (Elsevier)**, **2**, 100695 (1-9), 2025.
4. Sumit K. Shrivastava, Asita Kulshreshtha, Dharendra K. Chaudhary and **Dimple Kumari**, *A novel approach for phyto-synthesis of silver nanoparticles using floral extract of Punica granatum for potent anti-cancerous and antibacterial capabilities*, **Discover Nano (Springer nature)**, **20**:184, 2025.
5. Sumit K. Shrivastava, Asita Kulshreshtha, Dharendra K. Chaudhary, Rajesh K. Gangwar, Santpal Singh, Abhishek P. Tiwari, Shikha Srivastava, Monisha Banerjee, Saurabh Kumar, Shama Parveen, and **Dimple Kumari**, *Biomedical Applications of Phytosynthesized Silver Nanoparticles (AgNPs) Using Grewia Asiatica L. Berry Extract*, **Chemistry Select (Wiley)**, **9**, e202402741 (1-6), 2024.
6. Monika Monica, Reena Reena, Sukhjeet Singh, Suhaas Gupta, Stuti Tomar, Ravi Kant Choubey, S. Gaurav, Tejendra K. Gupta, **Dimple Kumari**, Sunil Kumar, *Study of time-resolved photoluminescence decay curves in Al- doped ZnO and Eu - doped Cd_{1-x}Zn_xS nanophosphors*, **Applied Physics A (Springer)**, 129:795, 2023.
7. **Dimple Kumari** and Shaibal Banerjee, *Rheological studies of energetic binder-plasticizer blends*, **Materials Research Innovations (Taylor & Francis)**, 25 (7), 434-441, 2021.
8. **Dimple Kumari** and Shaibal Banerjee, *1,2,3-Triazoles by Click Chemistry Using Azido Esters as a Precursor*, **Propellants Explosives Pyrotechnics (Wiley)**, 45, 1845-1852, 2020.
9. Santosh J Gharpure, Laxmi Narayan Nanda and **Dimple Kumari**, *Enantiospecific Total Synthesis of (+)- 3-Epi-Epohelmin A using Nitrogen Substituted Donor- Acceptor (D-A) Cyclopropane*, **European Journal of Organic Chemistry (Wiley)**, 3917-3920, 2017.

10. Vaishali Rawat, Rohini Kitture, **Dimple Kumari**, Harsh Rajesh, Shaibal Banerjee and S.N. Kale, Hazardous materials sensing: *An electrical metamaterial approach*, **Hazardous materials sensing: An electrical metamaterial approach, Journal of Magnetism and Magnetic Materials (Elsevier)**, 415, 77-81, **2016**.
11. **Dimple Kumari**, Anjitha S. G., Chandra Shekhar Pant, Mahendra Patil, Haridwar Singh, and Shaibal Banerjee, *Synthetic approach to novel azido esters and their utility as energetic plasticizers*, **RSC Advances (RSC)**, 4 (75), 39924-39933, **2014**.
12. **Dimple Kumari**, K. Durga Bhaskar Yamajala, Haridwar Singh, Rakesh Ramesh Sanghavi, Shri Nandan Asthana, K. Raju and Shaibal Banerjee, *Application of azido esters as energetic plasticizers for LOVA propellant formulations*, **Propellants explosives pyrotechnics (Wiley)**, 38, 805-809, **2013**.
13. **Dimple Kumari**, Haridwar Singh, Mahendra Patil, Walter Thiel, Chandra Shekhar Pant and Shaibal Banerjee, *Synthesis, characterization, Thermal and Computational studies of tetra azido esters as energetic plasticizers*, **Thermochimica Acta (Elsevier)**, 562, 96-104, **2013**.
14. **Dimple Kumari**, Ravikant Balakshe, Shaibal Banerjee and Haridwar Singh, *Energetic Plasticizers for Gun and Rocket Propellants*, **Review Journal of Chemistry (Springer)**, 2(3), 240-262, **2012**.
15. Rajesh K. Gangwar, Vinayak A. Dhumale, **Dimple Kumari**, Umesh T. Nakate, S.W. Gosavi, Rishi B. Sharma, S.N. Kale, Suwarna Datar, *Conjugation of curcumin with PVP capped gold nanoparticles for improving bioavailability*, **Materials Science and Engineering C (Elsevier)**, 32, 2659–2663, **2012**.

(b) Patent:

1. Shaibal Banerjee and **Dimple Kumari**, Tetra azido ester of phthalate analogue and method of synthesis thereof, 1953/MUM/2013.

Conferences (Participation/poster/oral)

1. Participated in Two days workshop on **Green Chemistry for Sustainable Synthesis** at IIT, Patna on 20th Dec-21st December 2024.
2. Participated in one day workshop on **fluorescence Application in Biotechnology, Nanoscience and Nanomedicines** at AKU, Patna on 17 October 2022.
3. Participated in Women Scientists and Entrepreneur Conclave, India International Science Festival (DST) held virtually during 22nd – 25th Dec 2020.
4. Participated in 1st International Conference on Recent Developments in Organic and Applied Chemistry 2020 (RDOAC-2020) virtually organized by KIIT University, Bhubneshwar during 06th- 07th July 2020.
5. Participated in the National Webinar on “Nurturing Research Culture and Enhancing Teaching Learning through the Star College Scheme of DBT” held on 17th – 18th June 2020, organized by the Faculty of Science, Patna Women’s College, Autonomous (Patna University).
6. Participated in 106th Indian Science Congress, LPU Jalandhar during 3rd -8th Jan 2019.
7. **Dimple Kumari**, Decoration of Gold Nanoparticles on Carbon Nanotubes for glucose sensor, 7th Bihar Science Congress, COCAS Patna during 4th – 6th Dec 2018.

