



# PINKU CHANDRA NATH

PhD Research Scholar

DEPARTMENT OF BIO ENGINEERING, NIT AGARTALA

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Department of Bio  
Engineering, NIT Agartala,  
Jirania-799046

## EDUCATION

### PhD in Bio Engineering

NIT Agartala

2018-ongoing (Thesis submitted)

### M.Tech in Food Processing Engineering

Assam University Silchar

2015-2017

CGPA: 7.99

### B.Tech in Process & Food Engineering

Central Agricultural University Imphal

2010-2014

CGPA: 7.72

### H.S (+2 stage) in Science

TBSE

2010

Marks: 56%

### Madhyamik

TBSE

2008

Marks: 68%

## WORK EXPERIENCE

Quality Executive in Greengrocers Group  
Pani House, Gangtok

June 2014-July 2015

CG Foods

Udhorbond, Silchar

Nov 2017-July 2018

## OPERATING SKILLS

- Texture Analyzer
- Photobioreactor
- Probe Sonicator
- MATLAB Programming
- Origin Pro
- Protein Analyzer
- HPLC
- Centrifuge
- Autoclave
- SDS-PAGE Gel Electrophoresis
- Laminar Air Flow Chamber

## TEACHING SKILLS

Teaching Assistantship in Food Analysis Lab, Food Process & Product Technology Lab, Food Process Engineering Lab, and Engineering Properties of Biological Materials & Food Quality in Bio Engineering Department, NIT Agartala.

## AWARD

PhD MHRD Scholarship

## RESEARCH INTEREST

- Process Engineering for the production of bioproducts using Algal platform.
- Formulation development and quality analysis of food products.
- Process development for value-added products from waste.

## PUBLICATIONS

### SCI/SCIE

1. **Nath, Pinku Chandra**, Amiya Ojha, Shubhankar Debnath, Kumari Neetu, Sayan Bardhan, Priya Mitra, Minaxi Sharma, Kandi Sridhar, and Prakash Kumar Nayak. "Recent advances in valorization of pineapple (*Ananas comosus*) processing waste by-products: A step towards circular bioeconomy." *Trends in Food Science & Technology* 136(2023): 100-111. **(IF: 16.0)**
2. **Nath, Pinku Chandra**, Onkar Nath Tiwari, Indrama Devi, Tarun Kanti Bandyopadhyay, and Biswanath Bhunia. "Biochemical and morphological fingerprints of isolated *Anabaena* sp.: a precious feedstock for food additives." *Biomass Conversion and Biorefinery* 11 (2021): 2723-2733. **(IF: 4.05)**
3. Sharma, Ramesh, **Pinku Chandra Nath**, Kondi Vanitha, Onkar Nath Tiwari, Tarun Kanti Bandyopadhyay, and Biswanath Bhunia. "Effects of different monosaccharides on thermal stability of phycobiliproteins from *Oscillatoria* sp. (BTA-170): Analysis of kinetics, thermodynamics, colour and antioxidant properties." *Food Bioscience* 44 (2021): 101354. **(IF: 5.3)**
4. Sharma, Ramesh, **Pinku Chandra Nath**, Sunil Pabbi, Tarun Kanti Bandyopadhyay, Kondi Vanitha, Nibedita Mahata, Biswanath Bhunia, and Onkar Nath Tiwari. "Production of *Oscillatoria* sp. BTA-170 biomass in photobioreactor: Analysis of composition, drying behavior, sorption isotherm, and powder flow characteristics." *Journal of Food Process Engineering* 45, no. 10 (2022): e14044. **(IF: 2.8)**
5. **Nath, Pinku Chandra**, Tarun Kanti Bandyopadhyay, Nibedita Mahata, Sunil Pabbi, Onkar Nath Tiwari, Mikkili Indira, and Biswanath Bhunia. "Optimization and kinetic study of ultrasonic-mediated phycoerythrin extraction from *Anabaena* sp." *Biomass Conversion and Biorefinery* (2022): 1-12. **(IF: 4.05)**
6. **Nath, Pinku Chandra**, Tarun Kanti Bandyopadhyay, Nibedita Mahata, Onkar Nath Tiwari, Md Nazneen Bobby, Mikkili Indira, and Biswanath Bhunia. "C-phycoerythrin production from *Anabaena* sp. BTA 903: Optimization, production kinetics, thermodynamic, and stability analysis." *Biomass Conversion and Biorefinery* (2023): 1-13. **(IF: 4.05)**
7. **Nath, Pinku Chandra**, Shubhankar Debnath, Kandi Sridhar, Baskaran Stephen Inbaraj, Prakash Kumar Nayak, and Minaxi Sharma. "A Comprehensive Review of Food Hydrogels: Principles, Formation Mechanisms, Microstructure, and Its Applications." *Gels* 9, no. 1 (2022): 1. **(IF: 4.4)**
8. **Nath, Pinku Chandra**, Shubhankar Debnath, Minaxi Sharma, Kandi Sridhar, Prakash Kumar Nayak, and Baskaran Stephen Inbaraj. "Recent Advances in Cellulose-Based Hydrogels: Food Applications." *Foods* 12, no. 2 (2023): 350. **(IF: 5.5)**
9. **Nath, Pinku Chandra**, Amiya Ojha, Shubhankar Debnath, Minaxi Sharma, Kandi Sridhar, Prakash Kumar Nayak, and Baskaran Stephen Inbaraj. "Biogeneration of Valuable Nanomaterials from Agro-Wastes: A Comprehensive Review." *Agronomy* 13, no. 2 (2023): 561. **(IF: 3.9)**
10. **Nath, Pinku Chandra**, Amiya Ojha, Shubhankar Debnath, Minaxi Sharma, Prakash Kumar Nayak, Kandi Sridhar, and Baskaran Stephen Inbaraj. "Valorization of Food Waste as Animal Feed: A Step towards Sustainable Food Waste Management and Circular Bioeconomy." *Animals* 13, no. 8 (2023): 1366. **(IF: 3.2)**

