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### Research Interests

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- Recovery of natural components from food waste by novel approaches
- Novel thermal and non-thermal processing of foods
- Food process modeling and Bio-chemical engineering
- Rheological and Textural characteristics of food material

### Recognitions and Awards

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- Research grant of INR 32.72 lacs awarded as **Principal investigator** by Department of Science and Technology (DST) Government of India to conduct research on Ohmic heating based continuous and ascetic processing of viscous food material for shelf life enhancement (2024-2027)
- Research grant of INR 7.00 lacs awarded as **Co-Principal investigator** by JK Science Technology and Innovation Council, Department of Science and Technology, J&K Govt. to conduct research on application of oil extracted from apple waste and low-cost bitter almonds as a cooling and lubricating agent for hard turning of steel (2024-26)
- Research grant of INR 5.00 lacs awarded as **Co-Principal investigator** by JK Science Technology and Innovation Council, Department of Science and Technology, J&K Govt. to conduct research on utilization of poultry byproducts for the extraction of halal gelatin (2024-26)
- Research grant of INR 28.34 lacs awarded as **Co-principal investigator** by Science and Engineering Research Board (SERB) DST Government of India to conduct research on Ultrasound and Infrared assisted processing of aromatic rice (2023-2026)
- Best paper award in **International Conference on Sustainable Development Goals** organized by Islamic University of Science and Technology, Awantipora (J&K) India during 8<sup>th</sup> – 10<sup>th</sup> August 2023
- Research grant of INR 32.95 lacs awarded as **Principal investigator** by Science and Engineering Research Board (SERB) DST Government of India to conduct research on Circular economy approach for valorization of early drop apples (2022-2024)
- Research grant of INR 7.52 lacs awarded as **Principal investigator** by JK Science Technology and Innovation Council, Department of Science and Technology, J&K Govt. to conduct research on valorization of walnut hull (2021-2024)
- Awarded with First position in technical session on “Innovative Approaches in Food Processing” during **SAFETY 2021** Organized by Department of Food Engineering and Technology Tezpur University India and Department of Food Science and Technology, University of Georgia US in association with AFSTI (I) Tezpur chapter during 24-25 June 2021.
- Research grant of INR 14.09 lacs received as **Principal investigator** to perform research on “*Moderate Electric Field and Pressure Assisted Extraction (MEFPAE) of Colorants from Food Waste*” sponsored by MHRD under collaborative research scheme in collaboration with NIT Jalandhar, India and Universidade do Vale do Rio dos Sinos - Campus São Leopoldo, Brazil (2019-2021)
- Travel grant awarded to attend “Sao Paulo School on Advance Science 25th Sept 2017 to 04th Oct 2017” held at University of Campinas, Sao Paulo Brazil
- Awarded with “*Commonwealth split-site scholarship 2016-17*” for performing 12 months PhD research as a visiting PhD Student at the Department of Chemical and Processing Engineering, University of Surrey, Guildford, United Kingdom

- Received JRF and SRF “*Maulana Azad National Fellowship*” (UGC) 2013-14 while pursuing PhD at Tezpur University Assam
- Received “*Merit cum minority scholarship*” from ministry of minority affairs, Govt. of India 2012-13 during M. Tech program.

## Membership

- Life member of Association of Food Scientists and Technologists (AFSTI) India (Member No. AFST/LM/4-2020/SRN/3473)

## National Exams

- National Eligibility Test (NET) 2015 in Food Technology Discipline conducted by Agricultural Scientists Recruitment Board, Indian Council of Agricultural Research.
- Graduate aptitude test in engineering (GATE) 2016 with All India Rank of 442 in Engineering Sciences (XE).

