

Subhrangshu Mandal

Date of Birth: 9th Feb, 1990
Environmental microbiology & stress physiology Laboratory,
Department of Botany, Siksha Bhavana (Institute of Science),
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Research interest: My general interest is to continue research and development in the field of **microbial ecology and evolution**, **molecular biology, microbial genomics and proteomics of stress-resistant plant associated microbiome, Biogeochemistry of sulfur cycle and plant-microbe interaction**.

Research experience

***Post-doctoral fellow* (2021-2022)**	**Department of *Geo-microbiology*, University of Minnesota, USA**
***Doctoral studies(PhD)* (2014-2021)**	Department of *Microbiology*, Bose Institute

Teaching experience: Assistant Professor, Department of Botany, Visva-Bharati, Santiniketan. (*Dec 2022-present*)

Education

M.Sc. (2013)	**Department of Botany (*secured First Class 1st Rank*), Visva Bharati**
B.Sc. (2011)	Department of Botany (***secured First Class 3rd Rank***), Visva Bharati

Recognition & Awards:

June-2013	***Joint CSIR-UGC NET in Life Sciences***
2014	***Graduate Aptitude Test In Engineering in Life-Science***
Dec 2014	***DST INSPIRE fellowship*** (For standing first class first in Masters Examination)

Projects Sanctioned as Principal Investigator (PI):

Project entitled, "*Molecular characterization of Sorghum-aerial-endosphere microbiome for drought resilience and their potential use in bio-priming for drought-prone agricultural sustainability*" under the Prime Minister Early Career Research Grant (PMECRG) of **ANRF** (Anusandhan National Research Foundation), Govt. of India. File No. ANRF/ECRG/2024/000392/LS. **Amount: Rs. 56.91 Lakhs (Sanctioned June 2025; 3 years)**

Project entitled, "*Exploration of cryptic bacterial community dynamics of rice endosphere microbiome from Eastern Himalayan districts of West Bengal - a relatively unexplored hotspot for bio-priming in sustainable agriculture*" of **WBDST**. **Amount: Rs. 10 Lakhs (June2024-2026)**

Publications

Google Scholar metrics (October 2026): Citations: 700 | h-index: 15 | i10-index: 20. *25 peer-reviewed research articles and 5 book chapters.*

2026

- Hazra, L., Biswas, S., Saha, K.K., Chatterjee, S., Dutta, S. and **Mandal, S**., 2026. Endophytic drought-tolerant bacterial community dynamics across contrasting agroclimatic zones. ***Letters in Applied Microbiology***, 79(2), p.ovag013. ***Impact Factor (2.8) (As a corresponding author)***

- Show, B.K., **Mandal, S**., Basu, A., Chaudhury, S., Hazra, A.K., Ross, A.B., Sarkar, J. and Balachandran, S., 2026. Optimization of Inoculum-Substrate Ratio and Metagenomic Landscape of Biogas-Generating-Microbiome for Sustainable Bio-methane Production. ***Waste and Biomass Valorization***, 17(2), pp.1143-1156. ***Impact Factor (3.1)***

2025

- Saha, K.K., **Mandal, S**., Barman, A., Chatterjee, S. and Mandal, N.C., 2025. Deciphering the genomic and physiological basis of pH dependent siderophore production in Enterobacter sp. DRP3 and mitigation of lead stress in rice seedlings. ***Journal of Hazardous Materials***, p.137587. ***Impact Factor (14.4) (As a Co-corresponding author)***

2024

- **Mandal, S**., Flood, B.E., Lunzer, M., Kumar, D. and Bailey, J.V., 2024. Fluoride and gallein regulate polyphosphate accumulation in dental caries-associated Lacticaseibacillus. ***Microbiology, 170(11), p.001519. Impact Factor (2.6)***

- Saha, K.K., **Mandal, S.,** Barman, A., Mondal, S., Chatterjee, S. and Mandal, N.C., 2024. Genomic insight of phosphate solubilization and plant growth promotion of two taxonomically distinct winter crops by Enterobacter sp. DRP3. ***Journal of Applied Microbiology***, 135(6), p.lxae146. ***Impact Factor (4.0) (Joint first author)***

2023

- Kumar, D., **Mandal, S**., Bailey, J.V., Flood, B.E. and Jones, R.S., 2023. Fluoride and gallein inhibit polyphosphate accumulation by oral pathogen *Rothia dentocariosa*. ***Letters in Applied Microbiology,*** 76(2), p.ovad017. ***Impact Factor (2.8)***

2022

- Mukherjee, D., Pramanik, K., **Mandal, S**. and 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***, p.129508. ***Impact Factor (14.22)***

