

Dr. Sneh Gautam



Name: Dr. Sneh Gautam

Designation: Assistant Professor

Institute: Department of Molecular Biology & Genetic Engineering, G.B. Pant University of Agriculture & Technology, Pantnagar

Working Experience: 9 Years

Qualification: Ph.D (IIT Roorkee)

Area of Interest: Nanomaterials, Nanocomposite, Biomaterials, Nanoparticles in crop plants Tissue Engineering and Regenerative medicine

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Citation: 1450 (Google Scholar)
(<https://scholar.google.com/citations?user=pemhrdQAAAAJ&hl=en&oi=ao>)

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PUBLICATIONS

Papers Published in Peer-reviewed International Journal

1. Sharma, C., Raza, M.A., Purohit, S.D., Pathak, P., **Gautam, S.**, Corridon, P.R. and Han, S.S., 2025. Cellulose-based 3D printing bio-inks for biomedical applications: A review. *International Journal of Biological Macromolecules*, p.141174. (**Impact Factor: 7.7**)

2. Sapna, Sharma, C., Pathak, P. and **Gautam, S.**, 2025. Chitosan Edible Coatings Loaded with Bioactive Components for Fruits and Vegetables: A Step Toward Sustainable Development Goals. *Food and Bioprocess Technology*, pp.1-35. (**Impact Factor: 5.3**)
3. Purohit, Shiv Dutt, Rakesh Bhaskar, Hemant Singh, Ruchir Priyadarshi, Hyunjin Kim, Yumi Son, **Sneh Gautam**, and Sung Soo Han. "Chitosan-based Electrospun fibers for Bone-tissue Engineering: Recent Research Advancements." *International Journal of Biological Macromolecules* (2024): 136530. (**Impact factor 7.7**).
4. Sharma, C., Bhardwaj, N.K., Pathak, P., Dey, P., **Gautam, S.**, Kumar, S. and Purohit, S.D., 2024. Bacterial nanocellulose by static, static intermittent fed-batch and rotary disc bioreactor-based fermentation routes using economical black tea broth medium: A comparative account. *International Journal of Biological Macromolecules*, 277, p.134228 (**Impact factor 7.7**).
5. Sapna, Chhavi Sharma, Puneet Pathak, Shashi Prabha Yadav, **Sneh Gautam**, Potential of emerging "all-natural" edible coatings to prevent post-harvest losses of vegetables and fruits for sustainable agriculture, *Progress in Organic Coatings*, 193 (2024) 108537. (**Impact Factor 6.6**).
6. Diksha Wahi, Komal Bisht, **Sneh Gautam**, Prafull Salvi, Pushpa Lohani, Green synthesis, characterization and application of nano silica for drought endurance in *Eleusine coracana*, *Environmental Science: Nano* (2024), 11, 3412-3429 (**Impact factor 5.3**).
7. Chhavi Sharma, Puneet Pathak, Anuj Kumar, **Sneh Gautam**, Sustainable Regenerative Agriculture Allied with Digital Agri-Technologies and Future Perspectives for Transforming Agrarian Sector, *Environment, Development and Sustainability*, 2024, 1-36 (**Impact factor 4.7**).
8. Hemant Singh, Mukesh Dhanka, Indu Yadav, **Sneh Gautam**, Showkeen Muzamil Bashir, Narayan Chandra Mishra, Taruna Arora, and Shabir Hassan. "Technological Interventions Enhancing Curcumin Bioavailability in Wound-Healing Therapeutics." *Tissue Engineering Part B: Reviews* 30, no. 2 (2024): 230-253. (**Impact Factor 6.4**).
9. Shivraj Sahu, **Sneh Gautam**, Atul Singh, Pushpa Lohani, Chhavi Sharma, Puneet Pathak, Anuj Kumar, and Hemant Singh. "Synthesis and characterization of chitosan-zinc-salicylic acid nanoparticles: A plant biostimulant." *International Journal of Biological Macromolecules* 253 (2023): 127602. (**Impact factor 7.7**).
10. Debjyoti Das, Komal Bisht, Ankita Chauhan, **Sneh Gautam**, Jai Prakash Jaiswal, Prafull Salvi, Pushpa Lohani, 2023, Morpho-physiological and biochemical responses in wheat foliar sprayed with zinc-chitosan-salicylic acid nanoparticles during drought stress, *Plant Nano Biology*, 4, p. 100034. (**Citation: 15**)
11. **Sneh Gautam**, Amit Kumar Dinda, Narayan Chandra Mishra, Fabrication and characterization of PCL/gelatin composite nanofibrous scaffold for tissue engineering

applications by electrospinning method, **Material Science and Engineering C**, (2013) 33(3):1228-1235(**Impact factor 5.5, Citation 578**).

