



# BHAGINI NIVEDITA COLLEGE (UNIVERSITY OF DELHI)

Kair, Near Najafgarh, New Delhi - 110043

## Faculty Details proforma for College Web-site

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| Title                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Dr.                                                                                                                                                                                                                                      | First Name | Prabhat | Last Name | Kumar | Photograph |
| Designation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Assistant Professor                                                                                                                                                                                                                      |            |         |           |       |            |
| Address                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 24/12, Munirkakunj, Dinpur, Najafgarh, N.D.-110043                                                                                                                                                                                       |            |         |           |       |            |
| Phone No Office                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                          |            |         |           |       |            |
| Residence                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 9599673215                                                                                                                                                                                                                               |            |         |           |       |            |
| Mobile                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 9958033469                                                                                                                                                                                                                               |            |         |           |       |            |
| Email                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | <a href="mailto:prabhat.yadav.trf18@nsut.ac.in">prabhat.yadav.trf18@nsut.ac.in</a><br><a href="mailto:prabhat.yadav@bn.du.ac.in">prabhat.yadav@bn.du.ac.in</a><br><a href="mailto:erprabhatmtech@gmail.com">erprabhatmtech@gmail.com</a> |            |         |           |       |            |
| Web-Page                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <a href="https://www.linkedin.com/in/dr-prabhat-kumar-yadav-phd-61255023">linkedin.com/in/dr-prabhat-kumar-yadav-phd-61255023</a>                                                                                                        |            |         |           |       |            |
| Educational Qualifications                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                          |            |         |           |       |            |
| Degree                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Institution                                                                                                                                                                                                                              |            |         |           | Year  |            |
| B.Sc.(Hons.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Indira Gandhi National Open University, New Delhi                                                                                                                                                                                        |            |         |           | 2009  |            |
| M.Sc.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Japan Advanced Institute of Science and Technology, Japan                                                                                                                                                                                |            |         |           | 2012  |            |
| M.Tech.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | University of Delhi, Delhi                                                                                                                                                                                                               |            |         |           | 2012  |            |
| Ph.D.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Netaji Subhas University of Technology, Delhi                                                                                                                                                                                            |            |         |           | 2022  |            |
| Career Profile                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                          |            |         |           |       |            |
| Principal Scientist with 10+ years of experience as organic chemist turned medicinal chemist for oncology and neurology drug discovery and development. Pronounced background in nanomedicine and targeted drug delivery therapy. Significant experience in problem-solving as well as study management in a GLP environment. Strong history of facilitating cross-functional co-operation. Effective team leader who encourages initiative, independence, and personal decision-making. Recognized as a quick learner and effective problem solver with sound scientific judgment, dedicated to the demands of society. Familiar with ICH Guidelines, FDA, Pharmacopeia, NABL, GLP and EHS guidelines. Assisted in Supervision of 05+ Ph.D. students in Chemistry. |                                                                                                                                                                                                                                          |            |         |           |       |            |
| Administrative Assignments                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                          |            |         |           |       |            |
| N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                          |            |         |           |       |            |
| Areas of Interest / Specialization                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                          |            |         |           |       |            |
| Nanotechnology, Biomaterials, Supramolecular Chemistry, Tissue-Engineering,                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                          |            |         |           |       |            |
| Subjects Taught                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                          |            |         |           |       |            |
| Organic Chemistry, Green Chemistry, Biomaterials, Nanomedicine                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                          |            |         |           |       |            |
| Time table of the subjects taught during the current semester                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                          |            |         |           |       |            |