## Publications

### Journal

1. Gul, N., Muzaffar, K., Shah, S. Z. A., Assad, A., **Makroo, H. A.**, & Dar, B. N. (2024). Deep learning hyperspectral imaging: a rapid and reliable alternative to conventional techniques in the testing of food quality and safety. *Quality Assurance and Safety of Crops & Foods*, 16(1), 78-97.
2. Bhat, M. I., Junaid, S., Ishfaq, M., Rafiq, S., Fayaz, I., Mir, J., ... & **Makroo, H. A.** (2024). Comparative study on thermo-mechanical, structural and functional properties of pectin extracted from immature wasted apples and commercial pectin. *International Journal of Biological Macromolecules*, 127658.
3. Rashid, R., Roy, S., Maqbool, N., Bhat, N., Altaf, F., Yadav, A., **Makroo, H. A.** & Aijaz, T. (2024). Recent Developments in Ultrasonication assisted Osmotic Dehydration of Food Materials: A Review. *Food and Humanity*.
4. Rafiq, S., Bhat, M. I., Ahmad, M. I., Rashid, S. J., Fayaz, I., Sofi, S. A., ... & **Makroo, H. A.** (2023). Non-edible biomass as innovative substrate for lipid biosynthesis: a step towards circular economy. *Biomass Conversion and Biorefinery*, 1-13.
5. Rather, J. A., Akhter, N., Ayaz, Q., Mir, S. A., Singh, A., Goksen, G., ... & Dar, B. N. (2023). Fruit Peel Valorization, Phytochemical Profile, Biological Activity, and Applications in Food and Packaging Industries: Comprehensive Review. *Current Food Science and Technology Reports*, 1-17.
6. Seh, M. A., Amin, T., Hussain, S. Z., Bashir, O., Bashir, S., **Makroo, H. A.**, ... & Shah, I. A. (2023). Physicochemical, thermal, pasting, morphological, functional and bioactive binding characteristics of starches of different oat varieties of North-Western Himalayas. *International Journal of Biological Macromolecules*, 126612.
7. Muzaffar, K., Rafiq, S., Sofi, S. A., Rather, J. A., Allai, F., **Makroo, H. A.**, ... & Dar, B. N. (2023). Indian Gooseberry (*Emblica Officinalis*) Pomace: Exploring its Sustainable Application as a Functional Ingredient with Nutritional, Techno-functional, Rheological, and In-Vitro Antioxidant Properties. *International Journal of Food Science & Technology*.
8. Gupta, A. K., Das, T., Kumar, H., Rastogi, S., Espinosa, E., Rincón, E., ... & Mishra, S. (2023). Novel food materials: Fundamentals and applications in sustainable food systems for food processing and safety. *Food Bioscience*, 103013.
9. Rafiq, S., Bhat, M. I., Sofi, S., Muzzafar, K., Majid, D., Dar, B. N., & **Makroo, H. A.** (2023). Bioconversion of agri-food waste and by-products into microbial lipids: Mechanism, cultivation strategies and potential in food applications. *Trends in Food Science & Technology*.
10. Wani, T. A., Majid, D., Dar, B. N., **Makroo, H. A.**, & Allai, F. M. (2023). Utilization of novel techniques in extraction of polyphenols from grape pomace and their therapeutic potential: a review. *Journal of Food Measurement and Characterization*, 1-14.
11. **Makroo, H. A.**, Manzoor, N., Rather, J. A., Ashraf, Q. S., Gupta, A. K., Bora, J., ... & Dar, B. N. (2023). Morphological, Functional, and Physico-chemical Properties of Non-Conventional Starch Derived from Discarded Immature Apples. *Starch-Stärke*, 2200284
12. Kumar, V., Gupta, A. K., Naik, B., & **Makroo, H. A.** (2023). Effect of high  $\gamma$ -irradiation dosage on physico-chemical, functional and emulsion properties of almond gum powder. *International Journal of Biological Macromolecules*, 123898.
13. Sofi, S. A., Muzaffar, K., Farooq, A., Rafiq, S., Majid, D., **Makroo, H. A.**, ... & Dar, B. N. (2023). Spectroscopic

