SHIPRA PANDEY

Post Doctoral Fellow
Department of Chemical Engineering
IIT Bombay
Email– pshipra@iitb.ac.in; shipra2589@gmail.com
Cell: +91-917905735802

CAREER GOAL

To establish myself in the field of green nanotechnology as a result-oriented researcher for the development of effective technology, providing an alternative solution to replace chemical one.

ACHIEVEMENTS

- Best research paper award, 2015 – awarded by CSIR-NBRI, Lucknow
- 2nd prize for best poster presentation award in ICPEP-5 conference, Lucknow
- Best research paper award, 2018- awarded by CSIR-NBRI, Lucknow
- SRISTI-BIRAC Appreciation Award, received grant of 1 Lac
- Award of CSIR Senior Research Fellow in 2018
- Shri Lok Bahadur Khanal Memorial Award for Women Research Excellence Award best poster in BEHSD-2018
- Best PhD thesis award, 2020- by Samagra Vikas Welfare Society

WORK HISTORY

Aug 2020- Present **Postdoctoral Fellow**
Indian Institute of Technology Bombay, India

- Synthesis of nano-composite as food preservative for controlling food-borne pathogen

2013 to May 2020 **Senior Research Fellow**
National Botanical Research Institute, Lucknow, India

- Nanoemulsion synthesis for enhancing antimicrobial activity against pathogens
- Study on pathogens, mechanism adopted by the microbe during pathogenecity
- Biogenic synthesis of nanoparticles of different shape and size applied in agriculture, pollutant degradation, human pathogen control
- Product development based on nanotechnology for industrial application

EDUCATION

2014-2020 **Doctor of Philosophy: Biological Science, CSIR-NBRI, Lucknow**

2010-12 **Master of Science: Microbiology, Barkatullah University, Bhopal (1st Div)**

2007-10 **Bachelor of Science: Botany, Allahabad university, Allahabad**

(1st Div)

PUBLISHED PAPERS

- **Pandey, S**., Giri, V.P., Tripathi, A., Kumari, M., Narayan, S., Bhattacharya, A., Srivastava, S., Mishra, A. (2020). Early blight disease management by herbal nanoemulsion in *Solanum lycopersicum* with bio-protective manner**.** ***Industrial crop and Products***, 155, 112421.
- Kumari, M*., **Pandey, S***., Mishra, S.K., Giri, V.P., Agarwal, L., Sidhu, O.P., Pandey. A., Nautiyal, C.S., Mishra. A. (2020). Omics based mechanistic insight into the role of bioengineered nanoparticles for biotic stress amelioration by modulating plant metabolic pathways. ***Frontiers in Bioengineering and Biotechnology***, 8, 242. Equal contribution.
- Giri, V.P*., **Pandey, S***., Kumari, M., Paswan, S., Tripathi, A., Srivastava, M., Rao, Ch. V., Katiyar, R., Nautiyal, C.S., Mishra, A. (2019). Biogenic silver nanoparticles as an efficient contrivance for wound healing acceleration than common antiseptic medicine. ***FEMS Microbiology Letter***, 366 (16), fnz201. * Equal contribution.
- Singh, S.P*., **Pandey, S***., Mishra, N., Giri, V.P., Mahfooz, S., Bhattacharya, A., Kumari, M., Chouhan, P., Nautiyal, C.S., Mishra, A. (2019). Supplementation of *Trichoderma* improves the alteration of nutrient allocation and transporter genes expression in rice under nutrient deficiencies. ***Plant Physiology and Biochemistry***, 143, 351-363. * Equal contribution.
- Srivastava, V., **Pandey, S**., Mishra, A., Choubey, A.K., 2019. Green synthesis of biogenic silver particles, process parameter optimization and application as photocatalyst in dye degradation. ***SN Applied Sciences***, 1(12),1722.
- Kumari, M., **Pandey S**., Bhattacharya, A., Nautiyal, C.S., Mishra A. (2017). Protective role of biosynthesized silver nanoparticles against early blight disease in *Solanum lycopersicum.* ***Plant Physiology and Physiology***, 121:216-225.
- Kumari, M., **Pandey S**., Mishra, S.K., Nautiyal, C.S., Mishra, A. (2017). Effect of biosynthesized silver nanoparticles on native soil microflora via plant transport during plant-pathogen-nanoparticles interaction. ***3 Biotech***, 7:345.
- Kumari, M., **Pandey, S**., Mishra, A., & Nautiyal, C.S. (2017). Finding a facile way for the bacterial DNA transformation by biosynthesized gold nanoparticles. ***FEMS Microbiology Letters***, 364(12), fnx081.
- Kumari, M., Shukla, S., **Pandey, S**., Giri, V.P., Tripathi, T., Bhatia, A., Kakkar, P., Nautiyal, C.S., Mishra, A. (2017). Enhanced cellular internalization: A bactericidal mechanism more relative to biogenic nanoparticles than chemical counterparts. ***ACS-Applied Materials & Interfaces***, 9:4519−4533.
- Kumari, M., **Pandey, S**., Giri, V.P., Bhattacharya, A., Shukla, R., Nautiyal, C.S., Mishra, A. (2016). Tailoring shape and size of biogenic silver nanoparticles to enhance antimicrobial efficacy against MDR bacteria. ***Microbial Pathogenesis***, 105:346-355.

