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Date of Birth	10th July 1984
Academic Qualification:	BSc in Zoology (2005) M. Sc in Life Science (2008) M. Tech in Food Science & Technology (2012) Ph.D.in Food Science and Technology (2019) CSIR-Post Doctoral Fellow (2020 to 2023)
Research Interest:	Food Chemistry, Food Packaging, Nano-Food Technology, Agri-Food Technology and Food Formulation
Research Experience:	Nine Years & Eleven months From 22.04.2013 till date
Google Scholar	Dr. Achyuta K Biswal

Ph.D. thesis title, Guide's Name, Institute/Organization/University, Year of Award.

Title: Isolation, identification, physico-chemical Characterization and utilization of protein isolated from mahua (Madhuca latifolia) oil cake

No. 8071/EC.III, Dated 15.11.2019

Research Supervision & Institution:

Emeritus Scientist

Professor, Pramila K Misra

Centre for Surface Science and Technology

Sambalpur University

Odisha, Pin:768019

Work Experience/ Professional Recognition/ Award/ Prize/ Certificate, Fellowship received by the applicant:

Junior Research Fellow: 22.04.2013 to 21.04.2015

Senior Research Fellow: 28.05.2018 to 02.11.2020

Research Associate: 02.11.2020 to 30.11.2023

Best Research Award by Scifather for the Contribution and Honourable Achievement in Innovative Research (Organized by ScienceFather) in the year 2023

**Post-Doctoral Fellow-IIT-Guwahati Technology Innovation Hub (IITG-TIH):
16.01.2024**

Professional Identification

- (1) **Google Scholar:** <https://scholar.google.com/citations?user=bCRSr3sAAAAJ&hl=en>
- (2) **LinkedIn Profile:** [linkedin.com/in/dr-achyut-k-biswal-a8339149](https://www.linkedin.com/in/dr-achyut-k-biswal-a8339149)

PATENT FILED/GRANTED:

- (i) **Indian Patent:** Title of the invention: PRE-MIX COMPOSITION OF RAGI- BASED CAKE AND THE CAKE THEREOF, Application number 202031009943, Filing Date: 08.03.2020. Publication Date in Indian patent journal: 15.5.2020, Office Journal No. 20/2020, Page 18849. **Patent Grant No. 363813**, Date of grant: 31.03.2021, Inventors : Dr. Chandrashree Lenka, Dr. Pramilla Kumari Misra, **Dr. Achyuta Kumar Biswal**, Tripti Pradhan, Tripti Kumari.
- (ii) **German Patent:** Title of the invention: “Zusammensetzung und system zur Konservierung von mangos durch ohmsches blanchieren und analyse der eigenschaften von konservierten mangos” (Composition and system for preserving mangoes by Ohm's blanching and analysis of the properties of preserved mangoes) **Inventors: Dr. Achyuta Kumar Biswal, Prof. Chandrashree Lenka, Prof. Pramila Kumari Misra, Dr. Pradeep Kumar Panda, Dr. Aparajita Priyadarshini, Prof. Kalpana Rayaguru**, Grant Date: October 07, 2023, Patent Number: A23B 7/14; **Application number: 202023106324**
- (iii) **UK Design patent: Title of the invention: “Low Cost Ohmic heating Apparatus for food preservation”, Inventors: Dr. Aparajita Priyadarshini, Prof. Kalpana Rayaguru, Dr. Achyut Kumar Biswal, Dr. Pradeep Kumar Panda, Prof. Pramila Kumari Misra, (Design number: 6329037 and Grant date: 05 December 2023)**
- (iv) **German Patent: Title of the Invention: “Ein Verfahren zur Entwicklung einer vorgemischten Zusammensetzung von ralocaca, einem Ragi-Basier-Backprodukt” Inventors: Miss. Jhulana Rani Behera, Dr. Achyuta Kumar Biswal, Miss. Tripti Kumari, Prof. Chandrashree Lenka, Prof. Pramila K Misra, Miss Tripti Padhan. Application number: 202023106323, Grant Date: 17.01.24.**
- (v) **German Patent.** Title of the invention: “ Zusammensetzung und System zur Synthese und Charakterisierung von zellulosischen Nanokristall aus pflanzlichen Abfällen zur Farbentfernung”(Composition and system for synthesizing and characterizing cellulosic nanocrystal from vegetable waste for dye removal); Inventors: **Dr. Achyuta Kumar Biswal**, Dr. Sourav Chakraborty, Dr. Manas Ranjan Dash, Prof. Pramila Kumari Misra, Dr. Laxmipriya Panda, Dr. Subrat Kumar Pradhan; Filing Date: October 07, 2023; Reference number: 2023100709251300DE ; Application number: 202023105807 ; **Grant date: 06.11.2023.**
- (vi) **Indian Patent:** Title of the invention: "THERAPEUTICS BAKERY PRODUCTS", Inventors: Dr. Chandrashree Lenka, Dr. Pramila Kumari Misra, Tripti Kumari, Jhulana rani Behera, **Dr. Achyuta Kumar Biswal**, Application number: 202131042282, Filing Date 17.9.2021 (FER Responded)
- (vii) **Indian Patent:** Title of the invention: "NOURISHING HEALTH SUPPLEMENT", Applicants & Inventors: Dr. Chandrashree Lenka, Dr. Abhishek Mishra, Dr. Pramila Kumari Misra, **Dr. Achyuta Kumar Biswal**, Truti Kumari, **Application Number: 202131001606**, Filing Date 13.1.2021.
- (viii) **Indian Patent:** Title of the invention (Tentative): “FABRICATION OF A BIODEGRADABLE POLYMERIC FILM FOR FOOD PROCESSING”: Under preparation for filing. Applicants & Inventors: **Dr. Achyuta Kumar Biswal** and Dr. Pramila Kumari Misra

