Professional

Curriculum Vitae

Shivanand S. Shirkole, PhD

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Shivanand S. Shirkole pursued his BTech in Agricultural Engineering from Mahatma Phule Krishi Vidyapeeth Rahuri, Maharashtra (India) followed by his MTech in Agricultural Process Engineering with the best research award for his master thesis from Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola, Maharashtra (India). After a stint in industrial R&D as a Plant Engineer at Vibha Agrotech Ltd., Hyderabad, India he joined the National Institute of Technology (NIT), Rourkela, Odisha (India) to pursue PhD in Food Process Engineering with a full-time fellowship from the Ministry of Human Resource Development (MHRD), Government of India, New Delhi. He received the Best Paper Presentation Award for his doctoral work during the 10th Asia Pacific Drying Conference at the hands of Prof. Arun S. Mujumdar, Editor-in-Chief, Drying Technology – an International Journal. He had also been proactively involved in the opening of the Association of Food Scientists & Technologists (AFSTI) Chapter at NIT Rourkela and worked as an Executive Member of the AFSTI, NIT Rourkela Chapter. He has over 2 years of experience as a Postdoctoral Research Associate at NIT Rourkela and ICT Mumbai, ICT-IOC Campus Bhubaneswar, India. He worked as an Assistant Professor of Food Technology at ICT Mumbai, ICT-IOC Campus Bhubaneswar, India for more than 3 years. Currently, he is working as an Associate Professor of Food Technology along with Dean - Research and Development and Director – Internal Quality Assurance Cell (IQAC) at D. Y. Patil Agriculture and Technical University Talsande, Kolhapur, India. Besides, he works as an Associate Editor of Drying Technology – an International Journal by Taylor & Francis, and a reviewer for many high-impact factor international journals. He is passionate for innovation and technology for farm-to-fork solutions.

Statistically Speaking on Publications and Editorials...

Research Papers:	*Conference Papers:*	*Book Chapters:*	*Book:*
37	*21*	*17*	*03*

Patents:	*Guest Editorials:*	*Journal Special Issue Guest Editorships:*	*Invited Talks:*
04	*11*	*07*	*11*

Number of Students/Interns Supervised/Mentored/Guided:

Program	*No. of Students*	*Year*	*Role*
PhD Thesis *Food Science and Technology, DYP-ATU, Kolhapur*	04	2024-2025*	Guide
PhD Thesis – *Civil Engineering, KIIT Bhubaneswar*	01	2022-2025*	Co-Guide
PhD Thesis – *Agricultural Engineering, DYP-ATU, Kolhapur*	01	2022-2025*	DAC Member
PhD Thesis – *Bioscience and Technology, VIT Vellore*	01	2023-2026*	DAC Member
MTech Thesis – *Food Technology, DYP-ATU*	04	2025-2026*	Supervisor
MTech Thesis – *Food Engineering and Technology, ICT-IOCB*	07 04	2020-2022	Supervisor Mentor
MTech Thesis – *Food Engineering and Technology, ICT-IOCB*	10	2021-2023	Mentor
iMTech Thesis – *Chemical Engineering (Major), ICT-IOCB*	09	2022-2023	Supervisor
iMTech Thesis – *Chemical Engineering (Major), ICT-IOCB*	09	2023-2024	Supervisor
Interns (Industry) – *BTech/MTech-Agril. Engg, Vibha Agrotech Ltd.,*	08	2011-2012	Mentor
Interns (Academic) – *iMTech-Chemical Engineering, ICT-IOCB*	24	2020-2024	Supervisor

**Ongoing projects*

Shivanand S. Shirkole, PhD
Associate Professor of Food Technology,
Dean - Research and Development,
Director - Internal Quality Assurance Cell,
D. Y. Patil Agriculture and Technical University (DYP-ATU),
DYP Educational City, Talsande, Kolhapur, Maharashtra 416112, India.
| Established Under Maharashtra Act No. XXXVI of 2020 | Approved by UGC As Per Section 2(F) of UGC ACT 1956) |

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Associate Editor, Drying Technology: An International Journal by Taylor and Francis, Impact Factor: 2.70; (2023)

Founding Associate Fellow: International Research Association for Drying Science and Technology (Macao).

Review Editor, Frontiers in Food Science and Technology: - Editorial Board of Food Process Design and Engineering (Specialty Section of Frontiers in Food Science and Technology).

ORCID ID: 0000-0001-8324-2846, SCOPUS ID: 40462254900

Education:

Qualification	Specialization	University/Board	Year	CGPA
Ph. D.	(Food Process Engg.)	National Institute of Technology, Rourkela - Odisha, India	2014-2019	9.22
M. Tech.	(Agril. Process Engg.)	Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola - Maharashtra, India	2009-2010	8.43
B. Tech.	(Agricultural Engg.)	Mahatma Phule Krishi Vidyapeeth, Rahuri - Maharashtra, India	2004-2008	7.15
NET - 2015	(Agril. Process Engg.)	Agricultural Scientist Recruitment Board, New Delhi	2015	Qualified
NET - 2010	(Post-Harvest Engg. and Technology)	Agricultural Scientist Recruitment Board, New Delhi	2010	Qualified

Broad Areas of Research:

- Low moisture food safety
- Thermal processing of foods

- Computer-aided food engineering
- Industry scale process optimization
- Valorization of food and agricultural wastes
- Phase transition and sorption isotherm modeling
- Phytoremediation of heavy metal-contaminated soil

Awards and Honors:

- **Certificate of Recognition** at the 23rd International Drying Symposium, held in Wuxi, China, during November 22-25, 2024.
- **Certificate of Achievement** at the 7th Food Drying International Conference & Sino-Russian Workshop on Food Quality Control and Energy-Saving Processing held in Wuxi, China on October 17-18, 2023.
- **Certificate of Recognition** at 11th Asia Pacific Drying Conference (ADC2023) Held in Kolkata, India, on Feb 18-19, 2023.
- **Best Paper Presentation Award** at 10th Asia Pacific Drying Conference (ADC-2019) held at Vadodara, India, Dec 14-17, 2019.
- **Doctoral Fellowship** by the Ministry of Human Resource Development (MHRD), Government of India for the PhD program (2014-2019) at the National Institute of Technology, Rourkela, India.
- **Best Research Award** at M. Tech (Agril. Engg.) level during the academic year 2009-10 by Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola - Maharashtra, India.

Technical and Industrial Skills:

Technical Skills:

***Equipment*:** Pilot-scale microwave rotary dryer, Pilot-scale infrared-hot air dryer, Pilot-scale microwave-infrared-ultraviolet sterilizer, Oil expeller, and automated industrial packaging machines.

***Instrument*:** High-performance liquid chromatography (HPLC), Differential scanning calorimeter (DSC), Scanning electron microscope (SEM), Environmental Scanning electron microscope (ESEM), Fluorescence microscope, Haemocytometer, Texture analyzer, Colorimeter, Centrifuge, and Spectrophotometer.

***Computer*:** MS Office, MATLAB, Design Expert, OrginPro, SPSS, Web Design, and WordPress.

***Wet lab*:** Analysis of food components by sophisticated instruments, Basic microbiology lab techniques, Revival of cell culture, Preparation of stock culture, Preparation of spore suspension, Adjustment of spore density, Culturing techniques, and Enumeration of microbes.

Industrial Skills/Knowledge:

Machine design and fabrication, Maintenance work, Industrial automation, Supervisory Control, and Data Acquisition (SCADA) system, Human-Machine Interface (HMI) system, Control Panels, Troubleshooting of sensor and automation failure, Operation and maintenance of Air Handling Units (AHU) for industrial-scale cold storage and Maintenance of LPG gas bullets (15 MT).

Professional Affiliations:

- Indian Society of Agricultural Engineers (ISAE), India (Life Member).
- Association Food Scientists and Technologists (AFSTI), India (Life Member).

Professional Appointments:

- **Director - Internal Quality Assurance Cell** at D. Y. Patil Agricultural and Technical University, Talsande, Kolhapur-416112, India. From November, 2024 to till date**
- **Dean - Research and Development** at D. Y. Patil Agricultural and Technical University, Talsande, Kolhapur-416112, India. From August 2024 to till date**
- **Associate Professor of Food Technology** at the Department of Food Technology, School of Engineering and Technology, D. Y. Patil Agricultural and Technical University, Talsande, Kolhapur-416112, India. From August 2024 to till date**
- **Visiting Faculty of Food Engineering and Technology** at Institute of Chemical Technology Mumbai, ICT-IOC Odisha Campus, Bhubaneswar-751013. From August 2024 to till date**
- **Person-In-Charge (Coordinator) for JoSAA/CSAB 2023 & 2024** for iMTech in Chemical Engineering Admission at ICT-IOC Bhubaneswar – AY 2023-24 & 2024-25.
- **Coordinator - NCDC Project** for central sector scheme for promotion and formation of farmers producers' organization by ICT-IOC Bhubaneswar as a CBBO in the Odisha State – Jan 2022 to August 2024.
- **Chairman**, Admission Committee and Fee Structure Committee, ICT-IOCB – AY 2023-24 & 2024-25.