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| S.No.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Subject                   | Days                      | Time                      | Classroom                 |
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| Research Guidance                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                           |                           |                           |                           |
| Informal assistance in Supervision of 15+ Ph.D. students in Chemistry.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                           |                           |                           |                           |
| Publications Profile                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                           |                           |                           |                           |
| <p>1. Prabhat Kumar, Purnima Jain, Anjana Sarkar.<br/>"Green synthesis of reduced grapheneoxide nanosheet by using ascorbic acid and study of its cytotoxicity on human cervical cancer cell line." <i>Journal of Polymer Materials: An International Journal</i>, 2022; 39(1- 2)<br/><br/><a href="https://doi.org/10.32381/JPM.2022.39.1-2.8">https://doi.org/10.32381/JPM.2022.39.1-2.8</a> (I.F =1.5)</p> <p>2. Prabhat Kumar, Purnima Jain and Anjana Sarkar.<br/><br/>"Binary Solvent-assisted Graphene synthesis by Direct Exfoliation of Graphite Powder and its Cytotoxicity on SiHa Cell line" <i>Indian Journal of Pharmaceutical Education and Research</i>, 2022; 56(3): 732- 739 <a href="https://doi.org/10.5530/ijper.56.3.122">https://doi.org/10.5530/ijper.56.3.122</a> (I.F =1.8)</p> <p>3. Neetika Singh, Sumit Singh, Prabhat Kumar, and Ufana Riaz.<br/>"A comparison of experimental and theoretical studies of benzoquinone modified poly (thiophene):effect of polymerization techniques on the structure and properties." <i>RSC Advances</i> 10, no. 61 (2020): 37456-37462. <a href="https://doi.org/10.1039/D0RA07714C">https://doi.org/10.1039/D0RA07714C</a> (I.F =4.036)</p> <p>4. Ufana Riaz, Neetika Singh, and Prabhat Kumar.<br/>"Ultrasound-assisted synthesis of fluorescent oligomers of triphenylamine modified polyquinones: A comparison of experimental and computational spectral studies." <i>Journal of Molecular Structure</i>(2020): 128374. <a href="https://doi.org/10.1016/j.molstruc.2020.128374">https://doi.org/10.1016/j.molstruc.2020.128374</a> (I.F =3.841)</p> <p>5. Neetika Singh, Arish Mohd, Prabhat Kumar, Rub Abdur, and Riaz Ufana.<br/>"Experimental and Theoretical Studies of Novel Azobenzene Functionalized Conjugated Polymers: In- vitro Antileishmanial Activity and Bioimaging." <i>Scientific Reports</i> 10, no. 1 (2020). <a href="https://doi.org/10.1038/s41598-019- 56975-x">https://doi.org/10.1038/s41598-019- 56975-x</a> (I.F =4.996)</p> <p>6. Anurakshee Verma, Prabhat Kumar, and Ufana Riaz.<br/>"Biodegradable Polymers in ControlledDrug Delivery Systems." <i>Book:- Applications of Encapsulation and Controlled Release</i> (2019): 131. <a href="https://doi.org/10.1201/9780429299520">https://doi.org/10.1201/9780429299520</a></p> <p>7. Neetika Singh, Prabhat Kumar, Raj Kumar, Elham S. Aazam, and Ufana Riaz.<br/>"Developmentof a near infrared novel bioimaging agent via co-oligomerization of Congored with anilineand o - phenylenediamine: experimental and theoretical studies." <i>RSC advances</i> 9, no. 62 (2019): 36479-36491. <a href="https://doi.org/10.1039/C9RA05814A">https://doi.org/10.1039/C9RA05814A</a> (I.F =4.036)</p> |                           |                           |                           |                           |



