



Dr. Krishnendu Pramanik

M.Sc. (Gold Medalist), Ph.D., GATE, DST – INSPIRE Fellow
UGC – Dr. D.S. Kothari Postdoctoral Fellow

Assistant Professor

Department of Botany
Cooch Behar Panchanan Barma University
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Career

9th Mar 2023 – Present: Assistant Professor, Cooch Behar Panchanan Barma University, WB
1st Nov 2022 – 3rd March 2023: Assistant Professor, SRM University Sikkim, East Sikkim
22nd Oct 2019 – 21st Oct 2022: UGC-Dr. D.S. Kothari Postdoctoral Fellow, Visva-Bharati, WB
Sep 2018 – Dec 2018: Guest Lecturer, Dept. of Botany, Bolpur College, Burdwan University
Mar 2015 – Jul 2018: DST – INSPIRE Fellow, The University of Burdwan, WB, India

Academics

2018 – Ph.D. in Botany (Science) from The University of Burdwan, West Bengal, India
2017 – Qualified Graduate Aptitude Test for Engineering (GATE), Life Sciences
2013 – M.Sc. in Botany from The University of Burdwan (Rank: 1st, M.Sc. Gold Medalist)
2011 – B.Sc. (Hons.) in Botany from The University of Burdwan (Rank: 2nd in the University)

Memberships in scientific communities

- Life Member, The Association of Microbiologists of India (AMI), India
Membership No.: 4937-2019
- Life Member, BIOinformatics CLUB for Experimenting Scientists (BIOCLUES), India
Membership No.: Bio_LM_2021_005
- Life Member, Hariharpur Friends of Environment (HFOE), WB, India
Membership ID: FOE/NE/0029/2022-23

Broad areas of research

- Environmental Microbiology and Bioremediation
- Plant-stress-microbe interaction
- Phytopathogen-PGPM interaction
- Molecular and Omics approaches
- Bioinformatics-based proteomic analyses
- Sustainable agricultural practices

Awards and achievements

- **2021:** “Bioclues Innovation, Research and Development (BIRD)” Awards from BIOinformatics CLUB for Experimenting Scientists (Bioclues) organization, India
- **2020:** Recipient of ‘FONDECYT postdoctoral fellowship – 2020’ from Universidad de La Frontera, Temuco, Govt. of Chile, South America (unable to join due to pandemic)

- **2020:** 1st prize in International Conference on “Engineering biotic interactions in the light of social applicability” organized by Dept. of Botany, MUC Women’s College, under The University of Burdwan, India
- **2019:** UGC – Dr. D.S. Kothari Postdoctoral Fellowship [Award No. F.4–2/2006 (BSR)/ BL/19–20/0072 dated October 21, 2019] from the University Grants Commission (UGC), Govt. of India
- **2018:** Best presentation (oral) award in International Conference on “Frontiers in Biological, Environmental and Medical Sciences (FBEMS)” organized by The University of Burdwan, India
- **2017:** DST-INSPIRE Senior Research Fellowship [Grant No. IF150197 dated 26.10.2017] from Department of Science of Technology, Govt. of India
- **2015:** DST-INSPIRE Junior Research Fellowship [Grant No. IF150197 dated 11.03.2015] from Department of Science of Technology, Govt. of India
- **2015:** University ‘Gold Medal’ from The University of Burdwan, India for 1st class 1st position in M.Sc. (Botany), 2013
- **2015:** Monujendranarayan and Gouri Acharya Chowdhury Prize for securing the highest percentage of marks among the students of M.Sc. (Botany), 2013
- **2012:** Bibhutibhusan Roy Memorial Award-2011 Burdwan Raj College, under The University of Burdwan, India for securing the highest percentage of marks among the students of B.Sc. (Botany), Burdwan Raj College, 2011

Publication summary (till 26th July, 2024)

- Total no. of research papers published: 22
- Total no. of review articles published: 04
- Total no. of edited books published: 02
- Total no. of book chapters published: 03

Current Publications (w.e.f. joining at CBPBU, till 26th July, 2024)

2024:

Review article(s):

- Pal P., **Pramanik K.**, Ghosh S.K., Mondal S., Mondal T., Soren T., Maiti T.K. (2024) Molecular and eco-physiological responses of soil-borne lead (Pb²⁺)-resistant bacteria for bioremediation and plant growth promotion under lead stress. Microbiological Research, 127831. <https://doi.org/10.1016/j.micres.2024.127831>
- Banerjee S., Gupta N.*, **Pramanik K. ***, Gope M., GhoshThakur R., Karmakar A., Gogoi N., Hoque R.R., Mandal N.C., Balachandran S. (2024) Microbes and microbial strategies in carcinogenic polycyclic aromatic hydrocarbons remediation: a systematic review. Environmental Science and Pollution Research, 31, 1811-1840. <https://doi.org/10.1007/s11356-023-31140-0>

(*equally contributed).