- **Faculty Coordinator**, Internship and Placement Cell at ICT-IOC Bhubaneswar, Jan 2022 to August 2024.
- **Person-In-Charge for AICTE Extension of Approval Process** of iMTech and 2Yr MTechs Degree programs at ICT-IOCB, Jun 2022 to August 2024.
- **Committee Member**, Finance & Budgeting Committee, Anti-ragging Cell, Merit cum Means Financial Assistantship Committee, Academic Calendar Committee at ICT-IOCB – AY 2023-24 & 2024-25
- **Assistant Professor of Food Technology** at Institute of Chemical Technology Mumbai, ICT-IOC Odisha Campus, Bhubaneswar, April 2021 to August 2024.
- **Executive Committee Member**, Association Food Scientists and Technologists (AFSTI) Rourkela Chapter, NIT Rourkela, India – AY 2019-2021.
- **Educational Expert,** School Management Committee at Vidya Mandir, Mugali, Tal-Gadhinglaj, Dist- Kolhapur, Maharashtra, India – AY 2014-2015.

Professional Services:

- **Scientific Advisor:** Ananta Agro Foods and Beverages Pvt. Ltd., Bhubaneswar, 2023 to till date** (launched instant coffee powder product in the market)
- **Technical Advisor,** Startup Company: Amritattava Nutrition Private Limited, 2021 to till date** (launched dried cashew apple-based product in the market)
- **Mentor/Expert for Startups (Agriculture/Food Processing)** - KIIT-Technology Business Incubator (KIIT-TBI) Bhubaneswar for Startups supported with BIG and SIIP Grants, 2020 to till date**
- **Mentor/Expert for Startups (Agriculture/Food Processing)** - Centre for Cellular and Molecular Platforms (C-CAMP), Bangalore for Karnataka Startup Advancement Program (K-SAP), Mar 2023 to till date**
- **Mentor/Expert for Startups (Agriculture/Food Processing)** - I-Hub Foundation, Indian Institute of Management (IIM) Sambalpur, April 2024 to till date**
- **North-East (India) Anchor Mentor** for Biotechnology Industry Research Assistance Council - Biotechnology Ignition Grant (BIRAC-BIG) Awardees and augmenting North-East (India) innovation ecosystem, June 2023 to till date**
- **Technical Expert** for the online review of BIG Northeast (BIG NER) proposals, Jan 2023 to till date**

- **Super Mentor** for the Biotechnology Industry Research Assistance Council (BIRAC) - SPARSH Social Innovators, June 2022 to till date**
- **Technical expert** for the online review of Biotechnology Ignition Grant (BIG) proposals under BIRAC-BIG by the Department of Biotechnology (DBT), Government of India, 2021 to till date**
- **Associate Editor,** Drying Technology – an International Journal, August 2021 to till date**
- **Review Editor,** Frontiers in Food Science and Technology, Editorial Board of Food Process Design and Engineering (Specialty Section of Frontiers in Food Science and Technology). October 2021 to till date**
- **Assistant Editor,** Drying Technology – an International Journal, August 2020 to August 2021.
- **Reviewers** to many high-impact factor national and international journals, 2017 to till date**

Professional Activities:

- **Organizing Committee Member**, International Conference on Functional Materials and Polymer Technology (ICFMPT-2024) held during March 14-16, 2024, at the Institute of Physics, Bhubaneswar.
- **Organizing Committee Member,** 11th Asia Pacific Drying Conference (ADC) 2023 held at Hotel AaURIS, Kolkata, India, Feb 18-19, 2023.
- **Organizing Committee Member,** Virtual Mini-Symposium: Keynote Lectures by 2020-2021 Arun S. Mujumdar Medal Recipients, held on April 29, 2022. https://doi.org/10.1080/07373937.2022.2082144

Research Projects Completed (Academic and Industry):

- Finish Drying and Microbial Inactivation of Paprika by Combined Microwave-Infrared Radiation ***(Ph.D.)***
- Analysis of Process Parameters for Efficient Drying of Maize Cobs in Double Pass Maize Cob Dryer with 1200 MT Capacity ***(Vibha Agrotech Ltd., Hyderabad)***
- Airflow Balancing of Ducting System for Uniform Temperature and Humidity Distribution in Cold Storage with 6000 MT Capacity ***(Vibha Agrotech Ltd., Hyderabad)***

- Optimization of Process Parameters for Chemical (H2So4) Delinting of Cottonseeds (1.2 TPH) ***(Vibha Agrotech Ltd., Hyderabad)***
- Airflow Resistance of Soybean ***(M. Tech)***
- Moisture Dependent Physical Properties of Paddy ***(B. Tech)***

Industry Collaborative Research Projects:

- Development and Optimization of Coffee Pre-Treatment Process for Higher Quality Coffee with Optimal Acidity with Ananta Agro Foods and Beverages, Bhubaneswar, India. ***(2023-2024, Ongoing)***
- Microwave-Infrared-Ultraviolet Assisted Sterilization of Spices in Collaboration with Twin Engineers, Vadodara, Gujrat, India. ***(2020-2022, Completed)***
- Ultraviolet Assisted Sterilization of Packed Food Products and Spices in Collaboration with Twin Engineers, Vadodara, Gujrat, India. ***(2019-2020, Competed)***
- Infrared Assisted Thermal Processing of Food Products in Collaboration with Litel Infrared Heating Systems Pvt. Ltd, Pune, India. ***(2019-2020, Completed)***

Research Grants / Contracts:

1. Project: Development and Optimization of Coffee Pre-Treatment Process for Higher Quality Coffee with Optimal Acidity ***(Role: PI)***
   Sponsored by: Ananta Agro Foods and Beverages, Bhubaneswar, India.
   Cost: INR 1,00,000.00
   Duration: May-July 2023
2. Project: Design, Optimization, and Demonstration of Chemical Column and Pressure Injection Treatment to Enhance the Shear Strength Characteristics Along with Phytoremediation of the Abandoned Ash Pond ***(Role: Co-PI)***
   Sponsored by: SERB-CRG 2022
   Cost: INR 41,61,454.00
   Duration: Feb 2023 to Feb 2026

Journal Publications: (*Denotes corresponding author)

37. Keshram Dulait, Sharad V. Patil, Paramasivan Balasubramanyam, **Shivanand S. Shirkole**, and Akshaya K. Sahoo., (2024), Production of Kombucha Bacterial Cellulose Using Tea Waste and Alternative Sugar Source for Possible Application in Food Packaging Industry, ***Journal of Food Process Engineering***, (Under Revision).

36. Gaurav Anand, Tuhin K. Jib, Aparupa Pani, **Shivanand S. Shirkole**, Arun S. Mujumdar, S. P. Singh., (2024), Sustainable Remediation Techniques for Fly Ash Disposal Sites and Addressing Challenges in Implementing Phytoremediation Strategies at Field Scale: An Extensive Review, ***Science of the Total Environment***, (Under Revision).
35. Vimal Challana, Ankita Naykodi, **Shivanand Shirkole**, and Akshaya K. Sahoo, (2025), Optimization of UV-C Treatment for Microbial Reduction and Quality Preservation in Kinnow Fruit Juice: Process Modeling and Shelf-Life Evaluation, ***International Journal of Food Microbiology***, (Under Revision).
34. Nikita S. Bhatkar, Vimal Challana, Benu Adhikari, and **Shivanand S. Shirkole***, (2025), Solvent exchange method in the food industry, ***RSC-Sustainable Food Technology***, (Under Revision).
33. Yogesh V Patil, S. B. Patil, **Shivanand S. Shirkole**, J. S. Ghatge, R. V. Powar, Vrushali Y Patil, K Prathapan, and J. A. Khot, (2025), Innovations in fruit pulping and processing: From traditional methods to smart technologies, ***International Journal of Advanced Biochemistry Research***; 9(7):800-816. DOI: 10.33545/26174693.2025.v9.i7j.4842
32. Vimal, Nikita S. Bhatkar, and **Shivanand S. Shirkole**. (2024), Drying of Persimmon Fruit: Effect on Various Quality Characteristics and Applications of the Dried Product, ***Quality Assurance and Safety of Crops & Foods***, DOI: 10.15586/qas.v17i3.1571
31. Nikita S Bhatkar, Admajith M Kaimal, **Shivanand S Shirkole**, Akshaya K Sahoo., (2025), Optimization of microwave-assisted extraction of mucilage from garden cress seeds and its characterization, ***International Journal of Biological Macromolecules***, DOI: 10.1016/j.ijbiomac.2025.145997
30. Vimal Challana, Admajith M Kaimal, **Shivanand S. Shirkole**, Akshaya K Sahoo, (2025), Comparative analysis and investigation of ultrasonication on juice yield and bioactive compounds of kinnow fruit using RSM and ANN models***, Scientific Reports by Springer Nature***, DOI: 10.1038/s41598-025-94640-8
29. Da-Long Jiang, **Shivanand S. Shirkole**, Hao-Yu Ju, Xiao-Xiao Niu, Yong-Kang Xie, Xing-Yi Li, Zi-Fan Lin, Zhi-An Zheng, Hong-Wei Xiao., (2025), An improved infrared combined hot air dryer design and effective drying strategy analysis for sweet potato, ***LWT- Food Science and Technology***, DOI: 10.1016/j.lwt.2024.117204
28. Sharad V. Patil, Keshram Dulait, **Shivanand S. Shirkole**, Bhaskar N. Thorat, Suresh P. Deshmukh., (2024), Dewatering and Drying of Kombucha Bacterial Cellulose for