12. **Sneh Gautam**, Chia-Fu Chou, Amit K. Dinda, Pravin D Potdar, Narayan C. Mishra, Fabrication and Characterization of PCL/Gelatin/Chitosan Ternary Nanofibrous Composite Scaffold for Tissue Engineering Applications, **Journal of Material Science**, (2014), 49:1076–1089, (**Impact factor 4.5, Citation 134**).
13. **Sneh Gautam**, Chia-Fu Chou, Amit K. Dinda, Pravin D Potdar, Narayan C. Mishra, Surface Modification of Nanofibrous Polycaprolactone/Gelatin Composite Scaffold by Collagen type I Grafting for Skin Tissue Engineering, **Material Science and Engineering C**, (2014) 34:402–409 (**Impact factor 5.5, Citation 242**).
14. **Sneh Gautam**, Chhavi Sharma, Shiv Dutt Purohit, Hemant Singh, Amit Kumar Dinda, Pravin D. Potdar, Chia-Fu Chou, and Narayan Chandra Mishra. "Gelatin-polycaprolactone-nanohydroxyapatite electrospun nanocomposite scaffold for bone tissue engineering." **Materials Science and Engineering: C** 119 (2021): 111588. (**Impact factor 5.5, Citation 129**).
15. **Sneh Gautam**, Shiv Dutt Purohit, Hemant Singh, Amit Kumar Dinda, Pravin D. Potdar, Chhavi Sharma, Chia-Fu Chou, and Narayan Chandra Mishra. "Surface modification of PCL-gelatin-chitosan electrospun scaffold by nano-hydroxyapatite for bone tissue engineering." **Materials Today Communications** 34 (2023): 105237. (**Impact factor 3.6; Citation: 19**)
16. Singh, H., Purohit, S.D., Bhaskar, R., Yadav, I., Bhushan, S., Gupta, M.K., **Gautam, S.**, Showkeen, M. and Mishra, N.C., 2021. Biomatrix from goat-waste in sponge/gel/powder form for tissue engineering and synergistic effect of nanoceria. **Biomedical Materials**, 16 (2), p.025008. (**Impact factor: 4.1 Citation 22**)
17. Poonam Maan, Amit Kumar Bharti, **Sneh Gautam**, and Dharm Dutt, Screening of Important Factors for Xylanase and Cellulase Production from the Fungus *C. cinerea* RM-1NFCCI-3086 through Plackett-Burman Experimental Design, **BioResources**, (2016), 11(4), 8269-8276, (**Impact factor 1.7; Citation 17**).
18. Chhavi Sharma, **Sneh Gautam**, Amit K. Dinda, Narayan. C. Mishra, Cartilage tissue engineering: current scenario and challenges, **Advanced Materials Letters**, (2011), 2(2): 90-99 (**Citation 63**).
19. **Gautam, S.**, Biocompatibility Study of Collagen I Modified PCL/Gelatin/Chitosan Composite Nanofibrous Scaffold for Fibroblast and Osteoblast Cells, International Journal of Current Microbiology and Applied Sciences, (2020), 9(5), 2319-7706. (**NAAS rating 5.3**)
20. Meher, B.B., Sahu, S., Singhal, S., Joshi, M., Maan, P., **Gautam, S.**, 2020, Influence of Green Synthesized Zinc Oxide Nanoparticles on Seed Germination and Seedling Growth in Wheat (*Triticum aestivum*), International Journal of Current Microbiology and Applied Sciences, 9 (5), 258-270. (**NAAS rating 5.3; Citation: 8**)