LIST OF INTERNATIONAL PUBLISHED ARTICLES:

- (i) **A. K. Biswal^a**, Pradeepta Kumar Behra^a Pradeep Kumar Panda^b, Jayabrata Saha^c, Pramila Kumari Misra^{a,*} Nutritional and physicochemical characterization of starch isolated from *Colocasia esculenta* and its potential application in edible film packaging, **Int. J. Biol. Macromol. Revision submitted (2024)**

- (ii) **A. K. Biswal**, L. Panda, S. Chakraborty, S. Pradhan, M. R. Dash and P. K. Misra. Production of a nascent cellulosic material from vegetable waste: Synthesis, characterization, functional properties, and its potency for a cationic dye removal, **Int. J. Biol. Macromol.** 242 (4) Elsevier, **IF: 8.02, 124959, Citation:7**
- (iii) **A. K. Biswal**, M. Sahoo, P. K. Suna, L. Panda, C. Lenka, and P. K. Misra. Exploring the adsorption efficiency of a novel cellulosic material for removal of food dye from water, **J. Mol. Liq. Elsevier**, 350 (2022) 118577 **IF: 6.663, Citation: 25**
- (iv) **A. K. Biswal**, S. Mishra, Bhavya M.B., A. K. Samal, R. Merugu, M. K. Singh, P. K. Misra, Isolation, characterization, and investigation of techno-functional characteristics of an assorted shaped starch derived from the fleshy root tuber of wild palm (*Phoenix sylvestris*), **J. Food Meas. Character.** 1- 14(2022), (Springer) **IF: 3.006, Citation: 05.**
- (v) **A. K. Biswal**, C. Lenka, P. K. Panda, J. M. Yang, P. K. Misra, Investigation of the functional and thermal properties of Mahua deoiled cake flour and its protein isolate for prospective food applications, **LWT**, 137(2020)110459 (Elsevier) **IF:6.056, Citation:21**
- (vi) **A. K. Biswal**, P. K. Misra, Biosynthesis and characterization of silver nanoparticles for prospective application of food packaging and biomedical fields, **Mater. Chem. Phys.** 250(2020)123014, Elsevier, **IF:4.778, Citation:90**
- (vii) **A. K. Biswal**, P. K. Panda, J. M. Yang, P. K. Misra, Isolation, process optimization and characterization of the protein from deoiled cake flour of *Madhuca latifolia*, **IET Nanobiotechnol.** 14,(2020)654-661. Wiley, **IF: 2.05. Citation:15**
- (viii) **A. K. Biswal**, A. K. Samal, M. Tripathy, P. K. Misra, Identification of the secondary structure of protein isolated from deoiled cake flour of Mahua (*Madhuca latifolia*), **Mat. Today. Proc.** 9(2019)605-614. Elsevier, **IF: 1.24, Citation: 18**
- (ix) Priyadarshini, A., Rayaguru, K., Routray, W., **Biswal, A. K.**, & Misra, P. K. (2023). Ascertaining optimal ohmic-heating characteristics for preserving mango (*Mangifera indica* L.) pulp through analysis of physicochemical properties and hurdles effect. **Food Chem. Adv. Elsevier**, 3, 100458.
- (x) Aparajita Priyadarshini, Kalpana Rayaguru , **A. K. Biswal** , Pradeep Kumar Panda d , Chandrashree Lenkae , Pramila Kumari Misra. Impact of conventional and ohmic blanching on color, phytochemical, structural, and sensory properties of mango (*Mangifera indica* L.) cubes: A comparative analysis, **Food Chem. Adv. Elsevier**, 2 (2023) 100308. **Citation:06**
- (xi) Pradeep Kumar Panda, Pranjyan Dash, **A. K. Biswal**, Yen-Hsiang Chang, Pramila Kumari Misra & Jen-Ming Yang. Synthesis and Characterization of Modified Poly(vinyl alcohol) Membrane and Study of Its Enhanced Water- Induced Shape-Memory Behavior, **J Polym Environ, (Springer)** (2022) 1-11, **IF: 4.705, Citation: 17**
- (xii) C. Lenka, T. Kumari, S. Biswal, T. Pradhan, **A. K. Biswal**, S. Parida, P. K Misra, Nutritional and Structural composition of Ragi and Wheat flour blended cake and their sensory evaluation, **Int. J. Food Nutri. Sci.** 11(2022), 38-47 (Medknow), **IF: 0.529.**
- (xiii) C. Lenka, T. Kumari, T. Pradham, **A. K. Biswal**, P. K. Misra, Qualitative analysis of low calorie cake formulated with whole wheat flour and its cost effectiveness, **Int. J. Food Nutri. Sci.**, 9 (2020), 44-4 (Medknow), **IF: 0.529.**
- (xiv) J. Saha, **A. K. Biswal**, S. C. Deka, (2015). Chemical composition of some underutilized green leafy vegetables of Sonitpur district of Assam, India. **Int. Food Res. J. IF:1.169, Citation: 62**