Preparation of Biodegradable Film for Food Packaging, ***International Journal of Biological Macromolecules***, DOI: 10.1016/j.ijbiomac.2024.136334

27. Nayak Ankita, Sakthivel Deepika, Durgawati, **Shirkole Shivanand**, Zhang Qi, Xiao Hongwei, Sutar Parag Prakash., (2024), Simulation of high-power short time finish microwave drying of onion powder and lethal effects of microwave drying on Bacillus cereus, Journal of Future Foods, DOI: 10.1016/j.jfutfo.2024.07.009
26. Tarik Hadibi, Djamel Mennouche, Abdelghani Boubekri, Müslüm Arıcı, Yunfeng Wang*, Ming Li, Reda Hassanien Emam Hassanien, **Shivanand S Shirkole**., (2024), Experimental Investigation, Performance Analysis, and Optimization of Hot Air Convective Drying of Date Fruits Via Response Surface Methodology, ***Renewable Energy***, DOI: 10.1016/j.renene.2024.120404
25. Pratyasha Singh, Aparupa Pani, Arun S. Mujumdar, **Shivanand S. Shirkole**., (2024), The Role of Artificial Intelligence in Drying and Biomass Valorization in The Field of Phytoremediation of Contaminated Soils, ***Drying Technology***, DOI: 10.1080/07373937.2024.2345123.
24. *Watson A. G., Mujumdar A. S., Thorat B. N., **Shirkole S. S.,** and Bhatkar N. S., (2023), A Simple Solar Crop Drying and Pasteurizing System Appropriate for Smallholder and Subsistence Farmers in Tropical and Subtropical Regions, ***Drying Technology***, DOI: 10.1080/07373937.2023.2182316.
23. Deka D., Annapure U. S., **Shirkole S. S.,** and Thorat B. N., (2023), Techno-economics of Solar Assisted Drying of Small Freshwater Fish to Ensure Global Nutritional Security, ***Drying Technology***, 41(7), 1214-1228, DOI: 10.1080/07373937.2022.2134416.
22. Singh P., *Pani A., Mujumdar A. S., ***Shirkole S. S.,** (2023), Application of Artificial Intelligence in the Field of Phytoremediation – Opportunities, Limitations, and Future Prospects, ***International Journal of Phytoremediation***, 25 (4), 505-523, DOI: 10.1080/15226514.2022.2090500.
21. Bhatkar N. S., **Shirkole S. S.,** Brenan C., & *Thorat B. N., (2022), Pre-Processed Fruits as Raw Materials: Part II – Process Conditions, Demand, and Safety Aspects, ***International Journal of Food Science and Technology***. DOI: 10.1111/ijfs.15887.
20. Bhatkar N. S., **Shirkole S. S.,** Brenan C., & *Thorat B. N., (2022), Pre-Processed Fruits as Raw Materials: Part I – Different Forms, Process Conditions, and Applications, ***International Journal of Food Science and Technology***. DOI: 10.1111/ijfs.1589.

19. Pise V. H., **Shirkole S. S.,** *Thorat B. N., (2022), Visualization of Oil Cells and Preservation During Drying of Betel Leaf (*Piper Betel*) Using Hot-Stage Microscopy, ***Drying Technology***, 40 (12), 2494-2509, DOI: 10.1080/07373937.2022.2048848.
18. Deka D., **Shirkole S. S.,** *Thorat B. N., and Annapure U. S., (2021), Bacteriophage: An Organic Approach to Food Decontamination, ***Journal of Food Processing and Preservation***. DOI: 10.1111/jfpp.16101.
17. Bhatkar N. S., **Shirkole S. S.,** Arun S. Mujumdar A. S. & *Thorat B. N., (2021), Drying of Tomatoes and Tomato Processing Waste: A Critical Review of the Quality Aspects, ***Drying Technology***, 39 (11), 1720-1744, DOI: 10.1080/07373937.2021.1910832.
16. D. Laavanya, **Shirkole S. S.,** *Balasubramanian P., (2021), Current Challenges, Applications and Future Perspectives of SCOBY Cellulose of Kombucha Fermentation, ***Journal of Cleaner Production***, 295, 126454, DOI: 10.1016/j.jclepro.2021.126454.
15. ***Shirkole S. S.,** A. S. Mujumdar, R. Jayabalan and Sutar P. P., (2021), Dry Pasteurization of Paprika (*Capsicum annuum* L.) by Short Time-Intensive Microwave-Infrared Radiation: Inactivation of Salmonella Typhimurium and Aspergillus flavus Considering Quality Degradation Kinetics, ***Food Chemistry***, 338, 128012, DOI: 10.1016/j.foodchem.2020.128012.
14. ***Shirkole S. S.,** R. Jayabalan and Sutar P. P., (2020), Dry Sterilization of Paprika (*Capsicum annuum* L.) by Short Time-Intensive Microwave-Infrared Radiation: Establishment of Process Using Glass Transition, Sorption and Quality Degradation Kinetic Parameters, ***Innovative Food Science and Emerging Technologies***, 62, 102345 DOI: 10.1016/j.ifset.2020.102345.
13. ***Shirkole S. S.,** Mujumdar A. S., and Sutar P. P., (2019), Studies on Thermal Stability of High-Power Short Time Microwave Dried Paprika (*Capsicum annuum* L.) Considering the Interaction of Water Molecules with Sorption Sites, ***Drying Technology***, 39(1), 52-65. DOI: 10.1080/07373937.2019.1693399.
12. ***Shirkole S. S.,** and Sutar P. P., (2018), High Power Short Time Microwave Finish Drying of Paprika (*Capsicum Annuum* L.): Development of Models for Moisture Diffusion and Color Degradation, ***Drying Technology***, 37(2), 253-267. DOI: 10.1080/07373937.2018.1454941.
11. ***Shirkole S. S.,** and Sutar P. P., (2018), Modeling Sorption Phenomena and Moisture Migration Rates in Paprika (*Capsicum Annuum* L.) Using Physicochemical

Characteristics, ***Journal of Food Science and Technology***, 55(2), 678-688, DOI: 10.1007/s13197-017-2977-x.