21. **Gautam, S.** and Ambwani, S., 2019. Tissue Engineering: New Paradigm of Biomedicine. *Biosciences Biotechnology Research Asia*, 16(3), pp.521-532. (NAAS 4.8; Citation: 12)
22. Kartikay Joshi, Divya Badoni, **Sneh Gautam** and Pushpa Lohani, The Multifareous role of Nanomedicine in healthcare, **Journal of Scientific and Innovative Research 2022**; 11(4): 89-94.
23. Bisht, Komal, Niharika Pandey, **Sneh Gautam**, and Pushpa Lohani. 2024. "Determination of Polyphenols, Reducing Potential and FT-IR Analysis of Green Tea (*Camellia Sinensis L.*) Leaves Extract for Nanoparticles Synthesis". *Journal of Advances in Biology & Biotechnology* 27 (8):842-50. (NAAS 5.3)

Book Chapters

1. Atul Singh, Hemant Singh, Sushma, Oddem Govardhan, Pushpa Lohani, Chhavi Sharma, Sonu Ambawani, Shabir Hassan, **Sneh Gautam**, 2024 Natural Biopolymers for Bone Tissue Engineering, Polymer Scaffolds for Tissue Engineering Vol – 1, Mr. Mahmood Alam, Bentham Science Publishers LTD (Under publication).
2. Chhavi Sharma, Pravin Potdar, Samit Kumar, **Sneh Gautam**, Puneet Pathak, The potential of Bacterial nanocellulose-based Hydrogels and their nanocomposites as coating materials in Regenerative Biomedicine, Medical application for Biocompatibility Surfaces and coating Edited by Shriknat Kulkarni, A.K. Haghi, Bancha Yingngam and Mattew Chidozie Ogwu, Royal Society of chemistry, (2024), pp-119-160.
3. **Sneh Gautam**, Pushpa Lohani, Shiv Dutt Purohit, Sonu Ambawani, and Pooam Maan, 2023. Potential of Natural-Product Based Nano-Formulations as Chemopreventive Agents. *Natural Products and Nano-Formulations in Cancer Chemoprevention* (pp. 129-142), Shiv Kumar Dubey (ed.) CRC press, Taylor & Francis group.
4. Chhavi Sharma, Puneet Pathak, and **Sneh Gautam**, Transforming Agri-Crop Residue Biomass for Value Addition: An Innovative Strategy Toward Resilient Circular Economy, (pp. 1- 26) S. Thomas et al. (eds.), *Handbook of Biomass*, Springer Nature Singapore Pte Ltd. 2023.
5. **Sneh Gautam**, Pushpa Lohani, Poonam Maan, 2022. Application of Biomimetic Membranes for Water Purification. In *Nano-biotechnology for Waste Water Treatment* (pp. 347-364) J. P. N. Rai and S. Saraswat (eds.), *Nano-biotechnology for Waste Water Treatment*, Water Science and Technology Library 111 Springer, Cham.
6. **Sneh Gautam** Hemant Singh, and N.C. Mishra, 2022. Natural polymer-based electrospun systems for wound management. (pp. 167-186), Mahesh K. Sah, João F. Manom, Naresh Kasoju (eds.). In *Natural Polymers in Wound Healing and Repair*, Elsevier.