- techniques for elucidation of structural changes in temperate cowpea cultivars under germination: A useful tool for quality determination and industrial application. *Applied Food Research*, 100246.
14. Osama, K., Siddiqui, M. H., **Makroo, H. A.**, & Younis, K. (2023). Development of cookies enriched with fiber and calcium-rich *Neolamarckia cadamba* fruit powder. *Journal of Food Measurement and Characterization*, 1-8.
  15. Bora, J., Mahnot, N. K., **Makroo, H. A.**, & Mahanta, C. L. (2023). Impact of hydrothermal treatments on the functional, thermal, pasting, morphological and rheological properties of underutilized yam starches. *Journal of Food Measurement and Characterization*, 1-16.
  16. Rather, J. A., Yousuf, S., Ashraf, Q. S., Mir, S. A., **Makroo, H. A.**, Majid, D., ... & Dar, B. N. (2023). Nutritional and bioactive composition, nutraceutical potential, food and packaging applications of *Cydonia oblonga* and its byproducts: A review. *Journal of Food Composition and Analysis*, 105000.
  17. Rather, J. A., Akhter, N., Ashraf, Q. S., Mir, S. A., **Makroo, H. A.**, Majid, D., ... & Dar, B. N. (2022). A comprehensive review on gelatin: Understanding impact of the sources, extraction methods, and modifications on potential packaging applications. *Food Packaging and Shelf Life*, 34, 100945.
  18. Naqash, S., Jan, T., Naik, H. R., Hussain, S. Z., Dar, B. N., & **Makroo, H. A.** (2022). Influence of Controlled Curing Process on Physico-chemical, Nutritional, and Bio-active Composition of Brown Spanish Onion. *Journal of Food Composition and Analysis*, 104823.
  19. Kandi, S., **Makroo, H. A.**, & Srivastava, B. (2022). Effect of Cold and Hot-Break Heat Treatments on the Physicochemical Characteristics of Currant Tomato (*Solanum pimpinellifolium*) Pulp and Paste. *Foods* 11(12),1730.
  20. Naqash, S., Naqash, F., Fayaz, S., Khan, S., Dar, B. N., & **Makroo, H. A.** (2022). Application of Natural Antimicrobial Agents in Different Food Packaging Systems and Their Role in Shelf-life Extension of Food: A Review. *Journal of Packaging Technology and Research*, 1-17.
  21. Rather, J. A., Majid, D., Dar, A. H., Amin, T., **Makroo, H.**, Mir, S. A., ... & Dar, B. N. (2022). Extraction of Gelatin from Poultry Byproduct: Influence of Drying Method on Structural, Thermal, Functional and Rheological Characteristics of the Dried Gelatin Powder. *Frontiers in Nutrition*, 1154.
  22. Muzaffar, K., Sofi, S. A., **Makroo, H. A.**, Majid, D., & Dar, B. N. (2022). Insight about the biochemical composition, postharvest processing, therapeutic potential of Indian gooseberry (amla), and its utilization in development of functional foods—A comprehensive review. *Journal of Food Biochemistry*, e14132.
  23. **Makroo, H. A.**, Srivastava, B., & Jabeen, A. (2022). Influence of mild electric field (MEF) on polyphenol oxidase and quality attributes of pineapple juice during ohmic heating. *LWT*, 156, 113021.
  24. Showkat, Q. A., Majid, D., Rather, J. A., Naqash, S., Dar, B. N., & **Makroo, H. A.** (2022). Drying of lotus rhizome slices: Influence of drying conditions on Fourier transform infrared spectroscopy, rheology, functional, and physicochemical characteristics of lotus rhizome powder. *Journal of Food Process Engineering*, 45(2), e13954.