10. *Kenghe R. N., Nimkar P. M., and **Shirkole S. S.,** (2016), Evaluation of Different Varieties of Lathyrus (*Lathyrus sativus* L.), ***Legume Genomics and Genetics***, 7(8), 1-7, DOI: 10.5376/lgg.2016.07.0008.
9. Bhangare S. C., *Bansude S. N., and **Shirkole S. S.,** (2015), Study on The Performance of Venture Injector Under Different Inlet and Outlet Pressure for Banana Plantation, ***International Journal of Agricultural Engineering***, 8, 75-78.
8. *Kenghe, R. N., Nimkar, P. M., and **Shirkole, S. S.,** (2013), Moisture Dependent Physical Properties of Lathyrus, ***Journal of Food Science and Technology***, 50(5), 856-867, DOI:10.1007/s13197-011-0428-7.
7. *Kenghe, R. N., **Shirkole, S. S.,** and Nimkar, P. M., (2012), Effect of Elevated Moisture Content on Physical Properties of Soybean, ***Thai Journal of Agricultural Science***, 45(3), 127-133.
6. *Kenghe R. N., Kenghe K. R., Nimkar P. M., and **Shirkole S. S.,** (2013), Effect of Bulk Density, Moisture Content, and Grain Size on Vertical Airflow Resistance of Lathyrus (*Lathyrus Sativus* L.) Grains, ***Legume Genomics and Genetics***, 4(2), 3-21, DOI: 10.5376/lgg.2013.04.0002.
5. *Kenghe, R. N., Nimkar, P. M., **Shirkole, S. S.,** and Shinde, K. J., (2012), Airflow Resistance in Soybean, ***International Agrophysics***, 26(2), 137-143. DOI: 10.2478/v10247-012-0020-z.
4. *Kenghe, R. N., Nimkar, P. M., **Shirkole, S. S.,** and Pardeshi, I. L., (2012), Effect of Moisture Content on Various Physical Properties of Lathyrus (*Lathyrus sativus* L.), ***Journal of Agriculture Research and Technology***, 37(2), 289-294.
3. *Kenghe, R. N., Nimkar, P. M., **Shirkole, S. S.,** and Shinde, K. J., (2011), Effect of Moisture Content and Bulk Density on Minimum Fluidization Velocity of Lathyrus (*Lathyrus Sativus* L.) Grain, ***Legume Research: An International Journal***, 34(4), 259-266.
2. *Kenghe, R. N., Nimkar, P. M., and **Shirkole, S. S.,** (2011), Resistance of Bulk Lathyrus to Airflow, ***Acta Agrophysica***, 18(1), 87-99.
1. **Shirkole S. S**., *Kenghe R. N., and Nimkar P. M., (2011), Moisture Dependent Physical Properties of Soybean, ***International Journal of Engineering Science and Technology***, 3, 3807-3815.

Conference Publications:

21. Arun S. Mujumdar and **Shivanand S. Shirkole**., (2024), Role of IDS and Drying Technology Journal in Advancing Global Drying Science, Engineering and Technology, presented in ***23rd International Drying Symposium*** (IDS) – 2024 held on November 22-25, 2024 at Wuxi, China.
20. Sourav Garg, Admajith M. Kaimal, Bhaskar N. Thorat, and **Shivanand S. Shirkole***. (2024), Debittering of Mahua (*Madhuca longifolia*) Butter and Its Application in Food Products to be presented in ***23rd International Drying Symposium*** (IDS) – 2024 held on November 22-25, 2024 at Wuxi, China.
19. Venkat Saicharan Kolli, Admajith M. Kaimal, Bhaskar N. Thorat, and **Shivanand S. Shirkole***, (2024), Optimization of the Drying Process for the Development of Bio-Active Enriched Millet Milk Powder for Improved Nutritional Quality and Sustainability to be presented in ***23rd International Drying Symposium*** (IDS) – 2024 held on November 22-25, 2024 at Wuxi, China.
18. Dulait K., Kaimal A. M., **Shirkole S. S.,** Thorat B. N., (2023), Impact of Resistance Starch on Xerogel Microstructure and Physicochemical Properties During Drying, presented in ***11th Asia Pacific Drying Conference 2023*** (ADC2023) held at Hotel AaURIS, Kolkata, India during Feb 18-19, 2023.
17. Bhatkar N. S., Vimal, **Shirkole S. S.,** Thorat B. N., (2023), Drying of Persimmon Slices (*Diospyros Kaki*) Using Solar Conduction Dryer: Effect of Pretreatment on Quality Characteristics, presented in ***11th Asia Pacific Drying Conference 2023*** (ADC2023) held at Hotel AaURIS, Kolkata, India during Feb 18-19, 2023.
16. Vimal, Bhatkar N. S., **Shirkole S. S.,** (2023), Drying of Persimmon Slices (*Diospyros Kaki*) Using Solar Conduction Dryer: Effect of Pretreatment on Quality Characteristics, presented in ***11th Asia Pacific Drying Conference 2023*** (ADC2023) held at Hotel AaURIS, Kolkata, India during Feb 18-19, 2023.
15. Pani A., and **Shirkole S. S.,** (2022), A Critical Review on Vegetation-Assisted Dewatering and Remediation of Contaminated Industrial Sludge, full paper has been presented in ***22nd International Drying Symposium (IDS)*** held at Worcester, MA during June 26 to June 29, 2022.
14. Singh P., Pani A., **Shirkole S. S.,** (2022), Phytoremedial Efficacy of Lemongrass Under Varying Level of Mine Contaminated Soil, full paper has been presented in ***22nd***

International Drying Symposium (IDS) held at Worcester, MA during June 26 to June 29, 2022.

13. Bhatkar N. S., Pai K., **Shirkole S. S.,** and Thorat B. N., (2022), Drying of Tomatoes & Tomato Processing Waste: A Critical Analysis of Drying and Quality Attributes, full paper has been presented in ***22nd International Drying Symposium (IDS)*** held at Worcester, MA during June 26 to June 29, 2022.
12. **Shirkole S. S.,** and Sutar P. P., (2021), Thermal and Solids Melting Characterization of Paprika (Capsicum annuum L.) for Establishment of High-Power Short Time Combined Microwave-Infrared Assisted Finish Drying Process, full paper has been presented in ***22nd International Drying Symposium*** (IDS held at Worcester, MA during June 26 to June 29, 2022.
11. Mujumdar A. S., and **Shirkole S. S.,** (2020), Plenary talk on "Innovation in Drying Technologies - Current Status and Future Needs" at ***1st International Congress on Drying and Sustainable Development (IC-DSD)*** during February 28-29, 2020 at Agadir (Morocco).
10. **Shirkole S. S.,** (2019), Combined Microwave-Infrared Assisted Drying cum Sterilization of Food Products: Process and Equipment, presented in ***10th Asia Pacific Drying Conference (ADC) - 2019*** held at Vadodara, India, Dec 14-17.
9. **Shirkole S. S.,** and Sutar P. P., (2019), Modeling Combined Microwave-Infrared Assisted Heating of Paprika (Capsicum annuum L.) for Inactivation of *Salmonella spp*., presented in proceedings of ***10th Asia Pacific Drying Conference (ADC) - 2019*** held at Vadodara, India, Dec 14-17.
8. Nayak A, **Shirkole S. S.,** and Sutar P. P. (2019), Simulation of High-Power Short Time Finish Microwave Drying of Onion Powder and Lethal Effects of Microwave Drying on *E. Coli*, *B. Cereus* and *S. Aureus*, presented in proceedings of ***10th Asia Pacific Drying Conference (ADC) - 2019*** held at Vadodara, India, Dec 14-17.
7. **Shirkole S. S.,** and Sutar P. P., (2019), Quality Degradation Kinetics and Inactivation of Salmonella Typhimurium and Aspergillus flavus During High Power Short Time Microwave-Infrared Heating of Paprika (*Capsicum annuum* L.), presented in ***Research Scholars' Week - 2019*** held at National Institute of Technology, Rourkela, India, April 05-06.
6. **Shirkole S. S.,** and Sutar P. P., (2018), Development of Correlations Between Thermal Properties and Water Activity of Paprika (*Capsicum annuum* L.), presented in ***Research***

Scholars' Week - 2018 held at National Institute of Technology, Rourkela, India, April 21-22.

5. **Shirkole S. S.,** and Sutar P. P., (2017), Modeling Physical and Chemical Quality Degradation Kinetics During Pulsed Microwave-Assisted Finish Drying-Cum-Sterilization of Paprika, presented in ***9th Asia Pacific Drying Conference (ADC) - 2***017 held at Wuxi, China, Sept 24-26.
4. **Shirkole S. S.,** and Sutar P. P., (2017), Shelf-Life Prediction of LDPE Packed Paprika (*Capsicum annuum* L.) Under Different Ambient Conditions, presented in ***National Conference on Spices (NCS - 2017)*** at CSIR-CFTRI, Mysore, India, Feb, 2-3.
3. Kenghe R. N., Nimkar P. M., and **Shirkole S. S.,** (2016), Airflow Versus Pressure Drop for Bulk Lathyrus Grain, presented in ***International Conference on Recent Trends in Engineering and Science*** at Shree Ramchandra College of Engineering, Pune, India, Sept 29-30.
2. **Shirkole S. S.,** and Sutar P. P., (2016), Red Pepper: Post-Harvest Sterilization Practices and Current Issues, presented in ***All India Seminar on Post-Harvest Management of Fruits and Vegetables*** at the Institute of Engineers, Kolkata, India, June 01-02.
1. **Shirkole S. S.,** and Sutar P. P., (2015), Effect of Microwave Heating on Quality of Paprika, presented in ***XXIV-Indian Convention of Food Scientists and Technologists*** at VNMKV, Parbhani, India, Dec 18-19.