Abstract Published in International and National Conferences

1. Kavita Chaudhary, Niharika Pandey, **Sneh Gautam**, Anshu Rahal and Pushpa Lohani, **“Effect of drought on nutrition composition of grains of contrasting genotypes of wheat and finger Millet”** in International Conferences on Strategies for Sustainable Agriculture, Environment & Health for Viksit Bharat, held during 03-05 February 2025 at Uttarakhand Council for Biotechnology, Haldhi, Udham Singh Nagar, Uttarakhand.
2. Niharika Pandey, Aayeisha Das, Diksha Sharma, **Sneh Gautam**, Pushpa Lohani, **Impact Of Seed Priming With Essential Oil Nanoemulsions on Germination and Seedling Growth of Wheat**, in XVII Agricultural Science Congress 2025, Frontier Sciences and Technology in Agriculture for a Developed India during 20-22, February 2025 at G. B. Pant University of Agriculture & Technology, Pantnagar, Udham Singh Nagar, Uttarakhand.
3. Sameekshya Subhradarshinee Patra, Aayeisha Das, Niharika Pandey, **Sneh Gautam** and Pushpa Lohani, **Impact of Foliar Application of Silica Nanoparticle on Growth and Yield of Wheat**, XVII Agricultural Science Congress 2025, Frontier Sciences and Technology in Agriculture for a Developed India during 20-22, February 2025 at G. B. Pant University of Agriculture & Technology, Pantnagar, Udham Singh Nagar, Uttarakhand.
4. Pooja Bargali, Ravendra Kumar, Sneh Gautam, **“Evaluation ff Nematicidal Potential and Encapsulation of Artemisia Annua L. Essential Oil”** in XVII Agricultural Science Congress 2025, Frontier Sciences and Technology in Agriculture for a Developed India during 20-22, February 2025 at G. B. Pant University of Agriculture & Technology, Pantnagar, Udham Singh Nagar, Uttarakhand.
5. **Oral presentation** entitled **“Effect of Chitosan- Zn-Salicylic acid Nanocomposites Particles on Wheat (Triticum aestivum): Evaluation of Biochemical and Yield Responses”** in Internation Conference on Recent Advances in Agriculture, Engineering, Applied & Life Sciences for Environmental Sustainability (RAAEALSES-2024) held during 23-25 October 2024, at Uttaranchal University, Dehradun, Uttarakhand.
6. Tushar Singh, Prakhar Bhatt, Niharika Pandey, **Sneh Gautam**, Pushpa Lohani, **“Advancing wheat Disease Management: Classification of Yellow Rust Severity Using Convolutional Neural Network Model and Nanoparticle Treatments”** in International Workshop on “Real-time Automated Pest Monitoring of Horticulture Crops” 21-22, 2024 at G.B.Pant University of Agriculture and Technology Pantnagar-263145, Udham Singh Nagar, Uttarakhand.
7. **Oral presentation** entitled **“Synthesis of Zn encapsulated Polymer-based Nanoparticles for Oxidative Stress Management in Plant”** in International Conference on Innovative Approaches in Basic & Applied Sciences for Societal Development organized by College of Basic Science & Humanities, G. B. Pant University of Agriculture & Technology, Pantnagar, India from 24-25 March 2023.

8. **Oral presentation** entitled “**Effect of Zinc Oxide Nanoparticles on Wheat Seed Germination and Seedling Growth**”, in 7th International Conference on Nanoscience and Nanotechnology (ICONN 2023; virtual conference) organized by the Department of Physics and Nanotechnology SRM Institute of Science and Technology, Kattankulathur, India from 27 - 29 March 2023.
9. Atul Singh, Kirti Singh, Sneha Gautam “**Role of Nanoparticles in Sustainable Agriculture: Recent Advances, Toxicity and Challenges**” in 7th International Conference on Nanoscience and Nanotechnology (ICONN 2023; virtual conference) organized by the Department of Physics and Nanotechnology, SRM Institute of Science and Technology, Kattankulathur, India from 27 - 29 March 2023.
10. **Oral presentation** entitled “**Synthesis and Characterization of Zinc Oxide Nanoparticles and their Effect on Seed Germination**” in International Conference on Advanced Nanomaterials and Applications (ICANA-2022) organized by VIT-AP University, Amaravati, Andhra Pradesh, India from 16-18 November 2022.
11. **Oral presentation** entitled “**Effect of Zinc oxide Nanoparticles on Yield and Biochemical Responses in Wheat**” in International Conferences on Nanotechnology: Opportunities & Challenges (ICNOC-2022) organized by Department of Applied Sciences & Humanities, Faculty of Engineering & Technology, Jamia Millia Islamia New Delhi, India from 28-30 November 2022.
12. **Oral presentation** entitled “**Effect of Zn-Chitosan-Salicylic acid Nanocomposite Particles on Wheat Seed Germination**” in International Conference on Advances in Agriculture, Environmental and Biosciences for Sustainable Development (AAEBSSD-2021) organized by Agro Environmental Development Society (AEDS), Majhra Ghat, Rampur, U.P, India from 5-6 August 2021.
13. Megha Bhatt, Sneha Gautam and Pushpa Lohani, “**Full-length cloning and in-silico analysis of drought responsive EcMyb1 gene from finger millet (PRM6107)**” in International Conference on Advances in Agriculture, Environmental and Biosciences for Sustainable Development (AAEBSSD-2021) organized by Agro-Environmental Development Society (AEDS), Majhra Ghat, Rampur, U.P, from 5-6 August 2021.
14. **Oral presentation** entitled “**Evaluation of PCL/Gelatin/chitosan/nHAp Quaternary Nanofibrous Composite Scaffold for Bone Tissue Engineering Applications**” held during 24-26 May 2019 in **International Conference** on Energy, Functional Materials and Nanotechnology & Sustainable Environment Management at Kumaun University, Nainital.
15. **Oral presentation** entitled “**Microbial Diversity: Significance**” held on 6th January 2019 in **National Conference** on Status of Upcoming Trends in Biodiversity Conservation at Department of Botany, Chaman Lal Mahavidhyalaya, Landhaura, Haridwar (UK).
16. **Invited Talk** “**Surface Functionalization of PCL/Gelatin/Chitosan Nanofibrous Composite Scaffold by Nano-hydroxyapatite for Bone Regeneration**” held during 06-08 December 2017 in **International conference** on Nanotechnology: Ideas Innovation and initiatives-2017 (ICN:3I) at Indian Institute of Technology Roorkee, Roorkee.

