

Dr. Eti Sharma

Assistant Professor

School of Biotechnology

Gautam Buddha University

Greater Noida, India

Mobile no. +918527996161

Email: etibiotech@gmail.com, etisharma.ocfd.gbu.ac.in

Work Experience

- August 2022-Present: Assistant Professor (OCFD), School of Biotechnology, Gautam Buddha University, Greater Noida
- 2016-2017: Research Associate, ICGEB, New Delhi
- 2008-2009: Lecturer, DAV College

Education

- Ph.D. (Molecular Biology & Biotechnology) 2015, G.B. Pant University of Agriculture & Technology, Pantnagar
- M.Sc. (Biochemistry) 2008, Gold Medalist, CCS University, Meerut
- B.Sc. (Botany, Zoology, Chemistry) 2006, CCS University, Meerut
- PGDIR, PG diploma in IPR, IGNOU, New Delhi

Awards, Fellowships and Other Achievements:

- Awarded DST INSPIRE Fellowship- 2011, Department of Science and Technology, New Delhi
- UGC-CSIR NET(JRF) Life Science-65th Rank (2009,2011)
- ARS NET-Basic Plant Science (2010)
- GATE Life Science (2010)
- Gold Medalist in M.Sc. Biochemistry, at university level
- Awarded Laxmi Chand Memorial Gold Medal (First position, M.Sc. Biochemistry)
- Maximum marks in Biology in Board examination in 12th standard

Research Area

Bioprospecting and metabolomics of medicinal plants, Plant biotechnology, Plant-microbe interactions studies.

Driven by a strong background in bioprospecting and metabolomics of medicinal plants, my research focuses on exploring their pharmaceutical potential. During my PhD, I worked on gene isolation and cloning of rate-limiting genes involved in secondary metabolite production and their analysis. My interdisciplinary approach integrates molecular biology, biochemistry, metabolomics and nanobiotechnology to enhance the medicinal and industrial utility of plant-based compounds. My current research focuses on plant-microbe interactions, particularly exploring the role of the plant-associated microbiome in the production of pharmaceutically significant bioactive compounds. Building on my background in bioprospecting and metabolomics of medicinal plants, I investigate how microbial communities influence secondary metabolite biosynthesis. By understanding these complex interactions, I aim to develop innovative strategies for sustainable bioproduction of valuable pharmaceuticals

Publications

1. Nisha Gaur, Aayush Kumar, **Eti Sharma** (2023) Solar energy-based water purification system: Process modelling and real time study. International journal of environmental protection, 43(11) ISSN: 2224-7777
2. Sandeep Kumar, **Eti Sharma**, Gunjan Garg (2023) Therapeutic uses of Vitex negundo leaves in glycaemia control. Journal of medicinal plant studies, 11(1): 126-129 ISSN: 2394-0530
3. AK Gaur & **Eti Sharma** (2019) Biological Approaches for Sustainable Utilization of Aconitum: A Genus Containing Valuable Medicinal Properties. Genomics & Gene Therapy International Journal (2019). 3:1, DOI: 10.23880/ggtij-16000110. ISSN: 2642-1194
4. **Eti Sharma**, Saurabh Pandey and A.K Gaur (2016) In silico characterization and differential expression pattern analysis and of conserved HMG CoA reductase domain isolated from Aconitum balfourii Stapf. 3 biotech 6:89 DOI 10.1007/s13205-016-0405-y ISSN: 2190-5738
5. **Eti Sharma**, Saurabh Pandey and A.K Gaur (2016) Identification and expression analysis of DXS1 gene isolated from Aconitum balfourii Stapf. Acta Physiol Plant (2016) 38:233 DOI 10.1007/s11738-016-2239-y ISSN: :0137-5881/1861-1664
6. **Eti Sharma**, A.K.Gaur (2014) Optimization of DNA isolation protocol of Aconitum balfourii Stapf. : A rare medicinal herb of Himalayan alpine, Indian Journal of Biotechnology 13:62-66 ISSN: 0972-5849
7. **Eti Sharma**, Anshita Goel and A.K.Gaur (2014) Effect of precursors and inhibitors on aconitine accumulation in in vitro root cultures of Aconitum balfourii Stapf., Plant Physiology Reports, 19(4):375-381. ISSN: 0974-0252
8. Upma Dhobal, **Eti Sharma**, S.Kumar and A.K.Gaur (2014) In vitro Conservation Efforts for Some Imperative Medicinal Plants of Northwest Himalayas for Sustainable Utilization. Vegetos, 27(2):254-265 ISSN: 2229-4473
9. Upma Dhobal, Manish Dev Sharma, Prashant Singh, **Eti Sharma**, Sundip Malik and A. K. Gaur (2013) Optimization of conditions for micropropagation of two commercial Sugarcane cultivars CoPant 03220 and CoPant 05224. Journal of cell and Tissue Research, 13(3) 3921-3926, ISSN:0973-0914
10. **Eti Sharma**, Khushhaal Gaur. Himanshu Punetha, A. K.Gaur(2012) In vitro regeneration of A. balfourii Stapf., a rare medicinal herb from Himalayan alpine through root explants.” Research Journal of Medicinal Plants, 6(4): 318-325. ISSN: 2151-7924
11. **Eti Sharma**, A.K. Gaur (2012) Aconitum balfourii Stapf: A Rare Medicinal Herb from Himalayan Alpine, Journal of Medicinal Plant Research, 6(22):3810-3817
12. Manju Chauhan, **Eti Sharma** and R. K. Singhal (2012) Characterization and effect