Patents:

4. Yogesh V. Patil, Dr. S. B. Patil, **Dr. S. S. Shirkole**, Vrushali Y. Patil, Dr. R. V Powar, Dr. J. S Ghatge, Dr. K. Prathapan, Dr. J. A. Khot, (2025), Dragon Fruit Pulp Extracting Machine, Application for Registration of Design No. 449586-001, filed on Feb 24, 2025.
3. Yogesh V. Patil, Dr. S. B. Patil, **Dr. S. S. Shirkole** & Vrushali Y. Patil, (2025), An Apparatus for Processing Whole Dragon Fruit for Industrial Applications, Indian Patent Application No. 202521051050, filed on May 27, 2025.
2. Amrita Suhasini Suman and **Shivanand S. Shirkole**., (2022), Cashew Apple-Based Food Product. (A final patent has been filed). (Application Number: 202111060955).
1. P. Balasubramanian, **S. S. Shirkole**, B. Das, P. P. Sutar, Amrita Mishra, and R. Jayabalan., (2020), Tea Fungus Cellulosic Film with Particular Tensile Strength for The Production of Compostable Kitchen Trash Bags with Suitable Technology. (A provisional patent has been filed). (Application Number: 202031024226).

Book Chapters:

17. Atharva Bhandare, Anusree Athilattu, Namita Patil, **Shivanand Shirkole**, Gurunath Mote, Prathapan Kesava Pillai, (2025), Nanotechnology Applications in Meat Packaging, Published in ***Innovative Technologies for Meat Processing*** by CRC Press.
16. Darshana Deka, Prashant M. Singh, and **Shivanand S. Shirkole***, (2024), Sustainable Drying Technology of Marine Products, Published in ***Sustainable Drying Technologies of Food*** by CRC Press.
15. Nikita S. Bhatkar, Vimal, Geetanjali Pathania, and **Shivanand S. Shirkole***, (2024), Deaeration, Published in ***Mechanical Separation Processes in the Food Industry*** to be published by Elsevier Production.
14. Vimal, Nikita Bhatkar, and **Shivanand S. Shirkole***, (2024), Guideline and Selection of Dryers for Different Fruit Products, Published in ***Dried Fruit Products*** under Advances in Drying Science and Technology Book Series, by CRC Press.
13. Macherla Sangeetha, Parul Shukla, Keshram Dulait, **Shivanand S. Shirkole***, (2024), Future Prospects and Global Market Demand for Dried Fruit Products, Published in ***Dried Fruit Products*** under Advances in Drying Science and Technology Book Series, by CRC Press.
12. Nikita S. Bhatkar, Vimal, and **Shivanand S. Shirkole***, (2023), Future Prospect and Global Market Demand for Dried Herbs, Spices, and Medicinal Plants, Published in ***Drying of Herbs, Spices, and Medicinal Plants*** under Advances in Drying Science and Technology Book Series, by CRC Press.
11. Ching Lik Hii* and **Shivanand S. Shirkole**, (2023), Overview of the Global Market for Dried Herbs, Spices, and Medicinal Plants, Published in ***Drying of Herbs, Spices, and Medicinal Plants*** under Advances in Drying Science and Technology Book Series, by CRC Press.
10. Chung Lim Law, **Shivanand S. Shirkole**, and Sachin V Jangam*, (2023), Miscellaneous Drying Techniques for Particulates, Published in ***Particulate Drying: Techniques and Industry Applications*** under Advances in Drying Science and Technology Book Series, by CRC Press.
9. Chung Lim Law, **Shivanand S. Shirkole**, and Sachin V Jangam*, (2023), Introduction to Particulate Drying, Published in ***Particulate Drying: Techniques and Industry***

Applications under Advances in Drying Science and Technology Book Series, by CRC Press.

8. **Shivanand S. Shirkole*** and Parag Prakash Sutar, (2023), Microwave Assisted Processing of Food, Published in ***Unit Operations in Food Processing***, NIPA® Genx Electronic Resources & Solutions Pvt. Ltd., New Delhi, India.
7. **Shivanand S. Shirkole***, Arun S. Mujumdar, and G. S. V. Raghavan., Drying of Foods: Principles, Practices and New Developments, (2023), Published in Volume 10: ***Drying Technology in Food Processing***, under Book Series: Unit operations and processing equipment in the food industry, by Elsevier Publication. DOI: 10.1016/B978-0-12-819895-7.00020-1.
6. Gopesh Patel, P.V.V.P. Prudhvi, Abhipriya Patra, Sumit Sudhir Pathak, Akshay D. Sonawane*, **Shivanand S. Shirkole***, (2023), Different Parameters Affecting the Efficiency of Dryers, (2023), Volume 10: ***Drying Technology in Food Processing***, under Book Series: Unit operations and processing equipment in the food industry, by Elsevier Publication. DOI: 10.1016/B978-0-12-819895-7.00016-X.
5. Venkat Saicharan Kolli, Sourav Garg, and **Shivanand S. Shirkole***, (2023), Silos and Bins, Published in Volume 3: ***Transporting Operations of Food Materials within Food Factories*** under Book Series: Unit operations and processing equipment in the food industry, by Elsevier Publication. DOI: 10.1016/B978-0-12-818585-8.00009-X.
4. Sourav Garg, Venkat Saicharan Kolli, and **Shivanand S. Shirkole***, (2022), Sorting Operations for the Classification of Agricultural Crops, Published in Volume 2: ***Postharvest and Post-Mortem Processing of Raw Food Materials*** under Book Series: Unit operations and processing equipment in the food industry, by Elsevier Publication. DOI: 10.1016/B978-0-12-818572-8.00011-5.
3. **Shirkole S. S.*,** and Sutar P. P., (2018), Advances in microwave-assisted processing of milk, Published in ***Novel Dairy Processing Technologies: Techniques, Management, and Energy Conservation***, CRC Press.
2. Lohith Kumar DH*, Saxena N, **Shirkole S. S.,** Saha S., and Manjula B., (2018), Nanoparticles: Classification, Functional Properties, and Toxicity for Food Application, Published in ***Emerging Issues and Challenges in Nanotechnology in Agricultural and Biological Engineering***, CRC Press.

1. Parikh N. R., **Shirkole S. S.,** Sutar P. P.*, and Sutar N. P., (2016), Eggplant Processing and Extraction of Bioactive Components, Published in ***Vegetable Processing and Bioactive Compounds***, Stadium Press (India) Pvt Ltd., New Delhi.

Editorials:

11. **Shivanand S Shirkole**, Aparupa Pani., (2023), Guest editorial: A Concise Historical Account of Drying Technology - An International Journal, ***Drying Technology***, DOI: 10.1080/07373937.2023.2167373.
10. Aparupa Pani, **Shivanand S Shirkole**, Arun S Mujumdar., (2023), Guest editorial: Expert Reviews for Assessment of Recent Developments and Future Prospectives of Global Drying R&D, ***Drying Technology***, DOI: 10.1080/07373937.2023.2164671
9. Pani A., **Shirkole S. S.**, Arun S. Mujumdar A. S., (2022), Guest editorial: Importance of Renewable Energy in the Fight Against Global Climate Change, ***Drying Technology***, DOI: 10.1080/07373937.2022.2119324.
8. Raghavan V., Martynenko A., **Shivanand S. Shirkole S. S.**, (2022), Guest editorial: Role of Drying in Food Quality, Security, and Sustainability, ***Drying Technology***, DOI: 10.1080/07373937.2022.2089819.
7. **Shirkole S. S.**, Pani A., Mujumdar A. S., (2021), Guest editorial: Role of expert reviews for assessment of current developments in global drying R&D, ***Drying Technology***, DOI: 10.1080/07373937.2022.2018822.
6. Adhikari B., **Shirkole S. S.**, Xiao H-W, (2021), Guest editorial: Reviews on drying science and technologies, ***Drying Technology***, DOI: 10.1080/07373937.2021.1948674.
5. **Shirkole S. S.,** and Sutar P. P., (2021), Special Issue for the 10th Asia Pacific Drying Conference (ADC 2019), ***Drying Technology***, DOI: 10.1080/07373937.2021.1877038.
4. **Shirkole S. S.**, Thorat B. N., and Mujumdar A. S., (2021): Critical reviews for facilitating innovations and advances in drying science and technology, ***Drying Technology***, DOI: 10.1080/07373937.2021.1880178.
3. **Shirkole S. S.,** (2020), A bibliometric analysis of publications in Drying Technology in selected drying areas, ***Drying Technology***, DOI: 10.1080/07373937.2020.1834260.
2. **Shirkole S. S.,** and Mujumdar A. S., (2020), Facilitating drying R&D via critical review papers, ***Drying Technology***, DOI: 10.1080/07373937.2020.1822080.