- Kumari, M., Mishra, A, **Pandey, S.**, Singh, S.P., Chaudhry, V., Mudiam, M.K.R., Shukla, S., Kakkar, P., Nautiyal, C.S. (2016). Physico-chemical conditions optimization during biosynthesis lead to development of improved and catalytically efficient gold nanoparticles. ***Scientific Reports***, 6:27575.
- Mishra, A., Kumari, M., **Pandey, S.**, Chaudhry, V., Gupta, K.C., Nautiyal, C.S. (2014) Biocatalytic and antimicrobial activities of gold nanoparticles by *Trichoderma sp.* ***Bioresource Technology***, 166:235-242.
- Kumari, M., Giri, V.P., **Pandey, S**., Kumar, M., Katiyar, R., Nautiyal, C.S., Mishra, A. (2019). An insight into the mechanism of antifungal activity of biogenic nanoparticles than their chemical counterparts. ***Pesticide Biochemistry and Physiology***, 157:45-52.
- Bhattacharya, A., Giri, V.P., Singh, S.P., **Pandey, S**., Chauhan Priyanka, Soni, Sumit., Srivastava, S., Singh, P.C., Mishra, A. (2019) Intervention of bio-protective endophyte *Bacillus tequilensis* enhance physiological strength of tomato during Fusarium wilt infection. ***Biological Control***, 139:104074.
- Mishra, A., Singh, S.P., Mahfooz, S., Shukla, R., Mishra, N., **Pandey, S**., Dwivedi, S., Pandey, V., Shirke, P.A., Nautiyal.C.S. (2019). External supplement of impulsive micromanager *Trichoderma* helps in combating CO_2 stress in rice grown under FACE. ***Plant Molecular Biology Reporters***, DOI: 10.1007/s11105-018-1133-8.

Book Chapters

- **Pandey, S**., Giri, V.P., Tripathi, A., Bajpai, R.K., Sharma, D., Bahadur, L., Mishra, A., 2020. Interaction, fate and risks associated with nanomaterials as fertilizers and pesticides. Advances in Nano-Fertilizers and Nano-pesticides Application for Crop Improvement. Elsevier.
- **Pandey, S**., Mishra, A., Giri, V.P., Kumari, M. and Soni, S., 2019. A green nano-synthesis to explore the plant microbe interactions. In *New and Future Developments in Microbial Biotechnology and Bioengineering* (pp. 85-105). Elsevier.
- **Pandey S**, Kumari M, Singh S.P, Bhattacharya A, Mishra S.K, Chauhan P.S, Mishra A. (2015) "Bioremediation via nanoparticles: An innovative microbial approach". In: S. Singh and K. Srivastava (eds.)"Handbook of research on uncovering new methods for ecosystem management through bioremediation", IGI Global. ISBN-13: 978-1466686823.
- Singh S.P, **Pandey S**, Shukla R, Singh P.C, Mishra A.(2014) "Diversity, Systematic and Application of fungi". In: T.S. Rana, K. N. Nair and D. K. Upreti (eds.) "Plant taxonomy & biosystematics". NIPA, New Delhi. ISBN- 978-93-83305-41-4.

Patent

One patent on nanoemulsion based skin care formulation has been submitted.

Reviewer

Advances in Science, Technology and Engineering Systems Journal (ASTESJ) (ISSN: 2415-6698)