8. Participated in Women Scientists and Entrepreneur Conclave, India International Science Festival (DST), Lucknow, 5th -8th Oct 2018.
9. **Dimple Kumari**, Studies of LOVA gun propellant formulations based on two novel energetic plasticizers, National seminar on research frontiers in 21st century, BN College Patna, 28th May 2018.
10. Participated in International Conference of Organic Synthesis (ICOS) held at IITB, Mumbai during 11th to 16th Dec. 2016
11. **Dimple Kumari**, Haridwar Singh and Shaibal Banerjee, Energetic 1,2,3-Triazoles by Click Chemistry: Synthesis and Characterizations, 9th International conference high energy materials and exhibit, VSSC, Thiruvananthapuram, India, Feb 13-15, 2014.
12. Kanaka Durga Bhaskar Yamajala, **Dimple Kumari**, Deepak Kumar, Hema Singh and Shaibal Banerjee, Chalcogens containing high energy materials, NC³-2013, DIAT, Pune.
13. Ch.N.Rao, **Dimple Kumari**, Shaibal Banerjee, S. N. Kale, LiTaO₃-End Coated Optical fiber Coupler as Gas / Chemical Sensor, NTA FM-2013, NCL, Pune.
14. **Dimple Kumari**, Haridwar Singh and Shaibal Banerjee, Click Chemistry, A Powerful Tool for Defence Applications, 1st International Conference on Functional Materials for Defence (ICFMD-2012), DIAT, Pune.
15. **Dimple Kumari**, Haridwar Singh and Shaibal Banerjee, Synthesis and characterization of polyazido compounds, 8th International conference high energy materials and exhibit, TBRL, Chandigarh, India, 10-12 Nov., 2011.
16. Shaibal Banerjee and **Dimple Kumari**, Theoretical studies on Triazole, 8th International conference high energy materials and exhibit, TBRL, Chandigarh, India, 10-12 Nov., 2011.

Faculty Development Programmes

1. Online faculty development programme on “Research and Career” organized by Vimala College, Thrissur, Kerala under DBT Star College Programme during 19-23 October, 2020.
2. Six days online workshop on “Fundamental of Research Methodology for Science & Allied Subjects” organized by IQAC–AN College Patna during 24-29 August, 2020.
3. One week online faculty training programme on “Pedagogical Training for Effective Online Teaching & Learning” organized by DDU College, University of Delhi in association with KTHM College Nashik under IQAC & DBT Star College Programme during 03-10 August, 2020.
4. One week online national workshop on “Learning Management System: Moodle” organized by Teaching Learning Centre, SNDT Women’s University Mumbai sponsored by MHRD-Pandit Madam Mohan Malviya National Mission on Teachers and Teaching during 27 July – 02 August, 2020.
5. Five days online faculty development programme on “Moodle – Learning Management System” organized by CIMAGE Professional College Patna in Association with IIT Bombay through spoken tutorials during 22-26 June 2020
6. Ten days online faculty development programme on “Libre Office Impress” organized by IQAC, COCAS Patna in Association with IIT Bombay through spoken tutorials during 08-17 June 2020.
7. One week online faculty development programme on “Open Source Tools for Research” organized by Teaching Learning Centre, Ramanujan College, University of Delhi

sponsored by MHRD-Pandit Madam Mohan Malviya National Mission on Teachers and Teaching during 08-14 June 2020.

8. Twelve days online faculty development programme on “SCILAB (Scientific Laboratories)” organized by IQAC, AN College Patna in Association with IIT Bombay through spoken tutorials during 22 May- 02 June, 2020.

Programmes/Events Organized

1. A programme on “Women Empowerment in Science and Technology” on the occasion of IUPAC-Global Women’s Breakfast 2024 organized virtually on 27th February, 2024. (Role: Convener)
2. Concept Test in Chemistry (CONTECH)- 23rd Feb 2024 (2023-2024)
3. IPR Awareness Program under NIPAM organized virtually on 19th July 2023. (Role: Coordinator)
4. A programme on “Women Empowerment in Education” on the occasion of IUPAC-Global Women’s Breakfast 2021 organized virtually on 09 February, 2021. (Role: Convener)
5. An online quiz competition on “COVID-19 & GENERAL AWARENESS” organized virtually in June 2020. (Role: Convener)
6. Faculty development programme on “Libre Office Impress” organized by IQAC, COCAS Patna in Association with IIT Bombay through spoken tutorials during 08-17 June 2020. (Role: Organizing Committee)
7. International Year of Periodic Table of Chemical Elements-2019 organized at COCAS, Patna on 28 November, 2019. (Role: Programme Coordinator)
8. Concept Test in Chemistry (CONTECH)- 9th Nov 2019 (2019-2020)
9. Concept Test in Chemistry (CONTECH)- 2nd Feb 2019 (2018-2019)
10. Annual Educational Trip for M.Sc. students to visit SAIF, IIT Patna, since 2018

Awards/Achievements

- ❖ Awarded by Chief Minister of Bihar, Smt. Rabri Devi in Khel Samman Samaroh 2000
- ❖ Bronze medal in Taekwondo in 5th National Games, held at Manipur during 14th-25th Feb. 1999
- ❖ Silver medal in 16th women’s National Taekwondo Championship, held at Bangalore, Karnataka, 25th-26th Nov. 1998
- ❖ CSIR – NET (LS) (Chemical Sciences) 2006
- ❖ CSIR- JRF and NET (Chemical Sciences) 2008
- ❖ GATE (Chemistry) 2010

Date: 25.11.2025

Place: Patna

(Dr. Dimple Kumari)