2023:

Edited Book(s):

- **Pramanik K.**, Cornejo P., Mandal N.C., eds. (2023). Heavy metal(loid) stress-alleviating and phytostimulating microorganisms: Dual-performing warhorses in soil-bioremediation. Lausanne: Frontiers Media SA. Published on July 2023. doi: 10.3389/978-2-8325-2923-2

Book Chapter(s):

- Mondal S., **Pramanik K.**, Pal P., Mitra S., Ghosh S.K., Mondal T., Soren, T., Maiti T.K. (2023). Multifaceted roles of root exudates in light of plant-microbe interaction. In: Chandra D., Bhatt P. (eds.) Unravelling Plant-Microbe Synergy (pp. 49-76). Academic Press, Elsevier. [eBook ISBN: 978-0-323-99896-3] <https://doi.org/10.1016/B978-0-323-99896-3.00003-5>

Earlier Publications (Prior to join at CBPBU)

2022:

Research article(s):

- Mukherjee D.*, **Pramanik K.***, Mandal S., Mandal N.C. (2022) Augmented growth of Cd-stressed rice seedlings with the application of phytostimulating, root-colonizing, Cd-tolerant, leaf endophytic fungi *Colletotrichum* spp. isolated from *Eupatorium triplinerve*. Journal of Hazardous Materials, 438, 129508. <https://doi.org/10.1016/j.jhazmat.2022.129508> (*Joint first-author)
- **Pramanik K.** & Mandal N.C. (2022). Structural heterogeneity assessment among the isoforms of fungal 1-aminocyclopropane-1-carboxylic acid (ACC) deaminase: a comparative *in silico* perspective. Journal of Genetic Engineering and Biotechnology, 20(1), 1-14. <https://doi.org/10.1186/s43141-021-00294-0>
- Ghosh A., **Pramanik K.**, Bhattacharya S., Mondal S., Ghosh S.K., Maiti T.K. (2022). A potent cadmium bioaccumulating *Enterobacter cloacae* strain displays phytobeneficial property in Cd-exposed rice seedlings. Current Research in Microbial Sciences, 3, 100101. <https://doi.org/10.1016/j.crmicr.2021.100101>

Review article(s):

- Mondal S., **Pramanik K.**, Ghosh S.K., Pal P., Ghosh P.K., Ghosh A. & Maiti T.K. (2022) Molecular insight into arsenic uptake, transport, phytotoxicity, and defense responses in plants: A critical review. Planta, 255, 87. <https://doi.org/10.1007/s00425-022-03869-4>

2021:

Research article(s):

- **Pramanik K.**, Mandal S., Banerjee S., Ghosh A., Maiti T.K., Mandal N.C. (2021). Unraveling the heavy metal resistance and biocontrol potential of *Pseudomonas* sp. K32 strain facilitating rice seedling growth under Cd stress. Chemosphere, 274, 129819. <https://doi.org/10.1016/j.chemosphere.2021.129819>
- Karmakar J., Goswami S., **Pramanik K.**, Maiti T.K., Kar R.K. & Dey N. (2021). Growth promoting properties of *Mycobacterium* and *Bacillus* on rice plants under induced drought. Plant Science Today, 8(1), 49-57. <https://doi.org/10.14719/pst.2021.8.1.965>
- Ghosh A., **Pramanik K.**, Bhattacharya S., Mondal S., Ghosh S.K., Ghosh P.K. & Maiti T.K. (2021). Abatement of arsenic-induced phytotoxic effects in rice seedlings by an arsenic-resistant *Pantoea dispersa* strain. Environmental Science and Pollution Research, 28(17), 21633-21649. <https://doi.org/10.1007/s11356-020-11816-7>

Review article(s):

- Mondal S., **Pramanik K.**, Ghosh S.K., Pal P., Mondal T., Soren T. & Maiti T.K. (2021). Unraveling the role of plant growth-promoting rhizobacteria in the alleviation of arsenic phytotoxicity: A review. Microbiological Research, 250, 126809. <https://doi.org/10.1016/j.micres.2021.126809>

