



(Dr. Poonam Sharma)

**Assistant Professor, Department of Bioengineering, Faculty of Engineering,
Integral University, Lucknow
(8279859133, poonams@iul.ac.in)**

Hyperlinks of ([Google Scholar Poonam](#) , | [Orcid poonam](#) | [Scopus Poonam](#) | [web of science](#))

PROFILE

Profile Summary

Poonam Sharma is an experienced educator and researcher in food biotechnology. She is **ASRB-ICAR NET-qualified** and has supervised several students across B.Tech, M.Sc., and M.Tech programs. Her research expertise includes food security, waste valorization, and developing value-added food products. She is an **executive council member of AFSTI** Lucknow Chapter and several member of BRSI, other scientific societies. With 32 research articles, 8 book chapters, an **h-index of 19**, and over 1600 citations, she has a strong academic presence. She has also contributed as a journal reviewer and received a seed grant for a project on food waste-derived pectin emulsions. She is recognized **among Worlds' top 2% Scientists in 2024** by Stanford University.

RESEARCH INTEREST:

- Utilization of food by-products like peels, husk, and pomace in functional food development
- Extraction of pectin and other fibers from Agro-industrial food waste.
- Utilization of under-utilized crop for the development of new food products
- Development of Edible spoon from Millets and Food Waste.
- Low Fat Formula Development, Nutritional Profile Assessment and, Stability establishment
- Development of fiber-rich Cookies, Jam, jellies from food waste
- Development of Savory Energy bar from millets and nuts
- Utilization of agro waste, Flower waste for mushroom Cultivation
- Value added product development to combat malnutrition

SUMMARY OF RESEARCH ACCOMPLISHMENT:

Original research and review papers: **27** Book Chapters: **11**
International Conference Communication: **3** National Conference Communications: **2**
Workshop/ Short Term Course Attended: **21**
Lecture/Invited Talk: **5**
Faculty Development Program: **12**
International/ National Conference/ Seminar/Workshop organized: **8**
Google Scholar Citation: **1657**; h-index: **17**; i10 index: **20** (As on 05.10.2024)

PROFESSIONAL MEMBERSHIP:

- Life member of The Biotech Research Society, INDIA, Membership No:- 4015.
- Life member of American Chemical Society, Membership No:- 32381380.
- Life member of Indian Society of Agricultural Engineers (ISAE) Membership No. LM12445.
- Life member of Association of Food Scientists and Technologists of India.

COURSE TAUGHT:

- Food Additives and Ingredients
- Hygiene and Food Safety
- Fruits and vegetables Processing Technology
- Plantation and Spices Technology
- Edible Oil Technology
- Milk and Milk Product Technology
- Food preservation & processing principles
- Bakery Technology

ADMINISTRATIVE/DEPARTMENTAL RESPONSIBILITY

- **Departmental Coordinator** of spoken tutorial program conducted by, IIT Bombay during 2017-2018.
- **School Outreach Program Coordinator**, Department of Bioengineering, Integral University, Lucknow during 2017-2020.
- **Faculty coordinator**, 2nd Edition of the Innovation, Design, and Entrepreneurship (IDE) Bootcamp, organized by AICTE, the Ministry of Education's Innovation Cell (MIC), Government of India, hosted by Integral University, Lucknow during **September 23-27, 2024**
- **Program officer, National Service Scheme from 22 June 2021 – 21 June 2024.**
- **Member, Executive Council, AFSTI Lucknow Chapter.**

- **Course Coordinator** (B. Tech Food Tech I yr), Department of Bioengineering, Integral University, Lucknow during 2020 till now.
- **Placement coordinator**, Department of Bioengineering, Integral University, Lucknow.
- **Website Coordinator**, Department of Bioengineering, Integral University, Lucknow.
- **Food Processing Lab In-charge**, Department of Bioengineering, Integral University, Lucknow.
- **Faculty In-charge Cultural Club**, Department of Bioengineering, Integral University, Lucknow.
- **NAAC Criteria 5 Member**

STUDENTS SUPERVISION

Dissertation Supervised

- **Post-Graduation Students:** 9
- **Under-Graduation Students:** 6
- **Ph.D Student:** 1 (under Supervision).