17. **Oral presentation** entitled “**PCL/Gelatin/nHAp Ternary Nanocomposite Scaffold for Bone Tissue Engineering**” held during 15-17 April 2016 in **International conference** on Biomaterials, Biodiagnostics, Tissue engineering, Drug delivery and Regenerative Medicine (BiTerm-2016) at Indian Institute of Technology Delhi, New Delhi.
18. **Oral presentation** entitled “**Surface Modification of PCL/Gelatin Composite Scaffold by Collagen Grafting for Skin Regeneration**” held during 2-4 November 2012 in **International conference** on Advances in Materials and Processing: Challenges and Opportunity (AMPCO-2012) at Indian Institute of Technology Roorkee.
19. **Poster Presentation** entitled “**In-vitro Biocompatibility Study of Electrospun Composite Scaffold using Mouse Fibroblast**” held during 29-31 March 2012 in **International Conference** on Microbial, Plant & Animal Research (ICMPAR-2012) at Mody Institute of Technology & Science, Sikar, Rajasthan.
20. **Oral presentation** entitled “**Optimization of electrospinning parameters to fabricate composite nanofibrous Tissue Engineering Scaffold**” in **International Conference** on Nanomaterials & Nanotechnology (ICNANO) held during 18-21 December, 2011 at Conference Centre, University of Delhi, Delhi.
21. **Oral presentation** entitled “**Fabrication of Polycaprolactone/Gelatin/Chitosan Composite Nanofibrous Scaffold**” in **International Conference** on Tissue Engineering & Regenerative Medicine ICTERM-2011 held during 30 Sept to 2 Oct 2011 at National Institute of Technology, Rourkela.
22. **Oral presentation** entitled “**Fabrication of Polycaprolactone/Gelatin Composite Nanofibrous Tissue Engineering Scaffold by electrospinning method**” in **National Conference** on Advances in Chemical Engineering held during 27-28 Feb 2011 at Thapar University Patiala.
23. Sweta Gupta, Uday Kumar, **Sneh Gautam**, Chhavi Sharma, Narayan Chandra Mishra, “**Production of nanofibers by electrospinning and their application in engineering and technology**” **National Conference** (LSFI_MIET_Nano_2011) on Nanoscience and nanotechnology, jointly organized by Life Science Foundation of India, Karnataka & Meerut Institute of Engineering & Technology, Meerut during 22-26th November, 2011.

Projects:

- Morpho-Physiological and biochemical characterization of tolerance traits in global collection of finger millets subjected to drought stress, funding agency: UCB; approved cost: 5.15 lakhs; ongoing.
- Encapsulation strategies to enhance nematicidal properties of essential oils from artemisia species growing in Uttarakhand, Funding agency: UCOST; approved cost: 6 lakhs; ongoing.

AWARDS/RECOGNITIONS

- Reviewer in International journal of Agriculture Science (ISSN:0975-3710 EISSN:0975-9107) of “Bioinfo Publications”.
- Reviewer in Journal of Nanomaterials (DOI: 10.1155/9182) of Hindwai Publication
- Reviewer in Frontiers in Bioengineering and Biotechnology (ISSN (Online): 2296-4185) of Frontiers Media S.A
- Reviewer in Biosciences Biotechnology Research Asia (ISSN 0973-1245)
- Life member of Indian Science Congress Association (No. L-37669)
- Life member of Society for Tissue Engineering & Regenerative Medicine (India); (Registration No: 1406T/2007)
- Qualified Graduate Aptitude Test in Engineering (GATE -2007) in Life Sciences