8. Ufana Riaz, S. M. Ashraf, Sapana Jadoun, Vaibhav Budhiraja, and Prabhat Kumar.  
"Spectroscopic and Biophysical Interaction Studies of Water-soluble Dye modified poly (o-phenylenediamine) for its Potential Application in BSA Detection and Bioimaging."  
*Scientific reports* 9, no. 1 (2019): 8544. <https://doi.org/10.1038/s41598-019-44910-z> (I.F =4.996)
9. Neetika Singh, Prabhat Kumar, Raj Kumar, and Ufana Riaz.  
"Ultrasound-Assisted Polymerization of Dyes with Phenylenediamines: Facile Method To Design Polymeric Photosensitizers with Enhanced Singlet Oxygen Generation Characteristics and Anticancer Activity." *Industrial & Engineering Chemistry Research* 58, no. 31 (2019): 14044- 14057.  
<https://doi.org/10.1021/acs.iecr.9b01275> (I.F =4.326)
10. Neetika Singh, Prabhat Kumar, and Ufana Riaz.  
"Applications of near infrared and surface enhanced Raman scattering techniques in tumor imaging: A short review." *Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy* 222 (2019): 117279. <https://doi.org/10.1016/j.saa.2019.117279> (I.F =4.098)
11. Ufana Riaz, Sapana Jadoun, Prabhat Kumar, Raj Kumar, and Nitin Yadav.  
"Microwave- assisted facile synthesis of poly (luminol-cophenylenediamine) copolymers and their potential application in biomedical imaging." *RSC advances* 8,no.65(2018):37165-37175. <https://doi.org/10.1039/C8RA08373H> (I.F =4.036)
12. Sandeep Kumar, Nitin Yadav, Prabhat Kumar, and Ashok K. Ganguli.  
"Design and comparative studies of Z-Scheme and type II based heterostructures of NaNbO<sub>3</sub>/CuInS<sub>2</sub>/In<sub>2</sub>S<sub>3</sub> for efficient photoelectrochemical applications." *Inorganic chemistry* 57, no.24(2018):15112-15122.  
<https://doi.org/10.1021/acs.inorgchem.8b02264> (I.F =5.436)
13. Rashmin Khanam, Raj Kumar, Iram Iqbal Hejazi, Syed Shahabuddin, Ramovatar Meena, Vikrant Jayant, Prabhat Kumar, Abdul Roouf Bhat, and Fareeda Athar.  
"Piperazine clubbed with 2-azetidinone derivatives suppresses proliferation, migration and induces apoptosis in human cervical cancer HeLa cells through oxidative stress mediated intrinsic mitochondrial pathway."  
*Apoptosis* 23, no. 2 (2018): 113-131.  
<https://doi.org/10.1007/s10495-018-1439-x> (I.F =4.677)
14. Ufana Riaz, Sapana Jadoun, Prabhat Kumar, Mohd Arish, Abdur Rub, and S.M. Ashraf.  
"Influence of Luminol Doping of Poly (ophenylenediamine) on the Spectral, Morphological, and Fluorescent properties: A Potential Fluorescent Marker for Early detection and Diagnosis of Leishmania donovani."



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*ACS applied materials & interfaces* 9, no. 38 (2017): 33159-33168.

<https://doi.org/10.1021/acsami.7b10325> (I.F =10.38)

15. Maurya, V. K., P. Kumar, and S. Patnaik.

"Anti-ferromagnetism through Mn doping in topological insulator Bi<sub>2</sub>Se<sub>3</sub>."

*AIP Conference Proceedings*, vol. 1665, no. 1, p. 130041. AIP Publishing LLC, 2015.

<https://doi.org/10.1063/1.4918189>

### Acknowledged Publications

16. Singh, Reema, and Ranjana Arya.

"GNE myopathy and cell apoptosis: a comparative mutation analysis." *Molecular neurobiology* 53, no. 5 (2016): 3088-3101.: **Acknowledged** <https://doi.org/10.1007/s12035-015-9191-5>

17. Rao, Kongara Hanumantha, Swagata Ghosh, and Asis Datta.

"Env7p Associates with the Golgin Protein Imh1 at the trans- Golgi Network in *Candida albicans*."

*MSphere* 1, no. 4 (2016): **Acknowledged**

<https://doi.org/10.1128/msphere.00080-16>

18. Babuta, Mrigya, M. Shahid Mansuri, Sudha Bhattacharya, and Alok Bhattacharya.

"The *Entamoeba histolytica*, Arp2/3 complex is recruited to phagocytic cups through an atypical kinase EhAK1." *PLoS pathogens* 11, no. 12 (2015): e1005310: **Acknowledged**

<https://doi.org/10.1371/journal.ppat.1005310>

19. Jain, Manish Kumar, and Rajiv Bhat. "Modulation of human  $\alpha$ -synuclein aggregation by a combined effect of calcium and dopamine."