  25. Rather, J. A., **Makroo, H. A.**, Showkat, Q. A., Majid, D., & Dar, B. N. (2022). Recovery of Gelatin from Poultry Waste: Characteristics of the Gelatin and Lotus Starch-based Coating Material and Its Application in Shelf-Life Enhancement of Fresh Cherry Tomato, *Food Packaging and Shelf Life*, 31, 100775.
  26. Naqash, S., Naik, H. R., Hussain, S. Z., Dar, B. N., & **Makroo, H. A.** (2021). Effect of thermal treatment on physicochemical, phytochemical, and microbiological characteristics of brown Spanish onion paste, *Quality Assurance and Safety of Crops & Foods*, 13(4): 1–12.
  27. Maqbool, N., Sofi, S. A., **Makroo, H. A.**, Mir, S. A., Majid, D., & B N Dar (2021). Cooking methods affect quality, bio-functional components, antinutritional compounds and sensory attributes of selected vegetables, *Italian Journal of Food Science*, 33(SP1), 150-162.
  28. **Makroo, H. A.**, Naqash, S., Saxena, J., Sharma, S., Majid, D., and B N Dar (2021). Recovery and Characteristics of Starches from Unconventional Sources and their Potential Applications: A Review. *Applied Food Research*, 1(1), 100001.
  29. Showkat, Q. A., Majid, D., **Makroo, H. A.**, and B N Dar (2021). Physico-mechanical characterization of different grades of Lotus rhizome (*Nelumbo nucifera* Gaertn) for valorisation and smart post-harvest management. *Applied Food Research*, 1(1), 100002.
  30. Naqash, S., Naik, H. R., Dar, B. N., & **Makroo, H. A.** (2021). Different methods for curing of bulb crops: Principle, mechanism and effects on crop quality and its storage. *Scientia Horticulturae*, 289, 110483.
  31. Wani, F. A., Rashid, R., Jabeen, A., Brocheir, B., Yadav, S., Aijaz, T., **Makroo, H. A.**, & Dar, B. N. (2021). Valorization of Food Wastes to Produce Natural Pigments using Non-thermal Novel Extraction Methods: A review. *International Journal of Food Science & Technology*, 56(10), 4823-4833.
  32. Sharma, R., Sharma, S., **Makroo, H. A.**, & Dar, B. N. (2021). Role of pulses to modulate the nutritive, bioactive, and technological functionality of cereal based extruded snacks: A Review. *International Journal of Food Science & Technology*, Published on 30 May 2021, <https://doi.org/10.1111/ijfs.15186>
  33. Amin, T., Naik, H. R., Hussain, S. Z., Rather, S. A., **Makroo, H. A.**, Dar, B. N., ... & Bashir, O. (2021). Functional
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- cake from rice flour subjected to starch hydrolyzing enzymes: physicochemical properties and in vitro digestibility. *Food Bioscience*, 42 101072.
34. Showkat, Q. A., Rather, J. A., Jabeen, A., Dar, B. N., **Makroo, H. A.**, & Majid, D. (2021). Bioactive components, physicochemical and starch characteristics of different parts of lotus (*Nelumbo nucifera* Gaertn.) plant: a review. *International Journal of Food Science & Technology*, 56(5), 2205-2214.
  35. Amin, T., Naik, H. R., Hussain, S. Z., **Makroo, H. A.**, & Rather, S. A. (2020). Effect of storage materials and duration on the physicochemical, pasting and microstructural properties of low glycemic index rice flour. *International Journal of Biological Macromolecules*, 162, 1616-1626.
  36. **Makroo, H. A.**, Majid, D., Siddiqi, M. A., Greiner, R., & Dar, B. N. (2020). COVID-19 Pandemic and its Implications on Food Systems. *Preprints*.
  37. Khan, S. A., Dar, A. H., Bhat, S. A., Fayaz, J., **Makroo, H. A.**, & Dwivedi, M. (2020). High Intensity Ultrasound Processing in Liquid Foods. *Food Reviews International*, 1-25.
