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PROFILE

ACADEMIC QUALIFICATION

- **Doctorate of Philosophy (Process and food Engineering)**, GB PANT UNIVERSITY OF AGRICULTURE & TECHNOLOGY, PANTNAGAR, India, **January. 2015 – December 2019.**
OPTIMIZATION OF A PROCESS FOR EXTRACTION OF BIO COLORANT FROM WALNUT HULL BY EMPLOYING ULTRASOUND AND MICROWAVE TECHNIQUES. Under the guidance of Professor P.K. Omre
- **Master of technology (Process and food Engineering)**, GB PANT UNIVERSITY OF AGRICULTURE & TECHNOLOGY, PANTNAGAR, India, **August 2012 – June 2014.** **SHELF-LIFE ENHANCEMENT OF FRESH CUT PAPAYA WITH EDIBLE COATINGS AND PACKAGING MATERIALS UNDER DIFFERENT STORAGE CONDITIONS.** Under the guidance of Dr. Khan Chand
- **Bachelor of technology (Food Technology)**, Jaipur National University, Jaipur, INDIA **July 2008 – June 2012.**

TEACHING EXPERIENCES (Total Experience: 5.2* Yrs. as an Assistant Professor):

- Working as Assistant Professor (Bio Engineering Department) at Integral University Lucknow from December 2020 to till date.
- Worked as Assistant Professor (Food Science and Technology) at Doon (P.G) College of Agriculture Science Technology & Education Selaqui, Dehradun from September 2019 to November 2020.

RESEARCH INTEREST:

- Agro waste Utilization
- Nutritional and functional foods
- Food preservation and shelf-life enhancement

SUMMARY OF RESEARCH ACCOMPLISHMENT:

- Published over 35 SCI/Scopus-indexed research papers
- Citation count: 450, h-index: 13
- Guided multiple Ph.D., M. Tech. and B. Tech. students in food technology research

PROFESSIONAL MEMBERSHIP:

AFSTI LIFE TIME MEMBERSHIP

COURSE TAUGHT:

B. Tech.

- Food Packaging Technology
- Post Harvest Physiology, Handling, And Storage Of Fruits And Vegetables
- Food Plant Layouts

M.Tech.

- Fundamental Food Microbiology
- Unit Operations in Agricultural Processing
- Advanced Food Packaging

ADMINISTRATIVE/DEPARTMENTAL RESPONSIBILITY

Course Coordinator for M.Tech. 1st and 2nd year in Dept. of Bioengineering, Integral University.

Sports Coordinator for Dept. of Bioengineering, Integral University.

STUDENTS SUPERVISION

Ph. D. – Completed: 1

Undergoing: 2

M.Tech. – Completed: 9

B. Tech. - Completed: 4

PUBLISHED/GRANT PATENTS

Title – Composition of protein rich food snack and a method of preparation thereof