2021

- **Mandal, S.,** Saha, K.K. and Mandal, N.C., 2021. Molecular insight into key eco-physiological process in bioremediating and plant-growth-promoting bacteria. ***Front. Agron***. 3: 664126. doi: 10.3389/fagro. ***Impact Factor (3.4)(As a corresponding author)***
- **Mandal, S**., Debnath, U and Sarkar, J., 2021 Structural-genetic characterization of novel butaryl co A dehydrogenase and proposition of butanol biosynthesis pathway in *Pusillimonas ginsengisoli SBSA*. ***Journal of Molecular Evolution***, 89(1), 81-94. ***Impact Factor (4.0)(As a corresponding author)***
- Bhattacherjee R, **Mandal S**, Banerjee S, Saha KK, Sarkar J, Banerjee D, Mandal NC. (2021) Structural-genetic insight and optimization of protease production from a novel strain of *Aeromonas veronii* CMF, a gut isolate of *Chrysomya megacephala*. ***Arch Microbiol***. doi: 10.1007/s00203-021-02282-x. (**Joint first author**) ***Impact Factor (2.6)***
- Pramanik, K., **Mandal, S**., Banerjee, S., Ghosh, A., Maiti, T.K. and 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***, p.129819. ***Impact Factor (8.8)***
- Gorai, P.S., Ghosh, R., **Mandal, S**., Ghosh, S., Chatterjee, S., Gond, S.K. and Mandal, N.C., 2021. Bacillus siamensis CNE6-a multifaceted plant growth promoting endophyte of Cicer arietinum L. having broad spectrum antifungal activities and host colonizing potential. ***Microbiological Research***, p.126859. ***Impact Factor (6.7)***
- Sinha, D., Banerjee, S., **Mandal, S**., Basu, A., Banerjee, A., Balachandran, S., Mandal, N.C. and Chaudhury, S., 2021. Enhanced biogas production from Lantana camara via bioaugmentation of cellulolytic bacteria. ***Bioresource Technology***, p.125652. ***Impact Factor (11.88)***
- Alam M., Fernandes S., **Mandal S**., Rameez M., Bhattacharya S., Peketi A., Mazumdar A., Ghosh W., 34S enrichment as a signature of thiosulfate oxidation in the "Proteobacteria", ***FEMS Microbiology Letters***, 368, (12), 2021, fnab073, https://doi.org/10.1093/femsle/fnab073. ***Impact Factor (2.8)***
- Bhattacharya, S., Mapder, T., Fernandes, S., Roy, C., Sarkar, J., Rameez, M.J., **Mandal, S**., Sar, A., Chakraborty, A.K., Mondal, N. and Chatterjee, S., 2021. Sedimentation rate and organic matter dynamics shape microbiomes across a continental margin. ***Biogeosciences***, pp.1-39. ***Impact Factor (4.6)***

2020

- **Mandal, S.**, Rameez, M.J., Chatterjee, S., Sarkar, J., Pyne, P., Bhattacharya, S., Shaw, R. and Ghosh, W., 2020. Molecular mechanism of sulfur chemolithotrophy in the betaproteobacterium *Pusillimonas ginsengisoli* SBSA. ***Microbiology***, 166(4), pp.386-397. ***Impact Factor (2.6)(As a corresponding author)***
- **Mandal, S**., Bhattacharya, S., Roy, C., Rameez, M.J., Sarkar, J., Mapder, T., Fernandes, S., Peketi, A., Mazumdar, A. and Ghosh, W., 2020. Cryptic roles of tetrathionate in the sulfur cycle of marine sediments: microbial drivers and indicators. ***Biogeosciences***, *17*(18), pp.4611-4631**.** ***Impact factor (4.6*)**

- **Mandal, S.**, Pal, N., Mondal T., Banerjee, N., 2020. Comparative Efficiency Analysis of Different Explants and Contribution of Polyamines on *in vitro* Propagation of *Dendrobium* Hybrid *Sonia*. ***Plant Tissue Culture & Biotechnology*****,** 30(1): pp.77-86. ***Impact Factor (1)(As a corresponding author)***
- Bhattacharya, S., Roy, C., **Mandal, S**., Sarkar, J., Rameez, M.J., Mondal, N., Mapder, T., Chatterjee, S., Pyne, P., Alam, M. and Haldar, P.K., 2020. Aerobic microbial communities in the sediments of a marine oxygen minimum zone. ***FEMS microbiology letters***, *367*(19), p.fnaa157. ***Impact Factor (2.8)***
- Roy, C., Rameez, M.J., Haldar, P., Peketi, A., Mondal, N., Bakshi, U., Mapder, T., Pyne, P., Fernandes, S., Bhattacharya, S., Roy, R., **Mandal**, **S**., O'Neill, W., Mazumdar, A., Mukhopadhyay, S., Mukherjee, A., Chakraborty, R., Hallsworth J and Ghosh, W., 2020. Microbiome and ecology of a hot spring-microbialite system on the Trans-Himalayan Plateau. ***Scientific Reports***. 10(1), pp.1-22. ***(Impact factor 4.6)***