  38. **Makroo, H. A.**, Rastogi, N. K., & Srivastava, B. (2020). Ohmic heating assisted inactivation of enzymes and microorganisms in foods: A review. *Trends in Food Science & Technology*, 97, 451-465.
  39. **Makroo, H. A.** Prabhakar, P. K, Rasogi, N. K. & Srivastav, B. (2019). Characterization of Mango Puree based on Total Soluble Solids and Acid Content: Effect on Physico-chemical, Rheological, Thermal and Ohmic Heating Behaviour. *LWT Food Science and Technology*, 103, 316-324.
  40. Manzoor, N., Dar, A. H., Khan, S., Hakeem, H. R., & **Makroo, H. A.** (2019). Effect of Blanching and Drying Temperatures on Various Physico-chemical Characteristics of Green Beans. *Asian Journal of Dairy and Food Research*, 38(3), 213-223.
  41. Zakhvatayeva, A., Zhong, W., **Makroo, H. A.**, Hare, C., & Wu, C. Y. (2018). An experimental study of die filling of pharmaceutical powders using a rotary die filling system. *International Journal of Pharmaceutics*, 553(1-2), 86-96
  42. Khan, S. A., Aslam, R., & **Makroo, H. A.** (2018). High Pressure Extraction and its Application in the Extraction of Bio-active Compounds: A Review. *Journal of Food Process Engineering*, 42(01), e12896
  43. Saxena, J., **Makroo, H. A.**, Bhattacharya, S., & Srivastava, B. (2018). Kinetics of the inactivation of polyphenol oxidase and formation of reducing sugars in sugarcane juice during Ohmic and conventional heating. *Journal of Food Process Engineering*, 41(3), e12671.
  44. **Makroo, H. A.**, Saxena, J., Rastogi, N. K., & Srivastava, B. (2017). Ohmic heating assisted polyphenol oxidase inactivation of watermelon juice: Effects of the treatment on pH, lycopene, total phenolic content, and color of the juice. *Journal of Food Processing and Preservation*, 41(6), e13271.
  45. Saxena, J., **Makroo, H. A.**, & Srivastava, B. (2017). Effect of ohmic heating on Polyphenol Oxidase (PPO) inactivation and color change in sugarcane juice. *Journal of Food Process Engineering*, 40(3), e12485.
  46. **Makroo, H. A.**, Rastogi, N. K., & Srivastava, B. (2017). Enzyme inactivation of tomato juice by ohmic heating and its effects on physico-chemical characteristics of concentrated tomato paste. *Journal of Food Process Engineering*, 40(3), e12464.
  47. Saxena, J. **Makroo, H. A.** and Srivastav, B. (2016). Optimization of Time-Electric Field Combination for PPO Inactivation in Sugarcane Juice by Ohmic Heating and its Shelf-Life Assessment. *LWT Food Science and Technology*, 71, 239-338.
  48. Rafiq, A., **Makroo, H. A.**, & Hazarika, M. K. (2016). Artificial Neural Network-Based Image Analysis for Evaluation of Quality Attributes of Agricultural Produce. *Journal of food processing and preservation*, 40(5), 1010-1019.
  49. Rafiq, A., **Makroo, H. A.**, & Hazarika, M. K. (2015). MATLAB Toolbox for Mathematical Modelling of Drying Kinetics of Tomato. *Indian Journal of Ecology*, 42(2), 444-448.
  50. Rafiq, A., Chowdhary, J., Hazarika, M. K., & **Makroo, H. A.** (2015). Temperature dependence on hydration kinetic model parameters during rehydration of parboiled rice. *Journal of food science and technology*, 52(9), 6090-6094.
  51. Rafiq A., **Makroo H A.**, Sachdeva P. and Sharma S. (2013), Application of Computer Vision System in Food Processing- A Review. *Int. Journal of Engineering Research and Applications*, Vol. 3, 1197-1205.