Status – **Published (2023) Application No.:202311004846 A**

- Singh, T., Pandey, V.K., Dash, K.K., Zanwar, S. and Singh, R., 2023. Natural bio-colorant and pigments: Sources and applications in food processing. *Journal of Agriculture and Food Research*, 12, p.100628. <https://doi.org/10.1016/j.jafr.2023.100628> .
- Srivastava, S., Pandey, V.K., Singh, R., Dar, A.H. and Bashir, I., 2023. Recent insights on electrostatic filtration and its potential applications in food industry. *Trends in Food Science & Technology*, 136, pp.239-250. <https://doi.org/10.1016/j.tifs.2023.05.002>
- Kumar Pandey, V., Shams, R., Singh, R., Dar, A.H., Pandiselvam, R., Rusu, A.V. and Trif, M., 2022. A comprehensive review on clove (*Caryophyllus aromaticus* L.) essential oil and its significance in the formulation of edible coatings for potential food applications. *Frontiers in Nutrition*, 9, p.987674. <https://doi.org/10.3389/fnut.2022.987674> .
- Singh, R., Singh, P., Pandey, V.K., Dash, K.K., Ashish, Mukarram, S.A., Harsányi, E. and Kovács, B., 2023. Microwave-assisted phytochemical extraction from walnut hull and process optimization using Box–Behnken design (BBD). *Processes*, 11(4), p.1243. <https://doi.org/10.3390/pr11041243>
- Tripathi, A., Srivastava, S., Pandey, V.K., Singh, R., Panesar, P.S., Dar, A.H., Rustagi, S., Shams, R. and Pandiselvam, R., 2024. Substantial utilization of food wastes for existence of nanocomposite polymers in sustainable development: a review. *Environment, Development and Sustainability*, 26(10), pp.24727-24753. <https://doi.org/10.1007/s10668-023-03756-2>
- Singh, P., Pandey, V.K., Singh, R., Negi, P., Maurya, S.N. and Rustagi, S., 2024. Substantial Enhancement of Overall Efficiency and Effectiveness of the Pasteurization and Packaging Process Using Artificial Intelligence in the Food Industry. *Food and Bioprocess Technology*, pp.1-16. <https://doi.org/10.1007/s11947-024-03527-5>
- Shafi, Z., Pandey, V.K., Singh, R. and Rustagi, S., 2024. Carbon Dots-Nanosensors: Advancement in Food Traceability for a Sustainable Environmental Development. *Food Control*, p.110693. <https://doi.org/10.1016/j.foodcont.2024.110693>
- Fatima, A., Singh, P., Pandey, V. K., Singh, R., & Rustagi, S. (2024). Exploring the Significance of Protein Concentrate: A Review on Sources, Extraction Methods, and Applications. *Food Chemistry Advances*, 100771. <https://doi.org/10.1016/j.focha.2024.100771>
- Singh, T., Pandey, V.K., Singh, R., Dash, K.K., Kovács, B. and Mukarram, S.A., 2024. Ultrasound assisted extraction of phytochemicals from Piper betel L. *Ultrasonics Sonochemistry*, 106, p.106894. <https://doi.org/10.1016/j.ultsonch.2024.106894>
- Srivastava, S., Pandey, V.K., Tripathi, A., Singh, R. and Dash, K.K., 2024. Ultrasound-assisted oxalate reduction vs. conventional methods: A comparative study in Elephant foot yam (*Amorphophallus*

paeoniifolius) and process optimization using response surface methodology. *Food and Humanity*, 2, p.100217. <https://doi.org/10.1016/j.foohum.2023.100217>

- Singh, P., Pandey, V.K., Singh, R., Singh, K., Dash, K.K. and Malik, S., 2024. Unveiling the potential of starch-blended biodegradable polymers for substantializing the eco-friendly innovations. *Journal of Agriculture and Food Research*, 15, p.101065. <https://doi.org/10.1016/j.jafr.2024.101065>
- Bashir, I., Pandey, V.K., Dar, A.H., Dash, K.K., Shams, R., Mir, S.A., Fayaz, U., Khan, S.A., Singh, R. and Zahoor, I., 2024. Exploring sources, extraction techniques and food applications: a review on biocolors as next-generation colorants. *Phytochemistry Reviews*, pp.1-26. <https://doi.org/10.1007/s11101-023-09908-6>
- Prasad, S., Pandey, V.K., Singh, K., Shams, R., Singh, R. and Goksen, G., 2024. A comprehensive review on nutritional interventions and nutritive elements: Strengthening immunity for effective defense mechanism during pandemic. *Food Science & Nutrition*. <https://doi.org/10.1002/fsn3.4138>
- Singh, P., Pandey, V.K., Tripathi, A., Singh, R., Net, T.S.S., Ramniwas, S. and Pandiselvam, R., 2024. 4D food printing technology: Structural changes to culinary art and beyond. *Journal of Food Process Engineering*, 47(1), p.e14535. <https://doi.org/10.1111/jfpe.14535>
- Pandey, V.K., Srivastava, S., Dash, K.K., Singh, R., Dar, A.H., Singh, T., Farooqui, A., Shaikh, A.M. and Kovacs, B., 2024. Bioactive properties of clove (*Syzygium aromaticum*) essential oil nanoemulsion: A comprehensive review. *Heliyon*. [10.1016/j.heliyon.2023.e22437](https://doi.org/10.1016/j.heliyon.2023.e22437)
- Singh, P., Pandey, V.K., Singh, R. and Dar, A.H., 2024. Spray-freeze-drying as emerging and substantial quality enhancement technique in food industry. *Food Science and Biotechnology*, 33(2), pp.231-243. <https://doi.org/10.1007/s10068-023-01409->
- Singh, P., Singh, R., Bhadauria, V. and Singh, H., 2024. The functionality and extraction of protein from sorghum, finger millet, and Kodo millet: a review. *International Journal of Food Science & Technology*, 59(1), pp.512-521. <https://doi.org/10.1111/ijfs.16747>
- Singh, P., Pandey, V.K., Chakraborty, S., Dash, K.K., Singh, R. and Béla, K., 2023. Ultrasound-assisted extraction of phytochemicals from green coconut shell: Optimization by integrated artificial neural network and particle swarm technique. *Heliyon*, 9(12). [10.1016/j.heliyon.2023.e22438](https://doi.org/10.1016/j.heliyon.2023.e22438)
- Singh, T., Singh, P., Pandey, V.K., Singh, R. and Dar, A.H., 2023. A literature review on bioactive properties of betel leaf (*Piper betel* L.) and its applications in food industry. *Food Chemistry Advances*, 3, p.100536. <https://doi.org/10.1016/j.focha.2023.100536>