PUBLISHED/GRANT PATENTS

- Sharma, P., Younis, K., Sharma, S., Vimal, A., Vishvakarma, R., Gaur, V.K., Farooqui, A.; *Langenaria Siceraria based Low Fat Functional Mayonnaise*; India Patent No202311029273, 2024 September 26.

PUBLISHED/ACCEPTED SCI/SCOPUS RESEARCH PAPERS

1. Sharma P., Gaur VK, Kim SH, Pandey A. Microbial strategies for bio-transforming food waste into resources. *Bioresource Technology*. 2020 Mar 1;299:122580. IF= 9.641
2. Gaur VK, Sharma P., Sirohi R, Awasthi MK, Dussap CG, Pandey A. Assessing the impact of industrial waste on environment and mitigation strategies: a comprehensive review. *Journal of Hazardous Materials*. 2020 May 25:123019. IF=9.038
3. Sharma P., Gaur VK, Sirohi R, Varjani S, Kim SH, Wong JW. Sustainable processing of food waste for production of bio-based products for circular bioeconomy. *Bioresource Technology*. 2021 Jan:124684. IF= 9.641
4. Tarafdar, A., Sirohi, R., Gaur, V.K., Kumar, S., Sharma, P., Varjani, S., Pandey, H.O., Sindhu, R., Madhavan, A., Rajasekharan, R. and Sim, S.J., 2021. Engineering interventions in enzyme production: Lab to industrial scale. *Bioresource technology*, p.124771. IF=7.539
5. Sirohi, R., Pandey, J.P., Tarafdar, A., Sharma, P., Sharma, P. and Sindhu, R., 2021. Tailoring a hybrid intelligent model to predict fermentable sugar production from enzyme-catalyzed hydrolysis of damaged wheat grains. *Food Bioscience*, p.101299. IF= 4.30
6. Gaur, V.K., Sharma, P., Gaur P., Varjani S., Ngo H.H., Guo, W., Chaturvedi P. and

- Singhania R.R., 2021. Sustainable mitigation of heavy metals from effluents: Toxicity and fate with recent technological advancements. *Bioengineered*, 12:1, 7297-7313. IF= 3.2695
7. Gaur, V.K., Sharma, P., Sirohi, R., Varjani, S., Taherzadeh, M.J., Chang, J.S., Ng, H.Y., Wong, J.W. and Kim, S.H., 2021. Production of biosurfactants from agro-industrial waste and waste cooking oil in a circular bioeconomy: An Overview. *Bioresource Technology*, 343:126059. IF= 9.641
8. Gaur, V.K., Sharma, P., Gupta, S., Varjani, S., Srivastava, J.K., Wong, J.W. and Ngo, H.H., 2021. Opportunities and challenges in omics approaches for biosurfactant production and feasibility of site remediation: Strategies and advancements. *Environmental Technology & Innovation*, 25, 102132. IF= 7.45
9. Sharma, P., Gaur, V.K., Gupta, S., Varjani, S., Pandey, A., Gnansounou, E., You, S., Ngo, H.H. and Wong, J.W., 2021. Trends in mitigation of industrial waste: Global health hazards, environmental implications and waste derived economy for environmental sustainability. *Science of The Total Environment*, p.152357. IF= 7.963
10. Gaur, V.K., Gupta, S., Sharma, P., Gupta, P., Varjani, S., Srivastava, J.K., Chang, J.S. and Bui, X.T., 2022. Metabolic Cascade for Remediation of Plastic Waste: a Case Study on Microplastic Degradation. *Current Pollution Reports*, pp.1-21. IF 7.22
11. Gaur, V.K., Gautam, K., Sharma, P., Gupta, S., Pandey, A., You, S. and Varjani, S., 2022. Carbon-based catalyst for environmental bioremediation and sustainability: Updates and perspectives on techno-economics and life cycle assessment. *Environmental Research*, p.112793. IF= 6.498
12. Sharma, P., Vishvakarma, R., Gautam, K., Vimal, A., Gaur, V.K., Farooqui, A., Varjani, S. and Younis, K., 2022. Valorization of citrus peel waste for the sustainable production of value-added products. *Bioresource Technology*, p.127064. IF= 11.889
13. Sharma P., Osama K., Gaur V.K., Farooqui A., Varjani S., Younis K., 2022. Sustainable utilization of Citrus limetta peel for obtaining pectin and its application in cookies as a fat replacer. *J. Food Sci Technology*. IF= 3.117
14. Gaur, V.K., Gautam, K., Sharma, P., Gupta, P., Dwivedi, S., Srivastava, J.K., Varjani, S., Ngo, H.H., Kim, S.H., Chang, J.S. and Bui, X.T., 2022. Sustainable strategies for combating hydrocarbon pollution: Special emphasis on mobil oil bioremediation. *Science of The Total Environment*, p.155083. IF= 7.963