## Other Reputed Journal

1. **Nath, Pinku Chandra**, Deepanka Saikia, Shubhankar Debnath, Ajita Tiwari, and Prakash Kumar Nayak. "Recent advances in valorization of agro-waste: a step towards sustainable development." Indian Journal of Hill Farming (**Accepted**) (**NAAS: 2.9**)
2. **Nath, Pinku Chandra**, and Ajita Tiwari. "Comparative Studies on the Ethnic Fermented Food Products and its Preservation Methods with Special Focus of North-East India." Journal of Ecology and Natural Resources 2022, 6(4): 000319. (DOI: 10.23880/jenr-16000319) (**IF: 2.4**)
3. Bhattacharjee, Debadip, Anwesa Manna, Uma Kumari, **Pinku Chandra Nath**, Anindya Gopal Chatterjee, Tamoghna Karmakar, Taniya Sur, and Soumak Sadhu. "A Case Study on the Determination of the Water Quality from Different Point Sources of North 24 Parganas, West Bengal." International Journal of Research Publication and Reviews 4(2023): 13-16. (ISSN 2582-7421) (<https://doi.org/10.55248/gengpi.2023.4201>)
4. Banik, Shreya, **Pinku Chandra Nath**, and Rupak Roy. "Microbiome and gut-brain axis affecting stress behavior." American Journal of Applied Bio-Technology Research 3(2023): 17-33.

## **BOOK CHAPTERS**

1. Debnath, Shubhankar, Ajita Tiwari, Sahijul Islam, Akshay Sonawane, and **Pinku Chandra Nath**. "Bioremediation of food wastes." Futuristic Trends in Agriculture Engineering & Food Sciences (2022) ISBN: 978-93-95632-76-8 (**Accepted**) (**IIP Proceedings**)
2. Majumdar, Ria, and **Pinku Chandra Nath**. "Carbon Materials for Gas and Bio-Sensing Applications Beyond Graphene." Toxic Gas Sensors and Biosensors 92 (2021): 39-68. (**Materials Research Forum LLC**)
3. **Nath, Pinku Chandra**, Ria Majumdar, Tarun Kanti, Biswanath Bhunia Bandyopadhyay, and Biplab Roy. "Electroactive Polymers for Packaging Technology." Electroactive Polymeric Materials (2022): 311. (**CRC Press**)
4. **Nath, Pinku Chandra**, Nishithendu Bikash Nandi, and Biplab Roy. "Polyethylene Terephthalate-Clay Nanocomposites." Advanced Applications of Micro and Nano Clay II: Synthetic Polymer Composites 129 (2022): 183-202. (**Materials Research Forum LLC**)
5. Bose, Subhojit, Sarit Chakraborty, Biplab Roy, and **Pinku Chandra Nath**. "Superconductors for Large-Scale Applications." Superconductors: Materials and Applications 132 (2022): 79-96. (**Materials Research Forum LLC**)
6. Roy, Biplab, Shamim Ahmed Khan, Sarit Chakraborty, and **Pinku Chandra Nath**. "Polymer composites for humidity sensors." In Polymeric Nanocomposite Materials for Sensor Applications, pp. 267-293. Woodhead Publishing, 2023. (**Elsevier**)

