Mr. Debajyoti Kundu

M.Sc, M.Tech

Address

Permanent: Arambagh, Hospital Road, Hooghly, 712601

Communication: Indian Institute of Technology Kharagpur, West Midnapore, 721302, West Bengal, India

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Mobile: +919749174648

Date of Birth: 17.09.1989

Sex : Male

Nationality : Indian

Languages Known : Bengali, Hindi, English

Scholastic Profile:

https://scholar.google.co.in/citations?hl=en&user=9EAi4Z0AAAAJ

https://www.researchgate.net/profile/Debajyoti_Kundu

ORCID: orcid.org/0000-0002-3981-3055

Research ID: F-1271-2018

Scopus Author ID: 57191524482

SUMMARY OF RESEARCH INTEREST

- Valorization of agro-waste/fruit waste in a circular bioeconomic approach
- Bio Energy production from waste substances
- Strategic management of carbon accumulation in aquatic pond
- Reproductive performance of fish under simulated greenhouse condition
- Wetland ecosystem management
- Pollutants bioaccumulation study of different trophic level

ACADEMIC QUALIFICATION

Degrees/Year	Institution/Board	Discipline
Ph.D. (Thesis Submitted)	Indian Institute of Technology Kharagpur	Food biotechnology and Bioenergy
Master of Technology 2014	University of Kalyani	Environmental Management
Master of Science 2012	The University of Burdwan	Environmental Science
Bachelor of Science 2010	The University of Burdwan	Environmental Science
Higher Secondary Exam 2007	WBCHSE	Science
Secondary Exam 2005	WBBSE	

POSTGRADUATE THESIS TOPIC

PhD: A close loop process development on valorization of Assam lemon for juice and biofuels production: An integrated eco-friendly biorefinery approach

M.Sc: Analysis of physicochemical parameters of water and soil and study on bioaccumulation of lead in aquatic organisms in East Kolkata Wetland (EKW)

M.Tech: Primary productivity and reproductive performance of tilapia in different organic manure under simulated greenhouse condition

PROFESIONAL EXPERIENCE

- Senior Research Fellow in DBT, New Delhi project at Indian Institute of Technology Kharagpur from 28.08.2014 to 30.10.2016.
- Senior Research Fellow in Ministry of Petoleum and Natural Gas, New Delhi project at Indian Institute of Technology Kharagpur from 10.04.2017 to 30.11.2018.
- Involved in organizing laboratory classes for B.Tech and M.Tech students in Agricultural and Food Engineering Department, IIT Kharagpur since last four years
- Expertise on Pilot Plant Operation and Handling of Equipment/Instrument for Large Scale production of 2G ethanol at P.K.Sinha Centre for Bioenergy, IIT Kharagpur
- Chemist at Analytical Food Testing Laboratory, IIT Kharagpur accredited by National Accreditation Board for Calibration and Testing Laboratories for analysis and testing of food samples for certification
- Work as a group member in technology transfer on "Production of α–amylase by *Bacillus amyloliquificiens* for 1G ethanol production" to IFB Agro Industries Ltd., Noorpur, Kolkata, 2017.

SKILLS

- Instruments: Single Beam Spectrophotometer, Double Beam Spectrophotometer, Flame photometer, Atomic Absorbtion Spectrophotometer (AAS), High Volume Air Sampler for SPM, NOX, TOC analyzer, HPLC, LCMS, Fluorescent Microscope, CHNS analyzer
- Analytical: Air Pollutant measurement, Testing of Water, Waste Water, Drinking water, Soil etc., Microbial analysis of water and soil, Biochemical analysis of plant sample, Heavy Metal analysis and measurement
- Skill of handling bacterial, fungal cell cultures
- Large scale production of industrial enzymes for 2G ethanol production
- Pilot plant operation for 2G ethanol production
- Thorough knowledge on purchase of equipment's /chemicals
- Through knowledge on new lab establishment (involved in designing and installation of Koji room) established at IIT Kharagpur
- Trained on how to write project from external funding agency
- Computer knowledge: Diploma in Information Technology, Microsoft Office, Visual Basic, SPSS, Minitab, Origin Pro, Geomatica
- Statistical analysis: ANOVA (One way, Two way, Split plot), LSD analysis, Paired T test, F test, Response Surface Methodology, Design of Experiments