15. Sharma, P., Vimal, A., Vishvakarma, R., Kumar, P., porto de Souza Vandenberghe, L., Gaur, V.K. and Varjani, S., 2022. Deciphering the blackbox of omics approaches and artificial intelligence in food waste transformation and mitigation. *International Journal of Food Microbiology*, 372, p.109691. IF 5.277.
16. Gautam K, Vishvakarma R, Sharma P, Singh A, Gaur VK, Varjani S, Srivastava JK. Production of biopolymers from food waste: constrains and perspectives. *Bioresource Technology*. 2022 Jul 27:127650.IF= 11.889.
17. Sharma P, Vishwakarma R, Varjani S, Gautam K, Gaur VK, Farooqui A, Sindhu R, Binod P, Awasthi MK, Chaturvedi P, Pandey A. Multi-omics approaches for remediation of bisphenol A: Toxicity, risk analysis, road blocks and research perspectives. *Environmental Research*. 2022 Sep 5:114198.
18. Vishvakarma R, Vimal A, Mishra A, Sharma P*, Gaur VK. *Trametes versicolor* (L.) Lloyd as a source of thermostable serine protease: production and characterization.
19. Tarafdar, A., Sirohi, R., Gaur, V.K., Kumar, S., Sharma, P., Varjani, S., Pandey, H.O., Sindhu,, Madhavan, A., Rajasekharan, R. and Sim, S.J., 2022. Engineering interventions in enzyme production: Lab to industrial scale (vol 326, 124771, 2021). *Bioresource Technology*, 361.
20. Gaur, V.K., Sirohi, R., Bhat, M.I., Gautam, K., Sharma, P., Srivastava, J.K. and Pandey, A., 2022. A review on the effect of micro-and nano-plastics pollution on the emergence of antimicrobial resistance. *Chemosphere*, p.136877.
21. Sharma, P., Osama, K., Varjani, S., Farooqui, A. and Younis, K., 2023. Microwave-assisted valorization and characterization of *Citrus limetta* peel waste into pectin as a perspective food additive. *Journal of Food Science and Technology*, pp.1-10.
22. Gautam, K., Sharma, P., Dwivedi, S., Singh, A., Gaur, V.K., Varjani, S., Srivastava, J.K., Pandey, A., Chang, J.S. and Ngo, H.H., 2023. A review on control and abatement of soil pollution by heavy metals: Emphasis on artificial intelligence in recovery of contaminated soil. *Environmental Research*, p.115592.
23. Gautam, K., Sharma, P., Gaur, V.K., Gupta, P., Pandey, U., Varjani, S., Pandey, A., Wong, J.W. and Chang, J.S., 2023. Oily waste to biosurfactant: A path towards carbon neutrality and environmental sustainability. *Environmental Technology & Innovation*, p.103095.