## Conference

- 1 **Makroo, H. A.** and Srivastava, B. Ohmic Heating as an Alternative Thermal Processing Method for Enzyme Inactivation in Fruit Juice. *50<sup>th</sup> Convention of Indian Society of Agricultural Engineers and Symposium on Agricultural Engineering in National Building: Contribution and Challenges, January 19-21, 2016. ISAE-2016/PDFE/HCP-22.*
  - 2 **Makroo, H. A.**, Srivastava, B. and Saxena, J. Poly-phenols Extraction from Processed Tea Leaves by Ohmic heating. National seminar cum workshop on Innovative Prospectus in Food Processing: Integration of Engineering and Biological Sciences 27-28 March 2015. ISBN 978-93-84388-06-5.
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- 3 **Makroo, H. A.** and Srivastava, B. Effects of Ohmic Heating on Different Liquid Food Materials. Trends and Innovation in Food Processing Technology: Prospects and Challenges 9-10 February 2017.

### Book Chapters

1. Kaloo, I., Naqash, S., Majid, D., **Makroo, H. A.**, & Dar, B. N. (2024). Traditional analytical methods in food industry: Current challenges and issues in food analysis. *Green Chemistry in Food Analysis*, 1-22.
2. Jaiswal, M., Debbarma, M., **Makroo, H. A.**, Koutchma, T., & Srivastava, B. (2023). Food Preservation Using Ultraviolet Light. In *Emerging Technologies in Food Preservation* (pp. 159-198). CRC Press.
3. **Makroo H. A.**, Naqash, F. & Fayaz, S. (2021). Antimicrobial compounds to improve foods, shelf life in Galanakis, C M. (Ed) *Food Waste Recovery 2<sup>nd</sup> Edition* (Accepted: <https://doi.org/10.1016/B978-0-12-820563-1.00020-2>).
4. **H. A. Makroo.**, S. A. Sofi., & B. Srivastava. (2021). Ohmic Heating and its Applications in Food Processing in Neema, P.K (Ed) *Unit Operations in Food Engineering: Fundamentals and Applications*. Accepted
5. Aamir Hussain Dar, **Hilal Ahmad Makroo**, Shafaq Shah, & Shafat Khan (2020). Nuclear Magnetic Resonance (NMR) Spectroscopy for Quality Determination of Fruits and Vegetable in Kuswandi, B and Siddiqui, M. S. (Ed). *Sensor-Based Quality Assessment Systems for Fruits and Vegetables*. Apple Academic press; **ISBN:** 9781771889353.
6. Choudhury, N., Iftikhar, F., & **Makroo, H. A.** (2020). Non-Thermal Processing of Foods: Science, Shelf Life, and Quality. In *Shelf Life and Food Safety* (pp. 181-196). CRC Press.
7. Begum, A., Rizwana, S., & **Makroo, H. A.** (2020). Modeling of the Shelf Life of Foods. In *Shelf Life and Food Safety* (pp. 61-76). CRC Press.
8. **Makroo, H. A.**, Talukdar, P., Hmar, B. Z., & Das, P. P. (2020). Frozen Foods: Science, Shelf Life, and Quality. In *Shelf Life and Food Safety* (pp. 155-164). CRC Press.
9. Tongbram, T., Bora, J., & **Makroo, H. A.** (2020). Fresh and Refrigerated Foods: Science, Shelf Life, and Quality. In *Shelf Life and Food Safety* (pp. 113-140). CRC Press.
10. Majid, D., Sofi, S. A., Jabeen, A., Allai, F. M., **Makroo, H. A.**, & Wani, S. P. (2020). Dried Foods: Science, Shelf Life, and Quality. In *Shelf Life and Food Safety* (pp. 141-154). CRC Press.
11. S. Bashir, A. Jabeen, & **H. Makroo** (2020). Radio Frequency Identification (RFID) in Kuswandi, B and Siddiqui, M. S. (Ed). *Sensor-Based Quality Assessment Systems for Fruits and Vegetables*. Apple Academic press; **ISBN:** 9781771889353.
12. S. Bashir, A. Jabeen, & **H. Makroo**. (2020) Application of Computer Vision System in Fruit Quality Monitoring in Kuswandi, B and Siddiqui, M. S. (Ed). *Sensor-Based Quality Assessment Systems for Fruits and Vegetables*. Apple Academic press; **ISBN:** 9781771889353
13. Dar, A. H., Bashir, O., Khan, S., Wahid, A. & **Makroo, H. A.** (2019). Fresh cut products: Processing operations and equipments in Siddiqui, M. W. (Ed) *Fresh-Cut Fruits and Vegetables: Technologies and Mechanisms for Safety Control*. Academic press, (pp 77-97).
14. Saxena, J. & **Makroo, H. A.** (2019). Fish Freezing: Principles and Practices in Goyal, M. R., Suleria, H. A. R., & Kirubanandan, S. (Eds.). *Technological Processes for Marine Foods, From Water to Fork: Bioactive Compounds, Industrial Applications, and Genomics*. CRC Press. (pp 147-170).