PUBLICATIONS

A) Research Papers

1. **Kundu D**, Banerjee S, Karmakar S, and Banerjee R. (2021) *Enrichment of N and bioavailability of P and K of lemon wastes through biotechnological intervention with special reference to Mung bean production*. Bioresource Technology Reports, 15, 100794.
2. **Kundu D**, Banerjee S, Karmakar S, and Banerjee R. (2021) *Valorization of citrus lemon wastes through biorefinery approach: An industrial symbiosis.* Bioresource Technology Reports, 15, 100717.
3. **Kundu D**, Karmakar S and Banerjee R. (2019) *In silico optimization of enzyme mediated debittering of Assam lemon: Biochemical and sensory evaluation studies*. Journal of Food Science and Technology. 56(4):2233-2243.
4. Jana BB, **Kundu D**, Dutta D, Lahiri S, Bhakta JN and Bag SK. (2019) *Positive synergistic impacts of greenhouse temperature and manure driven total environment on breeding success of Tilapia during winter.* Indian Journal of Experimental Biology. 57(2):96-104.
5. Mondal S, Smaranya Haque, **Kundu D** and Ghosh AR. (2017). *Isolation and identification of phosphate-solubilizing microorganisms and distribution of orthophosphate in different seasons from sewage-fed East Kolkata Wetland.* Lakes & Reservoirs: Research and Management. 23, 261-270.
6. Mondal S, Kumar M, Haque S and **Kundu D**. (2017) *Phytotoxicity of glyphosate (N-(Phosphonomethyl)-Glycine) in the germination of pea seed (Pisum sativum) and its effect on biochemistry of germinated seedlings.* Environmental Health and Toxicology. 32: 1-7.
7. Sen A, Khan I, **Kundu D**, Das K and Datta JK. (2017) *Ecophysiological evaluation of tree species with seasonal variations and air pollution tolerance index*. Environmental Monitoring Assessment. 189(262): 1-15.
8. Das D, Maity S, **Kundu D**, Jana BB, Pandey S, Bhakta JN, Sharma J (2017) *Growth responses of Chlorella sp. to some selected variants of culture medium and in effluents of a Brewery*. International Journal of Environmental and Technological Sciences. 4s: 1-7.
9. Haque S, Mondal S, **Kundu D** and Ghosh AR. (2016) *Effect of multiple polycyclic aromatic hydrocarbons (PAHs) on liver of three teleostean fishes Labeo bata, Labeo rohita and Cirrhinus mrigala in Burdwan Loco tank, Burdwan, West Bengal, India.* Austin environmental Science. 2(1): 1-8.
10. Dutta D, **Kundu D** and Datta JK. (2016) *Evaluation of growth, physiology and yield of mung bean (Vigna radiata) by inoculating isolated nitrogen fixing bacteria from pharmaceutical wastewater.* Journal of Environmental Science and Pollution Research. 3(1): 149-152.
11. **Kundu D**, Mondal S, Dutta D, Haque S and Ghosh AR. (2016) *Accumulation and contamination of lead in different trophic levels of food chain in sewage-fed East Kolkata Wetland, West Bengal, India*. International Journal of Environmental and Technological Sciences. 2: 61-68.
12. Jana BB, **Kundu D**, Dutta D, Lahiri S, Bag S, Sarkar D and Bhakta JN. (2016) *Evidences of manure driven and C:N regulated enhanced carbon status and microalgal productivity in managed aquatic system under simulated green house conditions*. Journal of Earth Science and Climate Change. 7: 336. doi:10.4172/2157-7617.1000336.

13. Mondal S, **Kundu D,** Haque S, Senapati T and Ghosh AR. (2015) *Seasonal variation of zooplankton distribution in sewage-fed East Kolkata wetland, West Bengal, India*. Pollution Research. 34 (2): 477-787.

B) Review Papers

1. Singh J, **Kundu D**, Rastogi A, Das M, Mahle R and Banerjee R. (2018) *Bioremediation of distillery waste: An overview*. International Journal of Environmental and Technological Sciences. 6: 202-216.
2. Das M, **Kundu D**, Singh J, Rastogi A Mukherjee G, Chatterjee A and Banerjee R. (2018) *Rejuvenation of metabolic cascades for controlling aging through bioactive compounds: A review.* Journal of Nutrition and Food Science Forecast. 1(1): 1-6.
3. Mondal T, Jana A and **Kundu D**. (2017) *Aerobic wastewater treatment technologies: A mini review.* International Journal of Environmental and Technological Sciences. 4: 135-140.
4. Das M, **Kundu D**, Singh J, Rastogi A and Banerjee R. (2017) *Physiology and Biochemistry of Indigenous Tribal Liquor Haria: A State of Art*. Advances in Biotechnology & Microbiology. 6(2): 1-5.
5. Dash A, **Kundu D,** Das M, Bose D, Adak S and Banerjee R. (2016) *Food biotechnology: A step towards improving nutritional quality of food for Asian countries.* Recent Patents on Biotechnology. 10: 43-57.