1. **Shirkole S. S.,** (2020), Conference Report of 10th Asia-Pacific Drying Conference (ADC2019), Vadodara, India, December 14-17, 2019, ***Drying Technology***, DOI: 10.1080/07373937.2020.1722452.

Books:

3. Felipe Richter Reis, **Shivanand S. Shirkole**., (2024), Dried Fruit Products, under Advances in Drying Science and Technology Series by CRC Press. (***Under Proofreading***)
   https://www.routledge.com/Dried-Fruit-Products/RichterReis-Shirkole/p/book/9781032495750
2. Ching Lik Hii and **Shivanand S. Shirkole**., (2023), Drying of Herbs, Spices, and Medicinal Plants, under Advances in Drying Science and Technology Series by CRC Press.
   https://www.routledge.com/Drying-of-Herbs-Spices-and-Medicinal-Plants/Hii-Shirkole/p/book/9781032216164
1. Sachin V. Jangam, Chung Lim Law and **Shivanand S. Shirkole**., (2023), Drying of Particulate Solids: Techniques and Industrial Applications under Advances in Drying Science and Technology Series by CRC Press.
   https://www.routledge.com/Particulate-Drying-Techniques-and-Industry-Applications/Jangam-Law-Shirkole/p/book/9781032074672

Journal Special Issue Guest Editorship:

7. Special Issue to Honour Professor Sakamon Devahastin on His 50th Birthday

Guest Editors:

- **Dr. Shivanand S. Shirkole,** ICT Mumbai, ICT-IOC Bhubaneswar
- Prof. Guohua Chen, School of Energy and Environment, City University of Hong Kong, Hong Kong SAR.
- Prof. Somkiat Prachayawarakorn, KMUTT, Thailand
- Prof. Arun S. Mujumdar, McGill University, Canada

https://www.tandfonline.com/toc/ldrt20/42/7?nav=tocList

Journal: Drying Technology – An International Journal

6. Special Issue to Commemorate the 40th Anniversary of Drying Technology (P - II)

Guest Editors:

- Prof. Sakamon Devahastin, KMUTT, Thailand
- **Dr. Shivanand S. Shirkole,** ICT Mumbai, ICT-IOC Bhubaneswar
- Prof. Arun S. Mujumdar, McGill University, Canada

https://www.tandfonline.com/toc/ldrt20/41/16

Journal: Drying Technology – An International Journal

5. Special Issue to Commemorate the 40th Anniversary of Drying Technology (P - I)

Guest Editors:

- Prof. Sakamon Devahastin, KMUTT, Thailand
- **Dr. Shivanand S. Shirkole,** ICT Mumbai, ICT-IOC Bhubaneswar
- Prof. Arun S. Mujumdar, McGill University, Canada

https://www.tandfonline.com/toc/ldrt20/41/6

Journal: Drying Technology – An International Journal

4. Special Issue to Honour Professor Min Zhang, Jiangnan University China

Guest Editors:

- Prof. Xu Duan, Henan University of Science & Technology, Luoyang, China
- Prof. Arun S. Mujumdar, McGill University, Canada
- **Dr. Shivanand S. Shirkole**, ICT Mumbai, ICT-IOC Bhubaneswar

https://www.tandfonline.com/toc/ldrt20/40/12

Journal: Drying Technology – An International Journal

3. Special Issue on Role of Drying in Food Quality, Security, and Sustainability

Guest Editors:

- Prof. GSV Raghavan, McGill University, Canada
- Prof. Alex Martynenko, Dalhousie University, Canada
- **Dr. Shivanand S. Shirkole**, ICT Mumbai, ICT-IOC Bhubaneswar

https://www.tandfonline.com/toc/ldrt20/40/8

Journal: Drying Technology – An International Journal

2. Special Issue on Critical Reviews of Topics in Drying Science and Technology

Guest Editors:

- Prof. Benu Adhikari, RMIT, Australia
- **Dr. Shivanand S. Shirkole**, ICT Mumbai, ICT-IOC Bhubaneswar
- Prof. Hong Wei Xiao, China Agricultural University, Beijing, China

https://www.tandfonline.com/toc/ldrt20/39/11

Journal: Drying Technology – An International Journal

1. Special Issue for the 10th Asia Pacific Drying Conference (ADC 2019)

Guest Editors:

- **Shivanand S. Shirkole**, National Institute of Technology Rourkela, India.
- Dr. Parag P. Sutar, National Institute of Technology Rourkela, India.

https://www.tandfonline.com/toc/ldrt20/39/3

Journal: Drying Technology – An International Journal

Guest/Invited/Expert Talks:

11. Delivered an invited talk on "***Hybridization of Microwaves and Infrared: Drying Cum Sterilization Technology for Low Moisture Foods***" at the 11th Asia Pacific Drying Conference (ADC2023), Kolkata, India on Feb 18, 2023. (Mode: offline)
10. Delivered an invited talk on "***Thermal Characterization and Sorption Modeling for Low Moisture Food Safety***" hosted by the Department of Applied Engineering at the Vignan Foundation for Science, Technology, and Research (VFSTR) University in Vadlamudi, Guntur, Andhra Pradesh, India on February 04, 2023. (Mode: online)
9. Delivered an invited talk on "***Hybridization of Microwaves, Infrared and UV: Drying cum Sterilization Technology for Low Moisture Foods***" during High-End International Workshop sponsored by SERB KARYASHALA organized by Department of Food Process Engineering, NIT Rourkela, on August 22, 2022. (Mode: offline)
8. Delivered an invited talk on "***Waste to Wealth: A Sustainable Food Waste Management Approach***" during a High-End International Workshop sponsored by SERB KARYASHALA organized by the Department of Food Process Engineering, NIT Rourkela, on July 12, 2022. (Mode: offline)
7. Delivered an invited talk on "***W2V focused on Food Sector: Problem Sectors, Scope for Innovation & Entrepreneurship with Case Studies***" for Super Mentor for the BIRAC SPARSH Social Innovators organized by KIIT-TBI, Bhubaneswar, on June 21, 2022. (Mode: offline)
6. Delivered webinar on "***Scientific Article: Read, Write and Publish***" organized by Foodyaari, on June 19, 2022. (Mode: online)
5. Delivered an invited talk on "***Relevance of Food Science in Sustainable Waste Management***" organized by Landmark University, Landmark University, Omu-Aran, Kwara State, NIGERIA, on May 25, 2022. (Mode: online)
4. Delivered an invited talk on "***Recent Developments in Low Moisture Food Safety***" during the online Faculty Development Programme (FDP) organized by JCT College of Engineering and Technology, Coimbatore, INDIA, on April 14, 2022. (Mode: online)
3. Delivered a guest lecture on "***Low Moisture Food Safety***" during the Refresher/Induction Program (sponsored by AICTE-ISTE) organized by Bhai Gurdas Institute of Engineering and Technology, Sangrur, Punjab, INDIA, on February 16, 2022. (Mode: online)

2. Delivered International 14th LUCRID webinar on "***The Use of Low Moisture Approach in Achieving Food Safety***" under the theme entitled "Recent Innovations in Food Processing Technology: Reducing Food Wastage and Improving Food Safety" organized by the Department of Food Science and Nutrition and SDG12 Research Group, Landmark University, Landmark University, Omu-Aran, Kwara State, NIGERIA, on August 24, 2021. (Mode: online)
1. Delivered a national-level webinar on "***Thermal Processing of Foods***" organized by the Department of Agricultural Engineering, Nehru Institute of Technology, Coimbatore, Tamil Nadu, INDIA, on June 16, 2021. (Mode: online)

Courses, Workshops, and Trainings Attended/Participated:

- Completed GIAN Course on Process Safety at NIT Rourkela during Dec 04-09, 2017.
- Participated in the workshop on Awareness Generation on Intellectual Property Rights held at NIT Rourkela on Dec 27, 2017.
- Completed GIAN Course on Innovative Food Processing and Packaging Technologies at NIT Rourkela during Dec 04-09, 2017.
- Completed a short-term training program on Design of Experiments: An Optimization Tool at NIT Rourkela during Dec 21-24, 2015.
- Completed Industrial Training at Water and Land Management Institute (WALMI), Aurangabad, Maharashtra, India, during May 03-25, 2007.
- Completed Industrial Training at North East Region Farm Machinery and Tractor Training Institute, Biswanath Chariali, Assam, India, during June 02-30, 2006.