### Conferences/ Workshops

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#### Organized

- 1 Three days International Workshop on “Emerging Trends Based on Artificial Intelligence & Machine learning in Food Processing” by Department of Food Technology, IUST during 23-25 March 2022
- 2 Capacity building workshop on innovation and Entrepreneurship 6th December 2021
- 3 One Day program on “Industry Academia Interface” organized by Department of Food Technology IUST on 10<sup>th</sup> February 2021
- 4 Two days National Workshop on “Food Safety: Current Scenario and Future Challenges” organized by department of Food Technology IUST on 18-19 September 2018
- 5 Two days Outcome Based Education organized by School of Technology IUST on 26-27 March 2018.

#### Invited Lectures/ Talks

1. Invited as a resource person for (14) days High-End on “**Advanced Skill Development in Hazard Analysis and Risk-Based Preventive Controls (HARPC) in Perishable Supply Chain of Major Agricultural Produce of Jammu &**



**Kashmir** sponsored by Science & Engineering Research Board (SERB) organized by Division of Food Science and Technology, FoH, SKUAST-Kashmir Workshop from 09<sup>th</sup> March 2023 to 22<sup>nd</sup> March 2023

2. Invited as a resource person for (14) days High-End Workshop (*Karyashala*) on **Advanced Skill Enhancement in the Development and Quality Characterization of Functional Foods using Extrusion Technology** sponsored by Science & Engineering Research Board (SERB) organized by Division of Food Science and Technology, FoH, SKUAST-Kashmir from 20<sup>th</sup> September, 2022 to 03<sup>rd</sup> October, 2022.
3. Invited as Distinguished Speaker on theme **"Food Processing and Packaging" of National Workshop "Innovations & Sustainability in Food Processing"** on 23<sup>rd</sup> June, 2021 organized by Amity Institute of Food Technology, Amity University UP India.
4. Invited Oral presentation on "Characterization of immature apple starch: Its industrial applications and future scope" at **27th Indian Convention of Food Scientists and Technologists. ICFoST (RAINBOW)** Organized by AFSTI held at Tezpur University from 30/01/2020 to 01/02/2020.