Book Chapter(s):

- **Pramanik K.**, Banerjee S., Mukherjee D., Saha K.K., Maiti T.K., Mandal N.C. (2021). Beneficial Role of Plant Growth-Promoting Rhizobacteria in Bioremediation of Heavy Metal(loid)-Contaminated Agricultural Fields. In: Hurst C. J. (ed.) *Microbes: The Foundation Stone of the Biosphere*, pp. 441-495. Springer. (Published online on 01 May 2021). [eBook ISBN: 978-3-030-63512-1] https://doi.org/10.1007/978-3-030-63512-1_22
- **Pramanik K.**, Maiti T.K., Mandal N.C. (2021). Potential role of heavy metal-resistant plant growth-promoting rhizobacteria in the bioremediation of contaminated fields and enhancement of plant growth essential for sustainable agriculture. In: De Mandal, Passari A. K. (eds.) *Recent Advancement in Microbial Biotechnology*, pp. 357-385. Academic Press, Elsevier. (Published online on 20 August 2021) [eBook ISBN: 9780128232613] <https://doi.org/10.1016/B978-0-12-822098-6.00014-8>

2020: NIL

2019:

Research article(s):

- Mitra S., Purkait T., **Pramanik K.**, Maiti T.K. & Dey R.S. (2019). Three-dimensional graphene for electrochemical detection of Cadmium in *Klebsiella michiganensis* to study the influence of Cadmium uptake in rice plant. *Materials Science and Engineering: C*, 103, 109802. <https://doi.org/10.1016/j.msec.2019.109802>

2018:

Research article(s):

- Sarkar A., **Pramanik K.**, Mitra S., Soren T. & Maiti T.K. (2018). Enhancement of growth and salt tolerance of rice seedlings by ACC deaminase-producing *Burkholderia* sp. MTCC 12259. *Journal of Plant Physiology*, 231, 434-442. <https://doi.org/10.1016/j.jplph.2018.10.010>
- Ghosh P.K., Maiti T.K., **Pramanik K.**, Ghosh S.K., Mitra S. & De T.K. (2018). The role of arsenic resistant *Bacillus aryabhatai* MCC3374 in promotion of rice seedlings growth and alleviation of arsenic phytotoxicity. *Chemosphere*, 211, 407-419. <https://doi.org/10.1016/j.chemosphere.2018.07.148>
- **Pramanik K.**, Mitra S., Sarkar A., Soren T. & Maiti T.K. (2018). Characterization of a Cd²⁺-resistant plant growth promoting rhizobacterium (*Enterobacter* sp.) and its effects on rice seedling growth promotion under Cd²⁺-stress in vitro. *Agriculture and Natural Resources*, 52(3), 215-221. <https://doi.org/10.1016/j.anres.2018.09.007>
- Mitra S., **Pramanik K.**, Sarkar A., Ghosh P.K., Soren T. & Maiti T.K. (2018). Bioaccumulation of cadmium by *Enterobacter* sp. and enhancement of rice seedling growth under cadmium stress. *Ecotoxicology and Environmental Safety*, 156, 183-196. <https://doi.org/10.1016/j.ecoenv.2018.03.001>
- **Pramanik K.**, Kundu S., Banerjee S., Ghosh P.K. & Maiti T.K. (2018). Computational-based structural, functional and phylogenetic analysis of *Enterobacter* phytases. *3 Biotech*, 8(6), 1-12. <https://doi.org/10.1007/s13205-018-1287-y>
- **Pramanik K.**, Saren S., Mitra S., Ghosh P.K. & Maiti T.K. (2018). Computational elucidation of phylogenetic, structural and functional characteristics of *Pseudomonas* lipases. *Computational Biology and Chemistry*, 74, 190-200. <https://doi.org/10.1016/j.compbiolchem.2018.03.018>
- Mitra S., **Pramanik K.**, Ghosh P.K., Soren T., Sarkar A., Dey R.S., Pandey S. & Maiti T.K. (2018). Characterization of Cd-resistant *Klebsiella michiganensis* MCC3089 and its potential

for rice seedling growth promotion under Cd stress. *Microbiological Research*, 210, 12-25. <https://doi.org/10.1016/j.micres.2018.03.003>