2019

- Rameez, M.J., Pyne, P., **Mandal, S**., Chatterjee, S., Alam, M., Bhattacharya, S., Mondal, N., Sarkar, J. and Ghosh, W., 2019. Two pathways for thiosulfate oxidation in the alphaproteobacterial chemolithotroph *Paracoccus thiocyanatus* SST. ***Microbiological research***, *230*, p.126345. ***Impact Factor (6.7)***
- Roy, C., Bakshi, U., Rameez, M.J., **Mandal, S**., Haldar, P.K., Pyne, P. and Ghosh, W., 2019. Phylogenomics of an uncultivated, aerobic and thermophilic, photoheterotrophic member of Chlorobia sheds light into the evolution of the phylum Chlorobi. ***Computational biology and chemistry***, *80*, pp.206-216. ***(Impact factor 3.7)***

2018

- Pyne, P., Alam, M., Rameez, M.J., **Mandal, S**., Sar, A., Mondal, N., Debnath, U., Mathew, B., Misra, A.K., Mandal, A.K. and Ghosh, W., 2018. Homologs from sulfur oxidation (Sox) and

methanol dehydrogenation (Xox) enzyme systems collaborate to give rise to a novel pathway of chemolithotrophic tetrathionate oxidation. ***Molecular microbiology***, *109*(2), pp.169-191. ***Impact Factor (4.0)***

2016

- Roy, C., Alam, M., **Mandal, S**., Haldar, P.K., Bhattacharya, S., Mukherjee, T., Roy, R., Rameez, M.J., Misra, A.K., Chakraborty, R., Nanda, A.K., Mukhopadhyay, S., Ghosh, W., 2016. Global association between thermophilicity and vancomycin susceptibility in bacteria. ***Frontiers in microbiology,*** *7*, p.412. . ***Impact Factor (6.06)***

2015

- Ghosh, W., Roy, C., Roy, R., Nilawe, P., Mukherjee, A., Haldar, P.K., Chauhan, N.K., Bhattacharya, S., Agarwal, A., George, A. and Pyne, P. **Mandal, S**., Rameez, M.J., Bala G. 2015. Resilience and receptivity worked in tandem to sustain a geothermal mat community amidst erratic environmental conditions. ***Scientific Reports***. 5:12179. ***(Impact factor 4.6)***

Book chapters

- Saha, K.K., **Mandal, S**. and Alam, M. (2023). Diversity and Mechanisms of Adaptation of Predominant Bacterial Chemolithotrophs in Extreme Habitats. In Extremophiles: Diversity, Adaptation and Applications. Bentham Science Publishers.

- **Mandal, S**., Mondal, N., Bhattacharya, S., Ghosh, W. and Bhadra, B. (2022). Biogeochemistry of Marine Petroleum Systems. In Systems Biogeochemistry of Major Marine Biomes (eds A. Mazumdar and W. Ghosh). https://doi.org/10.1002/9781119554356.ch7

- Mondal, N., **Mandal, S**. and Ghosh, W. (2022). Geomicrobiology at a Physicochemical Limit for Life: Deep-sea Hypersaline Anoxic Basins. In Systems Biogeochemistry of Major Marine Biomes (eds A. Mazumdar and W. Ghosh). https://doi.org/10.1002/9781119554356.ch12

- Fernandes, S., **Mandal, S**., Sivan, K., Peketi, A. and Mazumdar, A. (2022). Biogeochemistry of Marine Oxygen Minimum Zones with Special Emphasis on the Northern Indian Ocean. In Systems Biogeochemistry of Major Marine Biomes (eds A. Mazumdar and W. Ghosh). https://doi.org/10.1002/9781119554356.ch1

- Sarkar, J., Mondal, N., **Mandal, S**., Chatterjee, S. and Ghosh, W. (2022). Deep Subsurface Microbiomes of the Marine Realm. In Systems Biogeochemistry of Major Marine Biomes (eds A. Mazumdar and W. Ghosh). https://doi.org/10.1002/9781119554356.ch6

Conference abstracts

- Ghosh, W., **Mandal, S**., Bhattacharya, S., Peketi, A. and Mazumdar, A. (2023). The enigmatic polythionate $S_4O_6^{2-}$ as a key junction in the sulfur cycle of continental slope sediments. ***Goldschmidt 2023 Conference*** (33rd Annual Goldschmidt Conference), Lyon, France. Abstract no. 16103.