C) Book Chapters

1. **Kundu D**, Das M, Mahle R, Biswas P, Karmakar S and Banerjee R. (2019) *Citrus fruits* (C Galanakis ed) In: Valorization of fruit processing by-products, Elsevier Publishers, edited by. Academic Press, USA. pp. 145-166. ISBN: 9780128171066.
2. **Kundu D**, Sarkar S, Mondal S, Dutta D, Mondal T, Mondal K, Bhakta JN and Jana BB. (2019) *Algal Carbon Sequestration: A Green Technology for Bioremediation of Carbondioxide Pollution* (JN Bhakta, S Lahiri, BB Jana eds) In: Green technology for bioremediation of environmental pollution. Nova Science Publishers, Inc., New York. pp. 153-172. ISBN: 9781536145298.
3. Bhakta JN, Rana S, **Kundu D**, Lahiri S, Jana BB, Mndal SK., Panigrahi AK, Pradhan C, Gorbatiuk L and Pasichna O (2019) *Bioleaching: Current Concepts of Microbial Metal Mobilization and its Application as Green Technology* (JN Bhakta, S Lahiri, BB Jana eds) In: Green technology for bioremediation of environmental pollution. Nova Science Publishers, Inc., New York. pp. 57-100. ISBN: 9781536145298.
4. Bhakta JN, **Kundu D**, Dutta D and Płaza GA (2019) *Bioremediation in Different Domains of Environment* (JN Bhakta, S Lahiri, BB Jana eds) In: Green technology for bioremediation of environmental pollution. Nova Science Publishers, Inc., New York. pp. 1-16. ISBN: 9781536145298.
5. Singh J, **Kundu D**, Das M and Banerjee R (2019) *Enzymatic processing of juice from fruits/vegetables: An emerging trend and cutting edge research in food biotechnology* (M Kuddus ed) In book: Enzymes in food biotechnology. Academic Press, Elsevier. pp. 419-432. ISBN: 9780128132807.
6. Rastogi A, Singh J, Das M, **Kundu D** and Banerjee R. (2018) *An understanding of bacterial cellulose and its potential impact on industrial application.* (A Kuila, V Sharma, eds) In: Principle and applications of fermentation technology. Scrivener Publishing LLC, Wiley. Beverly: USA. pp. 437-458. ISBN: 9781119460381.
7. Das M, **Kundu D**, Singh J, Rastogi A and Banerjee R. (2018) *Biotechnological exploitation of poly- lactide produced from cost effective lactic acid.* (A Kuila, V

Sharma, eds). In: Principle and applications of fermentation technology. Scrivener Publishing LLC, Wiley. Beverly: USA. pp. 401-416. ISBN: 9781119460381.

8. **Kundu D**, Singh J, Das M, Rastogi A and Banerjee R. (2018) *A sustainable process for nutrient enriched fruit juice processing: An enzymatic venture*. (A Kuila, V Sharma, eds). In: Principle and applications of fermentation technology. Scrivener Publishing LLC, Wiley. Beverly: USA. pp. 387-400. ISBN: 9781119460381.
9. Singh J, Rastogi A, **Kundu D**, Das M and Banerjee R. (2018) *A new perspective on fermented protein rich food and its health benefits*. (A Kuila, V Sharma, eds) In: Principle and applications of fermentation technology. Scrivener Publishing LLC, Wiley. Beverly: USA. pp. 417-436. ISBN: 9781119460381.
10. Althuri A, Chintagunta AD, Sherpa KC, Rajak RC, **Kundu D**, Singh J, Rastogi A and Banerjee R. (2017) *Microbial Enzymes and Lignocellulosic Fuel Production.* (A Kuila, V Sharma, eds). In: Lignocellulosic Biomass Production and Industrial Applications. Scrivener Publishing LLC, Wiley. Beverly: USA. Chapter 7. pp. 135-170. ISBN: 978-1-119-32360-0.
11. **Kundu D**, Dutta D, Mondal S, Haque S, Bhakta JN and Jana BB. (2016) *Application of potential biological agents in green bioremediation technology: Case studies.* (JN Bhakta, ed). In: Handbook of Research on Inventive Bioremediation Techniques. IGI Global. Hershey: USA. Chapter 13. pp. 298-322. EISBN13: 9781522523260.