- Singh, P., Pandey, V.K., Sultan, Z., Singh, R. and Dar, A.H., 2023. Classification, benefits, and applications of various anti-nutritional factors present in edible crops. *Journal of Agriculture and Food Research*, 14, p.100902. <https://doi.org/10.1016/j.jafr.2023.100902>
- Pandey, V.K., Srivastava, S., Singh, R., Dar, A.H. and Dash, K.K., 2023. Effects of clove essential oil (*Caryophyllus aromaticus* L.) nanoemulsion incorporated edible coating on shelf-life of fresh cut apple pieces. *Journal of Agriculture and Food Research*, 14, p.100791. <https://doi.org/10.1016/j.jafr.2023.100791>
- Pandey, V.K., Singh, P., Srivastava, S., Zanwar, S., Dar, A.H., Singh, R. and Lal, A., 2023. Box–Behnken design based statistical modelling to study the effects of spirulina (*Arthrospira platensis*) incorporation on nutritional standards of vegan snack product. *Journal of Agriculture and Food Research*, 14, p.100700. <https://doi.org/10.1016/j.jafr.2023.100700>
- Srivastava, S., Pandey, V.K., Dash, K.K., Dayal, D., Wal, P., Debnath, B., Singh, R. and Dar, A.H., 2023. Dynamic bioactive properties of nutritional superfood *Moringa oleifera*: A comprehensive review. *Journal of Agriculture and Food Research*, p.100860. <https://doi.org/10.1016/j.jafr.2023.100860>
- Srivastava, S., Pandey, V.K., Singh, R. and Dar, A.H., 2023. Recent insights on advancements and substantial transformations in food printing technology from 3 to 7D. *Food Science and Biotechnology*, 32(13), pp.1783-1804. <https://doi.org/10.1007/s10068-023-01352-8>
- Singh, P., Pandey, V.K., Srivastava, S. and Singh, R., 2023. A systematic review on recent trends and perspectives of biosensors in food industries. *Journal of Food Safety*, 43(5), p.e13071. <https://doi.org/10.1111/jfs.13071>
- Pandey, V.K., Dar, A.H., Rohilla, S., Mahanta, C.L., Shams, R., Khan, S.A. and Singh, R., 2023. Recent insights on the role of various food processing operations towards the development of sustainable food systems. *Circular Economy and Sustainability*, 3(3), pp.1491-1514. <https://doi.org/10.1007/s43615-022-00248-9>
- Pandey, V.K., Srivastava, S., Dash, K.K., Singh, R., Mukarram, S.A., Kovács, B. and Harsányi, E., 2023. Machine Learning algorithms and fundamentals as Emerging Safety Tools in Preservation of fruits and vegetables: a review. *Processes*, 11(6), p.1720. <https://doi.org/10.3390/pr11061720>
- Bashir, I., Dar, A.H., Dash, K.K., Pandey, V.K., Fayaz, U., Shams, R., Srivastava, S. and Singh, R., 2023. Deep eutectic solvents for extraction of functional components from plant-based products: A promising approach. *Sustainable Chemistry and Pharmacy*, 33, p.101102. <https://doi.org/10.1016/j.scp.2023.101102>