*Neurobiology of disease* 63 (2014): 115-128: **Acknowledged** <https://doi.org/10.1016/j.nbd.2013.11.004>

### Publications in the Last one year

Impact of rice husk, banana peel and eggshell as biodegradable adsorbent for heavy metal treatment of industrial wastewater

Authors: Ruby Mishra, Sanjeev Kumar Mishra, Neerja Khaneja, **Prabhat Kumar**, Shilpi Saxena, Sangeeta Banga, Priti Gupta, Bhupendra Singh

***Asian Journal of Water, Environment and Pollution -Communicated...***

### Conference Organization/ Presentations (in the last three years)

Water as a Universal Solvent in Pharmaceutical Industry for sustainable development

Department of Chemistry , Bhagini Nivedita College , Najafgarh – 110043

Kruti Satpathy , Poonam Mothsra , Surashree Sarma , Neerja Khaneja , **Prabhat Kumar\***

***Oct. 2024, Gargi College, University of Delhi, Delhi***



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| Research Projects (Major Grants/Research Collaboration)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| NA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Awards and Distinctions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| JASSO International Exchange Awards-2010 for JAPAN.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Association With Professional Bodies                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <p>Reviewer in Journal of Carcinogenesis, Oxford University Press, London, UK.</p> <ul style="list-style-type: none"><li>• Reviewer in Indian Journal of Pharmaceutical Education and Research, Bangalore, India.</li><li>• Lifetime member in Materials research Society, MRS, USA</li><li>• Lifetime member in Graphene research society, Europe.</li><li>• Life time member of FDA, USA.</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Other Activities                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <p><b>Work History:</b></p> <ul style="list-style-type: none"><li>• <b>Principal Scientist, Discovery Research, Jan- 2023 to October-24</b><br/><br/><b>Sun Pharmaceutical Industries Ltd., Gurugram Campus - 122022, Haryana, India.</b><br/>Led a research team of 10 scientists to develop analogues of fisetin as a drug for cancer therapy and neurological disorder treatment successfully to meet key milestones.</li><li>• <b>Senior Research Scientist, Development Research, Jan-2020 to Dec. 2022</b><br/><b>Crystal Crop Protection Ltd., Shalimar Bagh, New Delhi – 110088, Delhi, India.</b><br/>Led a research team of 5 scientists to Synthesize reference standard materials for different pesticides. Discovery and Development of Neem oil coated Nano Urea to meet key target on demand.</li><li>• <b>Senior Research Associate, Jan-2017 to Dec.-2019</b><br/><b>Department of Biotechnology (DBT), Govt. of India.</b><br/><b>Place- Jawaharlal Nehru University, New Delhi- 110067.</b><br/>Results analysis and scientific writing for research publications in different peer reviewed journal. Schrodinger Life Science suite demonstration for Anticancer drug.</li><li>• <b>Research Associate, Jan-2014 to Dec.-2017 Department of Biotechnology (DBT), Govt. of India.</b></li></ul> <p><b>Place- Jawaharlal Nehru University, New Delhi- 110067.</b></p> <p>Analytical Chemistry.<br/>Develop various analytical methods for UPLC/LCMS characterization of in-process reactions and compound purity. Maintain general instrument maintenance on both Agilent and Waters LC/LCMS and MALDI-TOF-TOF systems. Developed several analytical methods for rapid analysis of compound purity and in-process chemical reactions. Synthesis, analysis, purification, isolation, and characterization of various compounds including SAR targeted designed compounds for targeted disease pathways, elucidated impurities from synthetic and/or extractable/ leachable processes, Peptide/Oligonucleotide targets and reference standards, and various intermediate/SM in-house syntheses. Performed complex troubleshooting and assisted in leading initiatives to solve challenging scientific problems with assays or</p> |



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instrumentation. Design and execution of multi-step syntheses up to process-scale. Purification and characterization of intermediates and final products.

Target identification- Lead identification- Lead optimization- Preclinical Studies for anticancer drug and anti-malarial drug through Schrodinger Life Science Suite and Cell line studies.

• **Senior Research Fellow**, Aug.-2012 to Dec.-2013.

**Department of Biotechnology (DBT), Govt. of India.**

**Place- Jawaharlal Nehru University, New Delhi- 110067.**

Planned and conducted experiments for medicinal chemistry research in the areas of Inflammation, Pain, Osteoarthritis, Cancer, and Cardiovascular indications. Identified new structural series for 3 different disease pathways and prepared the zwitterionic crystalline prodrug which led to the identification of a drug candidate.

Streamlined the synthetic pathway towards targeted compounds while dramatically increasing final yields.

Signature of Faculty Member

- You are also requested to also give your complete resume as a DOC or PDF file to be attached as a link on your faculty page.