Number of Students/Interns Supervised/Mentored/Guided:

Sr. No.	Name of Student	Project Title/ Topic	Year
PhD			
1	**Pratyasha Singh** *School of Civil Engineering, KIIT University, Bhubaneswar, India*	Heavy metal accumulation and phytoremediation of mines overburden through pot modelling for sustainable field applications.	2022-2025* Role: Co-Guide
2	**Yogesh V. Patil** *School of Engineering and Technology, Faculty of Agricultural Engineering, DYP-ATU, Kolhapur, India.*	Design and development of pulper for dragon fruit.	2022-2025* Role: DAC Member
3	**Anjaly Shanker M** *School of Bioscience and Technology, Vellore Institute of Technology, Vellore, India.*	Effect of different processing techniques in mycotoxin degradation.	2023-2026* Role: DAC Member

4	**Smital Kamble** *Department of Food Technology, School of Engineering and Technology, DYP-ATU, Kolhapur, India.*	Broad Research Area: Waste to Wealth	2024-2027* Role: Guide
5	**Snehal Bise** *Department of Food Technology, School of Engineering and Technology, DYP-ATU, Kolhapur, India.*	Broad Research Area: Valorization of Food and Agricultural Produce	2024-2027* Role: Guide
MTech (Food Engineering and Technology)			
1	**Sourav Garg** *ICT-IOC Bhubaneswar*	Debittering of Mahua (*Madhuca longifolia*) butter and optimization of oleogel for application in food products	2021-2022 Role: Supervisor
2	**Sruthi Josyula** *ICT-IOC Bhubaneswar*	Investigation of different strategies for reducing oil uptake during Chevon composite meat bar fry and the impact on frying kinetics thereof	2021-2022 Role: Supervisor
3	**Venkat Saicharan Kolli** *ICT-IOC Bhubaneswar*	Development of bio-active enriched millet milk powder formulation	2021-2022 Role: Supervisor
4	**Lopamudra Mahato** *ICT-IOC Bhubaneswar*	Optimization of various non-thermal technologies for bioactive enriched lemon juice	2021-2022 Role: Supervisor
5	**Zaeem Saleem Mohiuddin** *ICT-IOC Bhubaneswar*	Impact of various pre-treatments on drying and quality characteristics of eggplant	2021-2022 Role: Supervisor
6	**Vyankatesh Uday Devde** *ICT-IOC Bhubaneswar*	Mushroom dehydration using solar conduction dryer and its comparison with other drying techniques	2021-2022 Role: Supervisor
7	**Shraddha Arun Yadav** *ICT-IOC Bhubaneswar*	Solar based drying and cooling applications for valorization of vegetables	2021-2022 Role: Supervisor
8	**Sambhaji Nivrutti Gond** *ICT-IOC Bhubaneswar*	Development of novel process for the formulation of the ruby chocolate	2021-2022 Role: Mentor
9	**Dipak Maroti Budruk** *ICT-IOC Bhubaneswar*	Development of jamun seed powder fortified khakhra	2021-2022 Role: Mentor
10	**Sheikh Mohammad Faisal** *ICT-IOC Bhubaneswar*	Fat replacer and alternative sweetener in bakery products	2021-2022 Role: Mentor
11	**Zakiya Abdulsalam Bagwan** *ICT-IOC Bhubaneswar*	Development of novel food product for cancer patients	2021-2022 Role: Mentor
12	**Aditya Suryabhan Ghyar** *ICT-IOC Bhubaneswar*	Non-thermal preservation of health drink prepared from mahua flowers and ragi	2022-2023 Role: Mentor
13	**Adwait S. Jadhav** *ICT-IOC Bhubaneswar*	Development and quality assessment of low-fat elephant foot yam chips	2022-2023 Role: Mentor
14	**Harshal Arun Walanj** *ICT-IOC Bhubaneswar*	Development of low-calorie chocolate by using polyols	2022-2023 Role: Mentor

15	**Keshram Dulait** *ICT-IOC Bhubaneswar*	Development of edible films from kombucha SCOBY and its application in food packaging	2022-2023 Role: Mentor
16	**Shreejita Ghosh** *ICT-IOC Bhubaneswar*	Development and quality assessment of micronutrients enriched probiotic "Mishti doi"	2022-2023 Role: Mentor
17	**Vimal** *ICT-IOC Bhubaneswar*	Process optimization of non-thermal treatments for the preservation of Kinnow fruit juice	2022-2023 Role: Mentor
18	**Kajol Ramesh Phad** *ICT-IOC Bhubaneswar*	Bioactive compound fortified flavored kombucha beverage	2022-2023 Role: Mentor
19	**Nikita Sanjay Bhatkar** *ICT-IOC Bhubaneswar*	Extraction and characterization of garden cress seed mucilage and its possible food application	2022-2023 Role: Mentor
20	**Bhavana V. Hanwate** *ICT-IOC Bhubaneswar*	Development of healthy and nutritious vegan frozen desserts	2022-2023 Role: Mentor
21	**Namrata Ramesh Gurav** *ICT-IOC Bhubaneswar*	Development of bioactive compound enriched elephant foot yam starch-based film	2022-2023 Role: Mentor
Integrated MTech in Chemical Engineering			
1	**Sankalp Nilesh Katariya** *ICT-IOC Bhubaneswar*	Development, characterization, and sensory assessment of green coffee-based kombucha	2022-2023 Role: Supervisor
2	**Aakashraj D. Bhople** *ICT-IOC Bhubaneswar*	Design and techno-economic analysis of a peanut protein extraction processing plant	2022-2023 Role: Supervisor
3	**Siddhi Jitendra Kotwal** *ICT-IOC Bhubaneswar*	Design of cold storage facility for storage of marine products	2022-2023 Role: Supervisor
4	**Yash Pawan Modi** *ICT-IOC Bhubaneswar*	Techno-economic evaluation of biogas production from food waste	2022-2023 Role: Supervisor
5	**Kaustubh Raju Wadekar** *ICT-IOC Bhubaneswar*	Theoretical analysis of mass transfer in a refrigerated food storage	2022-2023 Role: Supervisor
6	**Rutuja Dinesh Parab** *ICT-IOC Bhubaneswar*	Ex-situ development of biocompatible wound dressing from kombucha derived bacterial cellulose (KBC) for medical application on acute wound healing by using povidone iodine (PVA)	2022-2023 Role: Supervisor
7	**Pratyush Shrivastava** *ICT-IOC Bhubaneswar*	Phytoremediation of petroleum waste in petroleum contaminated soil	2022-2023 Role: Supervisor
8	**Manisha Behera** *ICT-IOC Bhubaneswar*	Detection of adulteration in milk using paper-based microfluidic device	2022-2023 Role: Supervisor
9	**Vaibhav Baban Bochare** *ICT-IOC Bhubaneswar*	Study on agriculture waste valorization	2022-2023 Role: Supervisor
10	**Akul Agrawal** *ICT-IOC Bhubaneswar*	Techno-economic evaluation of biogas Production from food waste	2023-2024 Role: Supervisor

11	**Aayush Shah** *ICT-IOC Bhubaneswar*	Design and techno-economic analysis of bio-ethanol production from food waste: an integrated approach	2023-2024 Role: Supervisor
12	**Anushka Shrivastava** *ICT-IOC Bhubaneswar*	Optimization of ultrasound-assisted extraction (UAE) process for extracting phytochemicals from coffee using response surface methodology (RSM) and scaling up using Aspen	2023-2024 Role: Supervisor
13	**Anshika Agrawal** *ICT-IOC Bhubaneswar*	Novel approaches in the valorization of tomato peels and its application	2023-2024 Role: Supervisor
14	**Divyansh Tiwari** *ICT-IOC Bhubaneswar*	Carbon-neutral pathways: unveiling the life cycle assessment of Compressed biogas from waste	2023-2024 Role: Supervisor
15	**Indratanu Saha** *ICT-IOC Bhubaneswar*	Moisture sorption characteristics and thermodynamic properties of fermented food product	2023-2024 Role: Supervisor
16	**Mukul Arora** *ICT-IOC Bhubaneswar*	Drying and thermodynamic analysis of food material	2023-2024 Role: Supervisor
17	**Priyambika Mohanty** *ICT-IOC Bhubaneswar*	Synergistic extraction of polyphenols from fruit peels using a novel deep eutectic solvent and its application for value-added product	2023-2024 Role: Supervisor
18	**Rishika Mohanty** *ICT-IOC Bhubaneswar*	Mass transfer characteristics of drying of food products at low temperatures	2023-2024 Role: Supervisor
Interns (Industry)			
1	**Hemant N. Rokade, MTech** *Dr. PDKV, Akola* At Vibha Agrotech Ltd.,	Training includes various aspects viz., seed processing machinery, packaging machines, cotton packaging machinery, maize cob dryer and highly sophisticated cotton delinting plant and cold storage	2011-2012 Role: Mentor
2	**Tukesh B. Surpam, MTech** *Dr. PDKV, Akola* At Vibha Agrotech Ltd.,	Training includes various aspects viz., seed processing machinery, packaging machines, cotton packaging machinery, maize cob dryer and highly sophisticated cotton delinting plant and cold storage	2011-2012 Role: Mentor
3	**Arshad S. Mulani, MTech** *Dr. PDKV, Akola* At Vibha Agrotech Ltd.,	Training includes various aspects viz., seed processing machinery, packaging machines, cotton packaging machinery, maize cob dryer and highly sophisticated cotton delinting plant and cold storage	2011-2012 Role: Mentor
4	**Prasad Dhanwade, MTech** *Dr. PDKV, Akola* At Vibha Agrotech Ltd.,	Training includes various aspects viz., seed processing machinery, packaging machines, cotton packaging machinery, maize cob dryer and highly sophisticated cotton delinting plant and cold storage	2011-2012 Role: Mentor
5	**Vishal Pandagale, BTech** *Dr. PDKV, Akola* At Vibha Agrotech Ltd.,	Training includes various aspects viz., seed processing machinery, packaging machines, cotton packaging machinery, maize cob dryer and highly sophisticated cotton delinting plant and cold storage	2011-2012 Role: Mentor
6	**Chandrashekar Dalvi, BTech** *Dr. PDKV, Akola* At Vibha Agrotech Ltd.,	Training includes various aspects viz., seed processing machinery, packaging machines, cotton packaging machinery, maize cob dryer and highly sophisticated cotton delinting plant and cold storage	2011-2012 Role: Mentor
7	**Amol Chopade, BTech** *Dr. PDKV, Akola* At Vibha Agrotech Ltd.,	Training includes various aspects viz., seed processing machinery, packaging machines, cotton packaging machinery, maize cob dryer and highly sophisticated cotton delinting plant and cold storage	2011-2012 Role: Mentor
8	**Vishal Ubarhande, BTech**	Training includes various aspects viz., seed processing	2011-2012