of salt stress on protein. phosphatases in soybean (Glycine max). Biochemical and Cellular Archives,12(1):57

Edited Books:

1. Nisha Gaur, **Eti Sharma**, Tuan Anh Nguyen, Muhammad Bilal, Niranjana Prakash Melkania, Global Impacts of Micro- and Nano-Plastic Pollution(2024) ISBN13: 9798369334478|ISBN13, , DOI: 10.4018/979-8-3693-3447-8
2. Nisha Gaur, **Eti Sharma**, Tuan Anh Nguyen, Muhammad Bilal, Niranjana Prakash Melkania, (2025) Societal and Environmental Ramifications of Plastic Pollution ISBN13: 9798369391631, DOI: 10.4018/979-8-3693-9163-1

Book Chapters:

1. Aaradhya Pandey, Pragya Tiwari, **Eti Sharma** Role of nano fertilizers in sustainable agriculture, Wiley Science (Accepted)
2. **Eti Sharma**, Nisha Gaur, Aaradhya Pandey, Yashika Sharma (2025) Recycling Biosolids into Agriculture: Prospects and Challenges, Agricultural Nutrient Pollution and Climate Change, Springer nature, ISBN: 978-3-031-80912-5 DOI: 10.1007/978-3-031-80912-5_9
3. Kartavya Mathur, **Eti Sharma** and Nisha Gaur (2024) Sustainable plant disease protection using ML and DL, Hyperautomation in Precision Agriculture. DOI: <https://doi.org/10.1016/B978-0-443-24139-0.00008-4>, Elsevier ISBN: 978-0-443-24139-0
4. Aayushi Singh, Nisha Gaur and **Eti Sharma** (2024)Circular economy approach for production of value-added products from wastewater, Nanotechnology to Monitor, Remedy, and Prevent Pollution, <https://doi.org/10.1016/B978-0-443-15660-1.00016-2>. ISBN: 978-0-443-15660-1
5. Ridhi Pandey, Nisha Gaur, **Eti Sharma** (2024) Bioenergy production and wastewater treatment: case studies analysis, Biotechnologies for Wastewater Treatment and Resource Recovery. Biotechnologies for Wastewater Treatment and Resource Recovery DOI: <https://doi.org/10.1016/B978-0-443-27376-6.00020-7> ISBN: 978-0-443-27376-6
6. Kartavya Mathur, **Eti Sharma**, Nisha Gaur, Shashank Mittal and Shubham Kumar (2024) Computational Approaches for Identification of Micro/NanoPlastic Pollution, Global Status of micro.nanoplasticpollution, DOI: 10.4018/979-8-3693-3447-8.ch005 ,ISBN13: 9798369334478|ISBN13
7. Ayan Sheikh, Vaishnavi Shrivastava, **Eti Sharma**, Nisha Gaur, Shubham Kumar, Shashank Mittal(2024) Global Status of Micro/Nano-Plastic Pollution and Its Effect on Climate Change, Societal and Environmental Ramifications of Plastic Pollution,DOI: 10.4018/979-8-3693-9163-1.ch001, ISBN13: 9798369391631