- **Pramanik K.**, Mitra S., Sarkar A. & Maiti T.K. (2018). Alleviation of phytotoxic effects of cadmium on rice seedlings by cadmium resistant PGPR strain *Enterobacter aerogenes* MCC 3092. *Journal of Hazardous Materials*, 351, 317-329. <https://doi.org/10.1016/j.jhazmat.2018.03.009>
- **Pramanik K.**, Pal P., Soren T., Mitra S., Ghosh P.K., Sarkar A. & Maiti T.K. (2018). In silico structural, functional and phylogenetic analysis of *Klebsiella* phytases. *Journal of Plant Biochemistry and Biotechnology*, 27(3), 362-372. <https://doi.org/10.1007/s13562-018-0445-y>
- Sarkar A., Ghosh P.K., **Pramanik K.**, Mitra S., Soren T., Pandey S., Mondal M.H. & Maiti T.K. (2018). A halotolerant *Enterobacter* sp. displaying ACC deaminase activity promotes rice seedling growth under salt stress. *Research in Microbiology*, 169(1), 20-32. <https://doi.org/10.1016/j.resmic.2017.08.005>

2017:

Research article(s):

- **Pramanik K.**, Mitra S., Sarkar A., Soren T. & Maiti T.K. (2017). Characterization of cadmium-resistant *Klebsiella pneumoniae* MCC 3091 promoted rice seedling growth by alleviating phytotoxicity of cadmium. *Environmental Science and Pollution Research*, 24(31), 24419-24437. <https://doi.org/10.1007/s11356-017-0033-z>
- **Pramanik K.**, Ghosh P.K., Ray S., Sarkar A., Mitra S. & Maiti, T. K. (2017). An in silico structural, functional and phylogenetic analysis with three dimensional protein modeling of alkaline phosphatase enzyme of *Pseudomonas aeruginosa*. *Journal of Genetic Engineering and Biotechnology*, 15(2), 527-537. <https://doi.org/10.1016/j.jgeb.2017.05.003>
- **Pramanik K.**, Soren T., Mitra S. & Maiti T.K. (2017). In silico structural and functional analysis of *Mesorhizobium* ACC deaminase. *Computational Biology and Chemistry*, 68, 12-21. <https://doi.org/10.1016/j.compbiolchem.2017.02.005>

2016:

Research article(s):

- **Pramanik K.**, Ghosh P.K., Ghosh A., Sarkar A., Maiti T.K. (2016). Characterization of PGP traits of a hexavalent chromium resistant *Raoultella* sp. isolated from the rice field near industrial sewage of Burdwan District, WB, India. *Soil and Sediment Contamination: An International Journal*, 25(3), 313-331. <https://doi.org/10.1080/15320383.2016.1137861>
- Ghosh P.K., Sarkar A., **Pramanik K.**, Maiti T.K. (2016). The extracellular polysaccharide produced by *Enterobacter* spp. isolated from root nodules of *Abrus precatorius* L. *Biocatalysis and Agricultural Biotechnology*, 5, 24-29. <https://doi.org/10.1016/j.bcab.2015.12.003>

Invited Lectures

- 2021: Invited speaker in National Webinar on “Current progress in plant biology: implications towards crop improvement” from the Dept. of Botany, Bidhan Chandra College, Asansol, West Bengal, India

Workshops completed

Title of the workshop	Level	Organizing Institute	Duration
Basic to Advanced Bioinformatics, Machine Learning, and Multiomics data analysis (Online)	International	Nextgenhelper, New Delhi, India	March 13 – 31, 2022
Next Generation Sequencing for Deciphering Host-Pathogen Interactions (Online)	National	Bionivid Technologies Pvt. Ltd., India	Feb 4 – 5 th , 2021
Advanced Bio-Informatics (Online FDP)	National	E & ICT Academy, National Institute of Technology, Warangal, India	Nov 18th – 27th, 2021
Flow Cytometry and its Application in Biomedical Sciences (Online)	International	Trust for Education and Training in Cytometry (TETC), Mumbai, India	July 24 – 26, 2020
Bioinformatics-based Genomic & Proteomic Data Analysis in Microbial Domain (Offline)	National	National Bureau of Agriculturally Important Microorganisms (NBAIM) Indian Council of Agricultural Research (ICAR), Govt. of India	March 04 – 09, 2016

Seminars/Conferences attended (w.e.f. joining at CBPBU)