D) Conference Proceedings

1. **Kundu D** and Banerjee R. (2018) *Production of bioethanol from citrus fruit waste through partial consolidated bioprocessing (PCBP)*. International Conference on Biotechnological Research and Innovation for Sustainable Development (BioSD-2018). 128.
2. **Kundu D** and Banerjee R. (2018) *Valorization of waste produced from processed Assam lemon*, J Fundam Renewable Energy Appl. DOI: 10.4172/2090-4541-C4-060. 11th World Bioenergy Congress and Expo at Berlin, Germany.
3. **Kundu D** and Banerjee R. (2017) *Bioethanol production through simultaneous saccharification and fermentation from citrus fruit waste*, J Fundam Renewable Energy Appl. DOI: 10.4172/2090-4541-C1-030. 5th World Bioenergy Congress and Expo at Madrid, Spain.
4. **Kundu D** and Banerjee R. (2016) *An enzymatic approach for debittering of citrus fruit juice*, International Conference on Emerging Technologies in Agricultural and Food Engineering (ETAE, 2016), at Indian Institute of Technology, Kharagpur, India.
5. **Kundu D** and Banerjee R. (2015) *Enzymatic debittering of citrus fruit juices and its value addition* on International Conference on New Horizon in Biotechnology at Trivandrum, India.
6. Jana BB, **Kundu D**, Dutta D, Lahiri S, Bag S, Bhakta JN, Jana S and Gnanakan K. (2016) *Winter breeding of tilapia induced by the interactions of polyhouse raised temperature and manure driven holistic environment in small holding tanks*. International E-conference On Current Trends in Environmental Conservation and Adaptive Measures for Climate Change. 58-59.
7. Dutta D, **Kundu D**, Bhakta JN, Lahiri S and Jana BB. (2016) *Manure driven carbon status in a constructed Mesocosm under simulated greenhouse condition*. International E-conference On Current Trends in Environmental Conservation and Adaptive Measures for Climate Change. 53-55.
8. Dutta D, **Kundu D**, Datta JK and Senapati T. (2016) *Treatment of pharmaceutical wastewater by packed bed column*. International E-conference On Current Trends in Environmental Conservation and Adaptive Measures for Climate Change. 26-27.

9. **Kundu D**, Mondal S, Dutta D, Haque S and Ghosh AR. (2016) *Accumulation of Lead in Different Tropic Levels of Food Chain in Sewage-Fed East Kolkata Wetland, West Bengal, India*. International E-conference On Current Trends in Environmental Conservation and Adaptive Measures for Climate Change. 8-9.

E) Poster Presentation

1. **Kundu D** and Banerjee R. (2018) *Production of bioethanol from citrus fruit waste through partial consolidated bioprocessing (PCBP)*. International Conference on Biotechnological Research and Innovation for Sustainable Development (BioSD-2018). CSIR-Indian Institute of Chemical Technology Hyderabad, India.
2. **Kundu D** and Banerjee R. (2016) *An enzymatic approach for debittering of citrus fruit juice*, International Conference on Emerging Technologies in Agricultural and Food Engineering (ETAE, 2016), at Indian Institute of Technology, Kharagpur, India.
3. **Kundu D** and Banerjee R. (2015) *Enzymatic debittering of citrus fruit juices and its value addition in* International Conference on New Horizon in Biotechnology at Trivandrum, India.
4. **Kundu D**, Dutta D, Jana BB. (2014) *Polyhouse induced changes of primary productivity in some manures used in organic farming* in Impact of climate change on aquaculture and mitigation option for food security at Kalyani University, West Bengal, India.

PATENTS

Sl. No.	Title	Patent No.	Status
1.	Process for de-bittering citrus fruit juice	201731019515 07-12-2018	Filed
2.	A Novel hyper active α-amylase production process from Bacillus amyloliquefaciens and its unique applications in viscosity reduction and improved ethanol production	201731036265 19-04-2019	Filed
3.	Production and application of hyperactive cellulase from a newly isolated strain of Aspergillus sp. (RB1313)	201931042676 23.04.2021	Filed

AWARDS

1. **First runner up** in oral presentation in Research Scholar Day celebration, 2020 at IIT Kharagpur
2. **Best poster award on** "*An enzymatic approach for debittering of citrus fruit juice*" in International Conference on Emerging Technologies in Agricultural and Food Engineering (ETAE, 2016), at Indian Institute of Technology, Kharagpur, India, 2016.
3. **Merit Award on** "*Manure driven carbon status in a constructed Mesocosm under simulated greenhouse condition"*. In International E-conference On Current Trends in Environmental Conservation and Adaptive Measures for Climate Change. International Journal of Environmental and Technological Sciences (iJETs).

