Name: Er. Sourav Misra

Designation: Scientist, Mechanical Processing Division,
ICAR-NINFET, Kolkata

ARS Discipline: Agricultural Structure and Process Engineering

Educational Qualifications:
B. Tech (Agricultural Engineering), OUAT, Bhubaneswar
M. Tech (University Gold Medalist in Food Processing Engineering), OUAT, Bhubaneswar
PhD (Continuing) (Food Processing Engineering), IIT Kharagpur

Date of joining in ICAR: 11.04.2023

Date of Joining in ICAR-NINFET: 11.04.2023

Contact details: Mob. No.: 9853571836
Email: sourav.misra@icar.gov.in

Area of work: Microencapsulation of Probiotics and Bioactive compounds
Grains Handling and Storage
Functional Food Products Development
Machine learning and RGB imaging

Work Experience:

1. Worked as Junior Research Fellow for one year (2019-20) in IIT Kharagpur in the project entitled "Lactic acid bacteria based biorefineries for converting agro and food-based biomass into PLA and high value-added product" funded by National Agricultural Science Fund (NASF), ICAR.
2. Worked as Trainee in M. Tech In-plant training program on 'Practical training on operation/maintenance of agro processing equipment/technologies' at ICAR-CIAE, Bhopal during May-June 2017.

Research Publications:

1. Misra, S., Pandey, P., & Mishra, H. N. (2021). Novel approaches for co-encapsulation of probiotic bacteria with bioactive compounds, their health benefits and functional food product development: A review. *Trends in Food Science & Technology*, *109*, 340-351.
2. Misra, S., Pandey, P., Dalbhagat, C. G., & Mishra, H. N. (2022). Emerging technologies and coating materials for improved probiotication in food products: A review. *Food and Bioprocess Technology*, *15*(5), 998-1039.
3. Misra, S., Rayaguru, K., Dash, S. K., Mohanty, S., & Panigrahi, C. (2022). Efficacy of microwave irradiation in enhancing the shelf life of groundnut (Arachis hypogaea L.). *Journal of Stored Products Research*, *97*, 101957.
4. Misra, S., Pandey, P., Panigrahi, C., & Mishra, H. N. (2023). Evaluation of potentiality of erythritol on improving the physicochemical, functional, and pasting properties, along with the storability of multigrain flour using chemometric approach. *Journal of Stored Products Research*, *101*, 102088.
5. Misra, S., Pandey, P., Panigrahi, C., & Mishra, H. N. (2023). A comparative approach on the spray and freeze drying of probiotic and Gamma-aminobutyric acid as a single entity: Characterization and evaluation of stability in simulated gastrointestinal conditions. *Food Chemistry Advances*, *3*, 100385.

6. Misra, S., Mandliya, S., Pandey, P., Panigrahi, C., Dalbhagat, C. G., & Mishra, H. N. (2024). Effect of spray-and freeze-dried microcapsules containing probiotics and γ-Aminobutyric acid on nutritional, physicochemical, textural, pasting, rheological, and microstructural characteristics of composite dough. *Food and Bioprocess Technology*, *17*(2), 464-478.
7. Misra, S., Pandey, P., & Mishra, H. N. (2023). Probiotication in multigrain dough and biscuits with the incorporation of erythritol: Evaluation of techno-functional properties using chemometric approach. *Food Science and Technology International*, 10820132231188631.
8. Priyadarsini, D., Rayaguru, K., Misra, S., & Dash, S. K. (2022). Effect of drying techniques on physicochemical properties of oyster mushroom (Pleurotus sajor-caju). *Journal of Food Processing and Preservation*, *46*(7), e16598.
9. Nithya, A., Misra, S., Panigrahi, C., Dalbhagat, C. G., & Mishra, H. N. (2023). Probiotic potential of fermented foods and their role in non-communicable diseases management: An understanding through recent clinical evidences. *Food Chemistry Advances*, *3*, 100381.
10. Mandliya, S., Majumdar, J., Misra, S., Pattnaik, M., & Mishra, H. N. (2023). Evaluation of dry microwave and hot water blanching on physicochemical, textural, functional and organoleptic properties of Indian gooseberry (Phyllanthus emblica). *Journal of Food Measurement and Characterization*, *17*(3), 2881-2891.
11. Misra, S., & Kumar, S. (2020). Ohmic Heating as an Alternative to Conventional Heating for Shelf-Life Enhancement of Fruit Juices. *Int. J. Curr. Microbiol. App. Sci*, *9*(3), 01-07.