	Dr. PDKV, Akola At Vibha Agrotech Ltd.,	machinery, packaging machines, cotton packaging machinery, maize cob dryer and highly sophisticated cotton delinting plant and cold storage	Role: Mentor
Interns (Academic)			
1	**Sankalp Kataria** *ICT-IOC Bhubaneswar*	Thermal Processing of Foods October 2020 to December 2020	2020-2021 Role: Supervisor
2	**Siddhi Kotwal** *ICT-IOC Bhubaneswar*	Thermal Processing of Foods October 2020 to December 2020	2020-2021 Role: Supervisor
3	**Nishant Ranjan** *ICT-IOC Bhubaneswar*	Thermal Processing of Foods October 2020 to December 2020	2020-2021 Role: Supervisor
4	**Vaibhav Bochare** *ICT-IOC Bhubaneswar*	Thermal Processing of Foods October 2020 to December 2020	2020-2021 Role: Supervisor
5	**Abhishek Yadav** *ICT-IOC Bhubaneswar*	Thermal Processing of Foods February 2021 to April 2021	2020-2021 Role: Supervisor
6	**Akul Agrawal** *ICT-IOC Bhubaneswar*	Thermal Processing of Foods February 2021 to April 2021	2020-2021 Role: Supervisor
7	**Shambhavi** *ICT-IOC Bhubaneswar*	Thermal Processing of Foods February 2021 to April 2021	2020-2021 Role: Supervisor
8	**Shubham Agarwal** *ICT-IOC Bhubaneswar*	Thermal Processing of Foods February 2021 to April 2021	2020-2021 Role: Supervisor
9	**Kautilya Jha** *ICT-IOC Bhubaneswar*	Thermal Processing of Foods December 2021 to February 2022	2021-2022 Role: Supervisor
10	**Meyyappan K** *Bombay Technologists – ICT – IOC Bhubaneswar*	Low Moisture Food Safety January 2022 to March 2022	2021-2022 Role: Supervisor
11	**Aakashraj Bhople** *Bombay Technologists – ICT – IOC Bhubaneswar*	Low Moisture Food Safety January 2022 to March 2022	2021-2022 Role: Supervisor
12	**Abhishek Yadav** *Bombay Technologists – ICT – IOC Bhubaneswar*	Low Moisture Food Safety January 2022 to March 2022	2021-2022 Role: Supervisor
13	**Prathamesh Ladda** *Bombay Technologists – ICT – IOC Bhubaneswar*	Low Moisture Food Safety January 2022 to March 2022	2021-2022 Role: Supervisor
14	**Smith Patil** *Bombay Technologists – ICT Jalna*	Low Moisture Food Safety January 2022 to March 2022	2021-2022 Role: Supervisor
15	**Aaroh Akash Mukkirwar** *Bombay Technologists – ICT – IOC Bhubaneswar*	Low Moisture Food Safety January 2022 to March 2022	2021-2022 Role: Supervisor
16	**Shivani Dhembare** *Bombay Technologists – ICT Mumbai*	Low Moisture Food Safety January 2022 to March 2022	2021-2022 Role: Supervisor

17	**Vaidehi Kishor Patil** *Bombay Technologists – ICT Jalna*	Low Moisture Food Safety January 2022 to March 2022	2021-2022 Role: Supervisor
18	**Dhruti Desai** *Bombay Technologists – ICT Mumbai*	Low Moisture Food Safety January 2022 to March 2022	2021-2022 Role: Supervisor
19	**Hiteshree Suresh Sarode** *Bombay Technologists – ICT Jalna*	Low Moisture Food Safety January 2022 to March 2022	2021-2022 Role: Supervisor
20	**Yuga Deepak Raut** *Bombay Technologists – ICT Mumbai*	Low Moisture Food Safety January 2022 to March 2022	2021-2022 Role: Supervisor
21	**Pritam Ratha** *Bombay Technologists – ICT – IOC Bhubaneswar*	Low Moisture Food Safety January 2022 to March 2022	2021-2022 Role: Supervisor
22	**Ashwani Kumar** *ICT-IOC Bhubaneswar*	Overview of the Bakery Industry in Odisha February 2024 to April 2024	2023-2024 Role: Supervisor
23	**Vikal Yadav** *ICT-IOC Bhubaneswar*	Overview of the Dairy Industry in Odisha February 2024 to April 2024	2023-2024 Role: Supervisor
24	**Utkarsh Singh Gautam** *ICT-IOC Bhubaneswar*	Overview of the Spice Industry in Odisha February 2024 to April 2024	2023-2024 Role: Supervisor

Professional Experience:

Sr. No	Designation	Nature of Works	Employer Details	From	To	Experience		
						Yrs.	Months	Days
1	Plant Engineer	Industry-Operations	Vibha Agrotech Ltd., Hyderabad, INDIA	July 12, 2010	Sept 30, 2013	3	2	18
2	Entrepreneur	Entrepreneur	Viru Agrotech Ltd., Kolhapur, INDIA	Oct 01, 2013	July 06, 2014	-	9	05
3	Research Scholar	Teaching & Research	NIT Rourkela, INDIA	July 07, 2014	May 28, 2019	4	10	21
4	Postdoctoral Research Associate	Teaching & Research	NIT Rourkela, INDIA	Jun 24, 2019	August 13, 2020	1	1	20
5	Postdoctoral Research Associate	Teaching & Research	ICT Mumbai, IndianOil Odisha Campus, Bhubaneswar, INDIA	August 14, 2020	April 27, 2021	-	8	13
6	Assistant Professor of Food Technology	Teaching & Research	ICT Mumbai, IndianOil Odisha Campus, Bhubaneswar, INDIA	April 28, 2021	August 28, 2024	3	4	0

7	Associate Professor of Food Technology	Teaching & Research	D. Y. Patil Agriculture and Technical University, Talsande, INDIA.	August 29, 2024	Till date	0	**7***	
			TOTAL EXPERIENCE			**14**	**5***	**17***

**As of April, 2025*

References

- **Dr. Arun S. Mujumdar**, Professor (Retd), Bioresource Engineering, McGill University, Canada & Professor (Retd) Mechanical Engineering, National University of Singapore; Editor-in-Chief, Drying Technology & Founder/Chairman International Drying Symposium Series (1978-now) and Asia Pacific Drying Conference Series (1993-now).
  Email ID- arunmujumdar123@gmail.com.
- **Dr. Parag. P. Sutar**, Head and Associate Professor, Department of Food Process Engineering, National Institute of Technology, Rourkela-769008 (OD), India.
  Email ID- paragsutar@gmail.com.
- **Dr. P. Balasubramanian**, Assistant Professor, Department of Biotechnology & Medical Engineering, National Institute of Technology, Rourkela-769008 (OD), India.
  Email ID- biobala@gmail.com.