Title	Level	Organizing Institute	Duration
International Seminar on “Reimagining Inclusive Education: Social Sciences, AI Technology and Sciences” (Offline)	International	Tomsk State University, Russia and Cooch Behar Panchanan Barma University	July 4 th , 2024
2 nd Botanical Congress 2024 National Seminar and Scientific Activities Theme: Plant Science, Biotechnology and Society (Offline)	National	Department of Botany The University of Burdwan & Indian Institute of Agricultural Biotechnology (IIAB, ICAR) in collaboration with Botanical Society of Bengal	March 23 rd – 24 th , 2024
User Awareness on NDLI and NDLI Club with a Special Focus to Sustainable Development in Education (Offline)	National	National Digital Library of India, IIT Kharagpur & Cooch Behar Panchanan Barma University	Feb 8 th – 9 th , 2024

Sequence, strain and protein model submissions (bacteria and fungi)

- Submission of 16S rDNA sequences in NCBI database: 13 nos.
KX346257, KX346258, KX346259, KX346260, MH605571, MH605572, KP842826, MH507563, MH507564, MH507565, MH507566, MH507567 and MH507568
- Submission of bacterial strain National Centre for Cell Science (NCCS), Microbial Culture Collection (MCC), Pune: 02 nos. (MCC 3091, MCC 3092)
- Submission of *in silico* protein models in Protein Model Database (PMDb): 85 models
PM0079544, PM0080564, PM0081040, PM0080561, PM0080562, PM0083418 – 39, PM0083476 – 93, PM0083418 – 39, PM0083476 – 93

Additional academic/administrative responsibilities

- Examiner, Paper Setter, Moderator and Scrutinizer of selected PG Botany Papers, Cooch Behar Panchanan Barma University (CBPBU)
- Member of Post Graduate Board of Studies (PG-BoS), Dept. of Botany, CBPBU
- External Examiner, Department of Botany, Visva-Bharati, Santiniketan.
- Appointed as Board of Examiners for PG Practical Examination, Dept. of Botany, The University of Burdwan.
- Invited Guest Faculty of Department of Botany, Alipurduar University.
- Observer of Teachers Eligibility Test (TET-2023), conducted by West Bengal Board of Primary Education (WBBPE)
- Invigilator of State Eligibility Test (SET-2023) conducted by West Bengal College Service Commission (WBCSC)

Journal Editor:

- Frontiers in Microbiology (Review Editor)
- Frontiers in Plant Science
- Frontiers in Marine Science
- Frontiers in Sustainable Food Systems (GAE)
- Agronomy (GAE, MDPI)
- Plants (GAE, MDPI)
- Microorganisms (GAE, MDPI)
- Molecules (GAE, MDPI)
- International Journal of Molecular Sciences (GAE, MDPI)

Research Topics Edited:

- **2023:** “Heavy Metal(loid) Stress-alleviating and Phytostimulating Microorganisms: Dual-performing Warhorses in Soil-bioremediation”

Editors: Krishnendu **Pramanik** (India), Pablo Cornejo (South America), Naryan Chandra Mandal (India)

Journals: Frontiers in Microbiology and Frontiers in Sustainable Food Systems.

[Click here](#) for more details.

- **2023:** “ACC Deaminase Producing Microorganisms in Stress Agriculture: From Hypothesis to Omics”

Editors: Krishnendu **Pramanik** (India), Yinglong Chen (Australia), Naryan Chandra Mandal (India), Sandipan Banerjee (India)

Journals: MDPI journals (Agronomy, International Journal of Molecular Sciences, Microorganisms, Molecules and Plants)

[Click here](#) for more details.

Journal Reviewer:

1. Scientific Reports (Nature Publishing Group)
2. Plant and Soil (Springer Nature)
3. Journal of Soil Science and Plant Nutrition (Springer Nature)
4. Plant Growth Regulation (Springer Nature)
5. Current Microbiology (Springer Nature)
6. The Protein Journal (Springer Nature)
7. Journal of Hazardous Materials (Elsevier)
8. Environmental Pollution (Elsevier)
9. Journal of Cleaner Production (Elsevier)
10. Ecotoxicology and Environmental Safety (Elsevier)
11. Bioresource Technology Reports (Elsevier)
12. Science of the Total Environment (Elsevier)
13. Current Research in Microbial Sciences (Elsevier)
14. Journal of Microbiological Methods (Elsevier)
15. Physiological and Molecular Plant Pathology (Elsevier)
16. Current Plant Biology (Elsevier)
17. Pedosphere (Elsevier)
18. Frontiers in Microbiology (Frontiers)
19. Frontiers in Plant Science (Frontiers)
20. Plant Science Today (Horizon e-Publishing Group)

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