LIST OF NATIONAL AND INTERNATIONAL CONFERENCES/ WORKSHOP/ WEBINAR/ ENTREPRENEURSHIP DEVELOPMENT PROGRAM ATTENDED

- (i) Paper presented in **20th National Conference on Surfactant, Emulsions and Bio-colloids** (NATCOSEB XX), Organized by Department of Chemistry, Indian Institute of Technology, Guwahati, 9-11 December 2021.
- (ii) Attended Two-days workshop entitled, **“Intellectual Property Rights”** Organized by Department of Applied Science, SIRT, SAGE University, Indore. 26-27 April 2021.
- (iii) Paper presented in the International Conference on **“Advancements in Polymer Materials (APM-2021)** , 9-13 March, 2021.
- (iv) Attended **International Webinar on Anemia and Reproductive Health** organized by Department of Home Science, Sambalpur University, 6th February 2021.
- (v) Attended one week online **“Entrepreneurship Development Program on ‘Technologies developed by ICAR-NRRI to strengthen rice production”** organized by Agribusiness Incubation Centre, ICAR-National Rice Research.
- (vi) Attended the three-day workshop on **“Research Methodology”** Organized by HRDC, Sambalpur University, Jyoti Vihar, Burla, Odisha on 24-26 Feb, 2018.
- (vii) **Paper presented in International Conference on Recent advanced in Materials Chemistry (RAMC-2017)**” for the period of Feb 24-26, 2017.
- (viii) Paper presented in the **“International Conference on Frontiers in Materials Science & Technology (ICFMST-2015)”** Organized by National Institute of Science & Technology, Berhampur held during 10th-12th Dec 2015.
- (ix) Attended Two-days International Conference on **“Innovative Applications of Chemistry in Pharmacology & Technology (IACPT-2015)”** organized by P.G. Department of Chemistry, Berhampur University, held during Feb 06- 08- 2015.

SUMMARY OF THE RESEARCH WORK DONE

I have been working in the field of Food Science and Technology domain for more than eight years particularly on fundamental and applied aspects of Food Science which have practical importance in formulating different products beneficial for both industrial and domestic sectors (Food and Nutrition, Food technology, Chemical processes, Nanotechnology, Textile sectors, cosmetics & detergency; drug delivery & pharmaceuticals; Environmental treatment etc.). My research commitment for product development and optimization, waste utilization and environmental remediation is a great contribution towards solving the fundamental needs of the people such as health, energy, agriculture, food technology, and luxury.

REFEREES

1. Prof. Pramila K. Misra, Retired Professor of Centre of Studies in Surface Science and Technology, School of Chemistry, Sambalpur University, Jyoti Vihar 768019, Odisha, India. E-mail: pramilamisra@rediffmail.com
2. Prof. Santosha K. Dwivedy Dibyakant Seth, IIT Guwahati, Department of Mechanical Engineering, Assam, India. E-mail: dwivedy@iitg.ac.in