## Presented

1. Poster presentation on "Extraction Assisted by Moderate Electric Field; Sonication and Microwave Heating: Recovery of Oil from Chili Seeds" at **29<sup>th</sup> Indian Convention of Food Scientists and Technologists (ICFoST)**, organized by AFSTI (I) HQ Mysuru, Kollam & Cochin Chapter during 05<sup>th</sup> – 7<sup>th</sup> January 2023 at Thiruvananthapuram, Kerala.
2. Oral presentation on "*Recovery of Starch from Discarded Immature Apples: Study on its Rheological, Pasting, Textural and Morphological Characteristics*" at International Conference on Interface between Agriculture, Food, Chemical and Biological Sciences organized by Department of Food Science and technology, University of Kashmir in collaboration with Association of Food Scientists and Technologists (India) during 27-29 July 2022.
3. **Makroo, H. A.**, Majid, D., & Dar, B. N. (2022). Irradiation based non-thermal approach for decontamination and enzyme inactivation of cereal and cereal based raw materials. In *Proceedings of the DAE-BRNS two-day theme meeting on strategic planning for enhancing research reactor utilization: book of abstracts*.
4. Oral presentation on "Ohmic heating of Different Fruit Materials: Study of Heating Behavior and Energy Performance" at SAFETY 2021 Organized by Department of Food Engineering and Technology Tezpur University India and Department of Food Science and Technology, University of Georgia US in association with AFSTI (I) Tezpur chapter during 24-25 June 2021.
5. **Hilal A Makroo**, Juhi Saxena, Chuan-Yu Wu, Navin K Rastogi and Brijesh Srivastava. "Effects of Electric Field Strength on Characteristics of Pineapple Juice during Ohmic Heating". In 19th International Conference on Food Processing & Technology, 23<sup>rd</sup> – 25<sup>th</sup> October 2017, Paris France. *J Food Process Technol*, DOI: 10.4172/2157-7110-C1-06.
6. **Hilal A. Makroo**, Chuan Y. Wu, Navin K. Rastogi and Brijesh Srivastava. "Ohmic Heating of Litchi Juice: Study on Heating Behaviour and Changes in Various Quality Parameters". In SPSAS Reverse Engineering of Processed Foods, 25 September 2017 to 04 October 2017 at School of Food Engineering, UNICAMP, Campinas Brazil.
7. Saxena, J., **Makroo, H. A.** and Srivastava, B. "Ohmic Heating Assisted Enzyme Inactivation in Liquid Foods". In national seminar cum workshop on Innovative Prospectus in Food Processing: Integration of Engineering and Biological Sciences 27-28 March 2015 at Tezpur University, Tezpur Assam, India.
8. **Makroo, H.A.** and Srivastava, B. "Soaking characteristics of low amylase rice stored at different temperatures" in 7th international food convention on NSUREHEALTHY FOODS held during 18-21 December 2013 at CSIR-CFTRI, Mysore, India.
9. **Makroo, H.A.** and Srivastava, B. "Pasting properties and peroxide value of vacuum packaged traditionally treated low amylase rice of Assam" in 7th international food convention on NSURE- HEALTHY FOODS held during 18-21 December 2013 at CSIR-CFTRI, Mysore, India.
10. Kalita, D., **Makroo, H.A.** and Srivastava, B. "Rheological characteristics of low amylase-wild banana based instant baby food" in 7th international food convention on NSURE- HEALTHY FOODS held during 18-21 December 2013 at CSIR-CFTRI, Mysore, India.
11. Das, H., **Makroo, H. A.**, Hazarika, M.K. and Srivastava B. "Drying and Textural Characteristics of Hydrothermally Pretreated Hot Air Dried "Bhim Kol" (Musa Balbisiana) Slices" in International Conference on IFpvs-2013 held during 10-11 January 2013 at NIFTEM, Sonapat Haryana.
12. Oral presentation in National Workshop on "Advances in applied microbiology and bioprocess engineering" organized by ONGC – centre for petroleum biotechnology, Tezpur University 23 - 24 August 2012.

## Participated

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1. One-day orientation workshop for Principal Investigators on Collaborative Research Scheme held at AICTE New Delhi on 16/07/2019
2. One week "Summer training program on advanced pedagogy and digital tools" IIT Kanpur 13-05-2019 to 17-05-2019
3. One-day workshop on "*Swasth Bharat Yatra*" organized by Department of Food Technology IUST in collaboration with FSSAI Government of India
4. One day "NPTEL Awareness Workshop" conducted by IIT Kanpur at IUST on 30-11-2018.
5. One week "Knowledge Incubation for TEQIP" IIT Kanpur 29-01-2018 to 02-02-2018
6. International conference on "*Recent advances in Food Fortification with Emphasis on Vitamin d Deficiency in Human health*", organized by Department of Food Technology, School of interdisciplinary Sciences and Technology held on 15-16 September 2018 at Jamia Humdard New Delhi
7. One-day workshop on Food Safety January 13, 2013 held at NIFTEM Kundli Haryana, India.
8. National Seminar on "*Role of Bioactive Compounds in Food on Human Health – BIO FOODS 2011*" organized by Department of Food Engineering & Technology Tezpur University, India from 14 to 16 November 2011.

## Trainings

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1. Four days training on Laboratory Management System & Internal Audit based on ISO/IEC 17025:2017 from 20th to 23rd July 2020 conducted by TNS Consulting Gurgaon India
2. One-day training on Catering and COVID – Food Safety Supervisor held at Jaypee University of Information and Technology (JUIT) Wankha Ghat Solan, Himachal Pradesh conducted by TNS Consulting Gurgaon India (Certificate No BCACOV1011341074)
3. One-week short term course on "Recent advances on chemical sciences" held at NIT Srinagar from 08/07/2019 to 12/07/2019.