8. Ridhi Pandey, Aaradhya Pandey, Nishtha Kaushik, Nisha Gaur, **Eti Sharma**, Andrea Naziri(2024) Phenotypic and Genotypic Alterations in Plants in Response to Micro/Nano-Plastics, Global Impacts of Micro- and Nano-Plastic Pollution, DOI: 10.4018/979-8-3693-3447-8.ch007 ISBN13: 9798369334478|ISBN13
9. Tushar Tiwari, Divya Pratap Nain, Nisha gaur, **Eti Sharma**(2024) Countering Aminoglycoside Modifying Enzymes: Inhibitory Strategies, Contemporary Approaches to Mitigating Antibacterial Drug Resistance, Publisher: IGI global, DOI: 10.4018/979-8-3693-1540-8.ch005 ISBN: 9798369315408
10. Rakshita Chaudhary, Nisha Gaur, **Eti Sharma**(2024)Antibiotics and Ecological Disruption: Exploring Alternative Approaches, Frontiers in Combating Antibacterial Resistance, DOI: 10.4018/979-8-3693-4139-1.ch005 ISBN: 9798369341391

Popular Articles:

1. Aishwarya Sharma, Aaradhya Pandey, **Eti Sharma (2025)** Advancing Agricultural Sustainability with Endophytic Nanotechnology. *Vigyan Varta, Special issue 5*
2. **Eti Sharma** & A. K. Gaur. Molecular Farming through Chloroplast transformation & Their Benefits. *Biotech Today* (2011) Vol-1
3. **Eti Sharma** & A. K. Gaur (2012) Plant metabolism modeling and its applications , *Biotech Today* (2012) Vol-2, p41-42

NCBI Data Submissions:

1. **Sharma, E.**, Rawat, D.S., Nautiyal, M.C. and Gaur, A.K. KC293991 *Aconitum balfourii* actin gene, partial cds,
2. **Sharma, E.**, Rawat, D.S., Nautiyal, M.C. and Gaur, A.K. KC425323 *Aconitum balfourii* 1-deoxy-D-xylulose 5-phosphate synthase (DXS) gene, partial cds,
3. **Sharma E**, Rawat,D.S., Nautiyal, M.C. and Gaur, A.K. KC514134.1 *Aconitum balfourii* isolate Stapf 3-hydroxy-3-methylglutaryl-coenzyme A reductase (HMGR) gene, partial cds,
4. **Sharma E**, Rawat,D.S., Nautiyal, M.C. and Gaur, A.K. KF667525 *Aconitum balfourii* isolate ITS gene, partial cds,

Presentation/Conferences (National/International)

1. Isha Shukla, Aaradhya Pandey, **Eti Sharma** (2024) Fertilizers in Transition: Exploring Conventional, Bio, and Nano Approaches for Sustainable Agriculture. 1st International Interdisciplinary Science Congress: Young Scholar's Meet (I-ISC-2024). Jamia Millia Islamia, New Delhi
2. Aishwarya Sharma, Aaradhya Pandey, **Eti Sharma** (2024) Advancing Agricultural Sustainability with Endophytic Nanotechnology, 7th International Conference on Advances In Agriculture Technology And Allied Sciences (ICAATAS-15-16 September 2024)

3. Aaradhya Pandey, Pragya Tiwari, **Eti Sharma** (2024) Role of nano fertilizers in sustainable agriculture. International Conference on Environmental, Human and Animal Health (ICEAHAH 2024) 16th& 17th, August, 2024 (Best Oral Presentation award)
4. Sandeep Kumar Singh, **Eti Sharma**, Nisha Gaur, Priya Raghuvanshi, and Gunjan Garg (2023) Green synthesis of silver nanoparticles of Vitex negundo leaf and their antimicrobial activity “, International Conference on Applications of Natural Products Nanomaterials and Nano-pharmaceuticals (ICAN3)”B..S. Abdur Rahman Crescent Institute of Science and Technology, Chennai, India
5. Priya Raghuvanshi, Nisha Gaur, **Eti Sharma**, Sandeep Singh Sandeep Singh(2023) Green synthesis of silver nanoparticles using Origanum majorana and its application in photocatalytic dye degradation, International Conference on Applications of Natural Products Nanomaterials and Nano-pharmaceuticals (ICAN3)”B..S. Abdur Rahman Crescent Institute of Science and Technology, Chennai, India ICAN3 9 – 10 AUGUST 2023
6. Kartavya Mathur, Annanya Gupta, **Eti Sharma** & Nisha Gaur (2023) In silico analysis of algal metabolic models for enhanced biofuel production in Chlorella vulgaris (Oral presentation) Nature and Natural Science (ICNS 2023) New vistas in green technology and socio economic sustainability. Ranidurgavati Vishwavidyalaya(RDVV) Jabalpur, M.P. India -5-6 May2023.
7. Annanya Gupta, Kartavya Mathur, Nisha Gaur & **Eti Sharma** (2023) Groundwater quality assessment using water quality index of Manipur. (Oral presentation) Nature and Natural Science (ICNS,2023) New vistas in green technology and socio economic sustainability.Ranidurgavati Vishwavidyalaya(RDVV) Jabalpur, M.P. India -5-6 May2023.
8. **Eti Sharma** & A. K. Gaur (2011) *In vitro* regeneration of *Aconitum balfourii* Stapf., a rare medicinal herb from Himalayan alpine through root explants. (Oral presentation) World Congress for Man and Nature – 2011 “Global Climate Change & Biodiversity Conservation” Held on Gurukula Kangri Vishwavidyalaya, Haridwar-249404, India
9. **Eti Sharma**, Kavita Pathak & A.K.Gaur (2012) Effect of micro/macro environment on aconitine accumulation in roots of medicinal herb *Aconitum balfourii* Stapf. “(Oral presentation) 7th Uttarakhand State Science and Technology Congress-2012, 21-23 Nov. organized by Uttarakhand State Council for Science and Technology.