24. Sharma P., Gaur VK, Sirohi R, Larroche C, Kim SH, Pandey A. Valorization of cashew nut processing residues for industrial applications. *Industrial Crops and Products*. 2020 Sep 15;152:112550. IF=4.244
25. Tarte, I., Singh, A., Dar, A.H., Sharma, A., Altaf, A. and Sharma, P., 2023. Unfolding the potential of dragon fruit (*Hylocereus* spp.) for value addition: A review. *eFood*, p.e76.
26. Gaur, V.K., Gautam, K., Vishvakarma, R., Sharma, P., Pandey, U., Srivastava, J.K., Varjani, S., Chang, J.S., Ngo, H.H. and Wong, J.W., 2024. Integrating Advanced Techniques and Machine Learning for Landfill Leachate Treatment: Addressing Limitations and Environmental Concerns. *Environmental Pollution*, p.124134.
27. Sharma, P., Gaur, P., Dwivedi, S., Kumari, K., Srivastava, J.K., Dhakar, K., Gaur, V.K., Varjani, S., Chang, J.S., Ngo, H.H. and Ng, H.Y., 2024. Harnessing microbial potentials by advancing bioremediation of PAHs through molecular insights and genetics. *International Biodeterioration & Biodegradation*, 194, p.105861.

BOOK CHAPTERS

- **Sharma P**, Gaur VK, Srivastava JK. Diet and Nutrition in Alzheimer's disease and Healthy Aging. In *Biological, Diagnostic and Therapeutic Advances in Alzheimer's Disease 2019* (pp. 183-208). Springer, Singapore.
- **Sharma P**, Gautam K, Pandey AK, Gaur VK, Farooqui A, Younis K. Pectin. *Biomass, Biofuels, Biochemicals: Biodegradable Polymers and Composites - Process Engineering to Commercialization 2021* (pp 126-153). Elsevier, Cambridge, United States.
- Gaur VK, **Sharma P**, Srivastava JK, Sirohi R, Manickam N. Production and application of bacterial polyhydroxyalkanoates. *Biomass, Biofuels, Biochemicals: Biodegradable Polymers and Composites - Process Engineering to Commercialization 2021* (pp 248-277). Elsevier, Cambridge, United States.
- Gaur P, Gaur VK, **Sharma P**, Pandey A. Thermal/rheological behavior and functional properties of biopolymers and biopolymer composites. *Biomass, Biofuels, Biochemicals: Biodegradable Polymers and Composites - Process Engineering to Commercialization 2021* (pp 438-463). Elsevier, Cambridge, United States.
- Gautam K, Gaur P, **Sharma P***. Bioremediation of radioactive contaminants/ radioactive metals. *Bioremediation: challenges and advancements 2022* (pp 89-116). Bentham books. ISBN: 978-981-5036-04-6. DOI:10.2174/97898150360391220101.
- **Sharma P**, Rai S, Gautam K, Sharma S. Phytoremediation. *Plants and their Interaction to Environmental Pollution 2022* (pp 221-230) Elsevier, Cambridge, United States.
- Gautam, K., **Sharma, P.**, Gupta, P. and Gaur, V.K., 2023. Microbial Production and Application of Pullulanases. In *Microbial Enzymes in Production of Functional Foods and Nutraceuticals* (pp. 91-107). CRC Press.
- Khan, A., Vishvakarma, R., **Sharma, P.**, Sharma, S. and Vimal, A., 2023. Green Synthesis of MetalOxide Nanoparticles from Fruits and Their Waste Materials for Diverse Applications. In *Nanomaterials from Agricultural and Horticultural Products* (pp. 81-119). Singapore: Springer Nature Singapore.

- Qidwai, Y.N., Vishvakarma, R., Farooqui, A., **Sharma, P.**, Sharma, S. and Vimal, A., 2023. Aluminum Oxide Nanoparticles: Plant Response, Interaction, Phytotoxicity, and Defense Mechanism. In *Nanomaterials and Nanocomposites Exposures to Plants: Response, Interaction, Phytotoxicity and Defense Mechanisms* (pp. 285-300). Singapore: Springer Nature Singapore.
- Khan, A., Vishvakarma, R., Vimal, A., **Sharma, P.**, Usman, H. and Kumar, A., 2023. Carbon Nanodots: A Novel Carbon Material with Multifacet Applications in Healthcare. In *Carbon Nanostructures in Biomedical Applications* (pp. 145-167). Cham: Springer International Publishing.
- Kumar, P., Gonelimali, F., Máté, M. and **Sharma, P.**, 2024. Characteristics, Composition, and Structure of Organic Nanomaterials. In *Organic-Based Nanomaterials in Food Packaging* (pp. 15-34). Cham: Springer Nature Switzerland.