GRANTS AND FELLOWSHIPS

1. Awarded Swami Vivekananda Scholarship in the year 2011 & 2012 from Government of West Bengal

MEMBERSHIPS OF ACADEMY/SOCIETIES

- Life Member in Biotech Research Society of India, India (**LM No.:1790**)
- Life Member in Indian Science Congress Association, India (**LM No.:L31693**)
- Member of International Society for Industrial Ecology (ISIE), United States (**M No.: 1867**)
- Student Member of Aquaculture Engineering Society (AES), Florida.
- Life Member in Society for Environment & Sustainable Development, India
- Member of the Asia Society of Researcher (ASR), Hong Kong (**M No.: R219093295)**
- Member of the Microbiology Society, London, UK (**M No.: C037753)**
- Member of the Universal Society of Food and Nutrition (USFN), Tamil Nadu, India (**M No.: PM08697235)**
- Member of The Minerals, Metals & Materials Society: TMS, Warrendale, Pennsylvania, United States **(M No.: 564765)**
- Life Member of All India Agriculture Student Association: AIASA, New Delhi, India **(AIASA/IITK/OL/LM-4/2021)**
- Student Member of American Society of Civil Engineers: ASCE, Reston, Virginia, United States **(M No.: 12253282)**
- Full member of Association of Food Scientists & Technologists (INDIA) **(M No.: AFST/R-1-2021/KHG/009)**

REVIEWER OF JOURNALS

- ✓ Science of the Total Environment, Elsevier
- ✓ Cogent Environmental Science, Taylor & Francis
- ✓ Cogent Environmental Engineering, Taylor & Francis
- ✓ Cogent Food & Agriculture, Taylor & Francis
- ✓ ASCE Journal of Environmental Engineering
- ✓ Biotechnology and Applied Biochemistry, Wiley
- ✓ International Journal of Environmental and Technological Sciences
- ✓ Resources and Environment, Scientific & Academic Publishing
- ✓ International Journal of Energy Engineering, Scientific & Academic Publishing
- ✓ American Journal of Climate Change, Scientific Research Publishing
- ✓ International Journal of Ecosystem, Scientific & Academic Publishing
- ✓ Current Agriculture Research Journal
- ✓ Energy and Environment, SAGE Journals
- ✓ Biosciences Biotechnology Research Asia

EDITIORIALS MEMBER OF JOURNALS

- ✓ International Journal of Environmental and Technological Sciences
- ✓ International Journal of Environmental Monitoring and Analysis, Science Publishing Group

TEACHING EXPERIENCE

Two semester (2013-2014) teaching experience as guest lecturer in civil engineering (environmental engineering lab) department at University Institute of Technology, University of Burdwan.

PARTICIPATION OF CONFERENCE/SEMINAR

Sl. No.	Year / duration	Country & type	Description (Title, place and organizer)
1	2012	**India** National	Seminar on "Conservation of Blue Carbon Sink: An Approach towards Safe Environment" Netaji Mahavidyalaya, The University of Burdwan, West Bengal India
2	2013	**India** International	Seminar on "Current status of arsenic, fluoride and pathogens in drinking water: Treatment methods and experiences" Kalyani University, Kalyani, West Bengal, India
3	2014	**India** National	National Seminar on "Impact of climate change on aquaculture and mitigation option for food security" Kalyani University, Kalyani, West Bengal, India
4	2016	**India** International	International Conference on Emerging Technologies in Agricultural and Food Engineering (ETAE, 2016), Indian Institute of Technology, Kharagpur, India
5	2018	**India** International	International Conference on Biotechnological Research and Innovation for Sustainable Development (BioSD-2018). CSIR-Indian Institute of Chemical Technology Hyderabad, India.

INVITED SPEAKER/LECTURES

Invited speaker at Indo-US workshop on "Recent Development in Bioenergy Research" on 19th October 2020, organized by Indian Institute of Technology Kharagpur.

WORKSHOP/TRAINING ATTENDED

DST-GoWB sponsored Hands- on- training on "Quality standardization in Air and Water including detection of Radioactivity in Aquatic medium and Plant Body" on 24th February to 3rd March, 2012, organized by Department of Environmental Sciecne, The University of Burdwan.

Scientific writing and speed sparing workshop on 22nd November- 2018, organized by IHE-Delft and Biotech Research Society, India.

IEEE sponsored, LATEX Workshop on Technical Report Writing on April- 2018, organized by IIT Khargpur.

Author Workshop on "How to Write and Publish Scientific Articles and Manuscripts" on 27th February, 2018, jointly organized by Indian Institute of Technology Kharapur and Springer Nature.

Indo-US workshop on Recent developments in bioenergy research on 19th October 2020, organized by Indian Institute of Technology Kharagpur.

I, hereby, declare that all the statements made in the CV are true, complete and correct to the best of my knowledge and belief.

Mr. Debajyoti Kundu