Book Chapters:

1. Misra, S., Mandliya, S., & Panigrahi, C. (2022). Ohmic heating: Principles and applications. *Thermal food engineering operations*, 261-299.
2. Misra, S., Kumar, S., Pandey, P., Mandliya, S., Ghosh, M., Srivastava, S., & Mahato, D. K. (2023). Occurrence, Production, Determination, Toxicity, and Control Strategies of Cyclopiazonic Acid in Food Products. In *Mycotoxins in Food and Feed* (pp. 265-286). CRC Press.
3. Panigrahi, C., Misra, S., & Vishwakarma, S. (2023). Flavor Constituents of Fried Foods: A Chemistry Perspective. In *Frying Technology* (pp. 145-181). CRC Press.
4. Ghosh, M., Chakraborty, S., Misra, S., Srivastava, S., Bondre, S., Kamle, M., ... & Mahato, D. K. (2023). PR Toxins: Concerns in Food and Feed with Their Detection and Management Strategies. In *Mycotoxins in Food and Feed* (pp. 239-264). CRC Press.

Paper Presentations:

1. Misra S, Thakur A & Mishra H N (2019). Development of low-calorie multigrain biscuits with probiotic effect. National Conference on Advances in Food Processing for Sustainable Food Security (AFP). NIT Rourkela, Odisha, India, May 17 – 18.

2. Misra, S. & Mishra, H. N. (2022). Characterization of spray dried co-microcapsules containing probiotic culture Lactococcus lactis SKL 13 and γ-aminobutyric acid (GABA) entrapped in a ternary wall matrix, in Proceedings of the 3rd international electronic conference on Foods: "Food, Microbiome, and Health - A Celebration of the 10th Anniversary of Foods' Impact on our Wellbeing". MDPI: Basel, Switzerland.

List of Awards and Honors:

1. Recipient of University Gold Medal for securing the first position in first class in M. Tech (Agril. Engg) examination in Processing and Food Engineering for the year 2018.
2. Received INSPIRE Fellowship under INSPIRE Program under Ministry of Science & Technology, Department of Science & Technology, Government of India for pursuing full-time doctoral (Ph.D.) Program at Indian Institute of Technology Kharagpur in 2020.
3. Received Young Achiever Award from Institute of Scholars, Bengaluru (An ISO certified & registered under MSME & Corporate Affairs, Govt. of India) in the year 2020.

Training program attained:

- ✓ Foundation Course for Agricultural Research Service (FOCARS) Training at ICAR-NAARM, Hyderabad from July 18 to October 17, 2023.
- ✓ Orientation Training at ICAR-NINFET, Kolkata from October 30 to November 30, 2023.
- ✓ Professional Attachment Training (PAT) on 'Machine learning and deep learning techniques for classification of blended fibres using FTIR and RGB imaging' at ICAR-CIPHET, Ludhiana from December 04, 2023 to March 03, 2024.
- ✓ Online training program on 'Image processing for analysis of agri-food commodities using MATLAB' organized by ICAR-CIPHET, Ludhiana during 8-17 January 2024.
- ✓ National level training on 'Production and retting technology of Jute/Mesta/Ramie/Sunhemp including other related aspects' sponsored by National Food Security Mission (NFSM), Commercial Crops, Department of Agriculture, Co-operation and Farmers Welfare, Ministry of Agriculture and Farmers Welfare, Govt. of India held at ICAR-NINFET, Kolkata during March 13-15. 2024.

On going Projects:

Name of the project	Level of association (PI/Co-PI)	Sponsoring Organization	Duration
Study on Determining Storage Losses of Pulses Stored in Warehouses and to Recommend Norms for Loss/Gain during Long Term Storage	CC-Co-PI	Department of Consumer Affairs (DoCA), MOCAF&PD, GoI	42 months w.e.f. July 2023