Teaching Area

- Plant Biotechnology
- Biochemistry & Metabolism
- Plant Physiology
- Cell Physiology
- Pharmaceutical Biotechnology
- Nano Biotechnology
- Vaccine Biotechnology
- Molecular Toxicology

Student guided:

- Major dissertation: 01
- Minor Dissertation: 06

Workshop/Conference/FDP organized:

- One week faculty Development Program on “Hands-on Workshop in Bioprocessing & Biomanufacturing: From Fundamentals to Industry Applications”, January 20th- 24th 2025, Gautam Buddha University, Greater Noida, in association with Association of Indian Universities and Academic and Administrative Development Centre- GBU, India.
- 2. International conference on “Structural Biology and Drug Discovery”, October 11th – 12th 2023, Gautam Buddha University, Greater Noida, India

Workshops/Seminars:

- Attended one day National awareness program on Intellectual property rights (IPR), at Gautam Buddha University, sponsored by Council of Science & Technology, Lucknow(2025)
- Four days workshop on Computational Drug Discovery Course held by Centre for Advanced Training and Research Lucknow, U.P. (India) from 13-16 January 2025
- Two days workshop on Unveiling microbial drug resistance: Theory and Practical insights. 12-13 March, 2024, organized by School of Biotechnology, GBU, Greater Noida, INDIA.
- 3 days workshop on "Plant Genome Editing using CRISPR/Cas9", to be held at Sharda University, Greater Noida from November 30 - December 2, 2023.
- 3 days workshop on "Scientific/Research Paper Writing" on November 08-10, 2012 conducted by The National Academy of Sciences, India, (NASI) Allahabad (U.P.)
- Attended one day seminar (2011) on Intellectual property right (IPR) at GBPUA&T, Pantnagar

Special Training (s) /Assignment(s) /FDP attended:

- Two-week online faculty development program on “Step by Step guide to write a good research paper”, organized by Research foundation of India, 19-30 December 2024
- One Week online Faculty development program on Artificial Intelligence and Machine learning. 8-13 April, 2024 organized by Gautam Buddha University, Greater Noida, India.
- One week Faculty development program on Research methodology, bibliometric

analysis and data analysis using R. 22-28 July, 2023, organized by Society of Education of India.

- Two weeks FDP (Faculty development program) Managing Online Classes & Co-creating MOOCs 23.0" on 7-21 February, 2023 conducted by Ramanujan College, University of Delhi

Invited Talk:

- "Biomanufacturing of Industrial enzymes: Towards Sustainable solutions" in 5 days faculty Development Program on "Hands-on Workshop in Bioprocessing & Biomufacturing: From Fundamentals to Industry Applications", January 20th- 24th 2025, Gautam Buddha University, Greater Noida, in association with Association of Indian Universities and Academic and Administrative Development Centre- GBU, India.

Memberships of Scientific societies:

- Life member of Society of Plant Biochemistry and Biotechnology, Division of Biochemistry, ICAR-IARI, Pusa Campus, New Delhi, SPBB Life Membership No: L-1050 (2025)
- Life member of Society of Biological Chemist, Bangalore, India
- Annual membership of Society of Plant Biochemistry and Biotechnology, Pusa New Delhi,
- India. (OM-04(2024))
- Time based membership Of Biotech Today, U.P., India.

Dr. Eti Sharma
School Of Biotechnology