- Pandey, V.K., Tripathi, A., Srivastava, S., Dar, A.H., Singh, R., Farooqui, A. and Pandey, S., 2023. Exploiting the bioactive properties of essential oils and their potential applications in food industry. *Food Science and Biotechnology*, 32(7), pp.885-902. <https://doi.org/10.1007/s10068-023-01287-0>
- Pandey, V.K., Tripathi, A., Srivastava, S., Pandey, S., Dar, A.H., Singh, R., Duraisamy, P., Singh, P. and Mukarram, S.A., 2023. A systematic review on immunity functionalities and nutritional food recommendations to develop immunity against viral infection. *Applied Food Research*, 3(1), p.100291. <https://doi.org/10.1016/j.afres.2023.100291>
- Bose, I., Roy, S., Pandey, V.K. and Singh, R., 2023. A comprehensive review on significance and advancements of antimicrobial agents in biodegradable food packaging. *Antibiotics*, 12(6), p.968. <https://doi.org/10.3390/antibiotics12060968>

PAPER PUBLISHED IN INTERNATIONAL CONFERENCES

- Tiwari, K., Negi, P., Rawat, A., Singh, Y. and Singh, R., 2023, May. Advancements in the field of food science with the application of nanotechnology: A review. In *AIP Conference Proceedings* (Vol. 2521, No. 1). AIP Publishing. <https://doi.org/10.1063/5.0113951>
- Tiwari, K., Bafila, P., Negi, P. and Singh, R., 2023, May. The applications of nanotechnology in nutraceuticals: A review. In *AIP Conference Proceedings* (Vol. 2521, No. 1). AIP Publishing. <https://doi.org/10.1063/5.0129695>
- Bose, I., Singh, R., Negi, S. and Tiwari, K., 2023, May. Utilization of edible film and coating material obtained from fruits and vegetables residue: A review. In *AIP Conference Proceedings* (Vol. 2521, No. 1). AIP Publishing. <https://doi.org/10.1063/5.0113952>
- Pant, M., Singh, R., Negi, P., Tiwari, K. and Singh, Y., 2021. A comprehensive review on carbon nano-tube synthesis using chemical vapor deposition. *Materials Today: Proceedings*, 46, pp.11250-11253. <https://doi.org/10.1016/j.matpr.2021.02.646>
- Bose, I., Singh, R., Negi, P. and Singh, Y., 2021. Chitin as bio-based nanomaterial in packaging: A review. *Materials Today: Proceedings*, 46, pp.11254-11257. <https://doi.org/10.1016/j.matpr.2021.02.656>
- Tiwari, K., Singh, R., Negi, P., Dani, R. and Rawat, A., 2021. Application of nanomaterials in food packaging industry: A review. *Materials Today: Proceedings*, 46, pp.10652-10655. <https://doi.org/10.1016/j.matpr.2021.01.385>

PUBLISHED NON-SCI-SCOPUS BUT PEER REVIEWED RESEARCH PAPERS

- Rahul Singh, Khan Chand And N C Shahi: Enhancement of shelf life of fresh cut papaya under different storage condition using edible coating. *International Journal Of Basic and Applied Agricultural Research* Vol.15(1,2):60-67 January-August 2017. (NAAS)
- Rahul Singh and P.K.Omre: Walnut: Nutritional aspects and by Products- A review. *Bulletin of Environment, Pharmacology and Life Sciences* 2018, Vol7[12] 10-12. (NAAS)
- Rahul Singh, P.K. Omre and N.C. Shahi: Microwave assisted extraction of bio-colorant from walnut hull. *International Journal of Chemical Studies* 2020; 8(5): 1505-1508.
- Rahul Singh, P.K. Omre and Manish Pant: Ultrasound assisted extraction of bio-colorant from walnut hull. *Journal of Pharmacognosy and Phytochemistry* 2020; 9(5): 1700-1705.

BOOK CHAPTERS

Rawat, R., Singh, P. and Singh, R., 2024. Single-Cell Protein and Biodiesel Production from Agro-Industrial Waste. In *Agro-waste to Microbe Assisted Value Added Product: Challenges and Future Prospects: Recent Developments in Agro-waste Valorization Research* (pp. 135-156). Cham: Springer Nature Switzerland. https://doi.org/10.1007/978-3-031-58025-3_6