7. **Nath, Pinku Chandra**, Nishithendu Bikash Nandi, Ajita Tiwari, Joydeep Das, and Biplab Roy. "Applications of nanotechnology in food sensing and food packaging." In *Nanotechnology Applications for Food Safety and Quality Monitoring*, pp. 321-340. Academic Press, 2023. **(Elsevier)**
8. **Nath, Pinku Chandra**, Nishithendu Bikash Nandi, Shamim Ahmed Khan, Biswanath Bhunia, Tarun Kanti Bandyopadhyay, and Biplab Roy. "Smart packaging for commercial food products." In *Green Sustainable Process for Chemical and Environmental Engineering and Science*, pp. 197-209. **Elsevier**, 2023.
9. Roy, Biplab, Deepanka Saikia, Prakash Kumar Nayak, Suresh Chandra Biswas, Tarun Kanti Bandyopadhyay, Biswanath Bhunia, and **Pinku Chandra Nath**. "Innovations in smart packaging technologies for monitoring of food quality and safety." In *Green Sustainable Process for Chemical and Environmental Engineering and Science*, pp. 39-58. **Elsevier**, 2023.
10. **Nath, Pinku Chandra**, Biplab Roy, Tarun Kanti Bandyopadhyay, Biswanath Bhunia, and Muthusivaramapandian Muthuraj. "Fundamentals of Enzyme-based Biorefinery for Conversion of Waste to Value-added Products." In *Enzymes in the Valorization of Waste*, pp. 1-24. **CRC Press**, 2023.
11. **Nath, Pinku Chandra**, Biswanath Bhunia, and Tarun Kanti Bandyopadhyay. "Carbon dioxide capture and its enhanced utilization using microalgae." In *Green Sustainable Process for Chemical and Environmental Engineering and Science*, pp. 531-546. **Elsevier**, 2023.
12. **Nath, Pinku Chandra**, Biswanath Bhunia, Tarun Kanti Bandyopadhyay, and Biplab Roy. "Smart packaging to preserve fruit quality." In *Green Sustainable Process for Chemical and Environmental Engineering and Science*, pp. 267-281. **Elsevier**, 2023.
13. Ramesh Sharma, **Pinku Chandra Nath\***, Biswanath Bhunia, and Tarun Kanti Bandyopadhyay. "Microbial Exopolysaccharides: Production, Properties, and Food Applications.", *Frontiers in food science and food process engineering: Novel technologies, safety, packaging, nanotechnology and human health*, Chapter no 23, published by Springer Nature (Accepted for publication)

## CONFERENCE PROCEEDING

1. **Pinku Chandra Nath\***, Onkar Nath Tiwari, Tarun Kanti Bandyopadhyay and Biswanath Bhunia. Effect of Preservatives for Edible C-phycoerythrin from Cyanobacterium *Anabaena* sp. BTA-903. "International conference on Emerging Technologies in Food Processing-II(ETFP-2021)", organized by Ghani Khan Choudhury Institute of Engineering & Technology, Malda, West Bengal, on 25 to 26th March, 2021. **(Accepted for Publication)**
2. **\*Nath, P.C.**, Bandyopadhyay, T.K., & Bhunia, B. (2019). Ethnic Fermented Foods and Beverages of North-East India, "National Conference on Commercial Crops Processing and Value Addition-2019", organized by The Institution of Engineers (India), Tripura State Centre in association with Department of Agriculture & Farmers' Welfare, Govt. of Tripura; College of Agriculture, Tripura; ICAR Tripura Centre; NABARD, Tripura, 10-11th August-2019. **(NCAG-19-1033)**

3. **Pinku Chandra Nath** and Rupok Roy. A Comprehensive Review of Biological Applications of Essential Oils, "International Conference on Materials Science and Mechanical Engineering-2023", organized by the Department of Mechanical Engineering of Regent Education and Research Foundation, Barrackpore, West Bengal, India on 19 to 20th January 2023. **(Accepted for Publication)**
4. Pinku Chandra Nath, Biswanath Bhunia, Ramesh Sharma, Tarun Kanti Bandyopadhyay and Biplab Roy. Characterization of *Spirulina platensis* Powder and its Value Addition to Develop the Food Products, "International conference on Emerging Technologies in Food Processing-I(ETFP-2021)" organized by Ghani Khan Choudhury Institute of Engineering & Technology, Malda, West Bengal, on 10 to 11th January, 2021. **(ISBN-9789394490253)**

## ABSTRACT

1. **Nath, P.C.**, Bandyopadhyay, T.K., & Bhunia, B. (2019). Development of sustainable food processing technologies for quality improvement of pineapple fruit juice, "National Conference on Advances in Food Processing for Sustainable Food Security-2019", organized by Department of Food Process Engineering, National Institute of Technology Rourkela, India, 17-18th May-2019. **(Oral Presentation)**.
2. **Nath, P.C.**, Bandyopadhyay, T.K., & Bhunia, B. (2019). Pigments and its Application in Food Industry, "National Seminar on Modern Trends in Biotechnology for Innovations in Food Biotechnology and Medical Biotechnology-2019", organized by Department of Bioengineering, National Institute of Technology Agartala, Tripura, India, 18-19th October-2019. **(Poster Presentation)**.

## DECLARATION

I hereby declared all the statements made in this application are true, complete & correct to the best of my knowledge & belief.

**Place:** Agartala

**Date:** 08.06.23

**PINKU CHANDRA NATH**