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**DATE AND PLACE OF BIRTH** 02/09/1967 in Kolkata (India)

**EDUCATION**

*Bachelor of Pharmaceutical Sciences* (1990)  
University: Birla Institute of Technology, Mesra, Ranchi, India

*Master of Technology in Biotechnology* (1992)  
University: Jadavpur University, Kolkata  
Title of thesis: Studies on the microviscosity of dipalmitoylphosphatidylcholine liposomal membrane

*Ph.D. (Engineering)* (1997)  
University: Jadavpur University and University of Hannover, Germany  
(for collaborative work with the German University)  
Field: Applied microbiology  
Title of thesis: Studies on production, isolation and properties of L-asparaginase from *Enterobacter aerogenes* NCIM 2340

**POST DOCTORAL EXPERIENCE**

*Mar. 1997-Nov. 1997:* Jadavpur University, Kolkata India: Molecular mechanisms of bacterial resistance  
*1998-2000:* Institute for Technical Chemistry, University of Hannover, Germany:  
(i) Alternative oxygenation systems in bioreactors (ii) Directed biosynthesis of ergot alkaloids  
*Jan. 2007-Dec. 2007:* Australian Institute of Marine Science, Townsville, Australia:  
Marine microbiology

**SCHOLARSHIPS AND FELLOWSHIPS**

M Tech (Biotechnology) scholarship awarded by the Department of Biotechnology, Ministry of Science and Technology, Government of India, 1990-1992

Senior Research Fellowship of the Council of Scientific and Industrial Research, Ministry of Science and Technology, Government of India, 1993-1995

“Deutscher Akademischer Austauschdienst” (DAAD) fellowship from the Government of the Federal Republic of Germany, 1995-1996

Post Doctoral Fellowship under “Graduiertenkollegs : Chemische und technische Grundlagen der Naturstofftransformation”, financed by the “Deutsche Forschungsgemeinschaft” (DFG), 1998-1999

Fellowship of the “Gottlieb Daimler und Karl Benz Stiftung”, Ladenburg, Germany, 1996

Biotechnology Overseas Associateship of the Department of Biotechnology, Government of India, to undergo advanced training at the Australian Institute of Marine Science, Townsville, Australia from January 2007 to December 2007

Associate Professorship (Faculty Recharge Programme of the UGC) 2013-2020 tenable in Jadavpur University

### **MEMBERSHIP IN EDITORIAL BOARDS AND PROFESSIONAL BODIES**

Review Editor Frontiers in Chemical Biology, 2021

Council member of the West Bengal Academy of Science and Technology, 2021

Member, editorial advisory board of “Chemical Engineering & Technology”, published by Wiley-VCH, Germany

Member, editorial board for the 7<sup>th</sup> edition of the Ullmann's Encyclopedia of Industrial Chemistry (the oldest and the most comprehensive reference work in applied chemistry and chemical engineering, published by Wiley-VCH, Germany) in the area of biotechnology since 2011

Guest editor, Special issue “Biotechnological Applications of Biodiversity”, Vol. 147 of “Advances in Biochemical Engineering/Biotechnology”, Series Editor: Thomas Scheper, Springer (Germany), 2015

Guest Editor, Special issue “Environmental Biotechnology” in Chemical Engineering and Technology, Wiley-VCH Verlag (Germany), 2016

### **EMPLOYMENT**

Joined Jadavpur University, Kolkata, India as Lecturer in March 2000. Career progressed to Reader, Associate Professor and now Professor

## **TEACHING**

Biochemical Engineering, Bioremediation and Environmental Health & Toxicology to M. Tech. (Environmental Biotechnology) students

Environmental Toxicology to Advanced Diploma in Industrial Safety & Environmental Management students

## **CURRICULUM DEVELOPMENT**

Conversion of the three-semester M. Phil. Environmental Science course of Jadavpur University to a four-semester course, 2008

Introduction of the new one year PG diploma course on Environmental Management & Regulations, the first course offered by Jadavpur University in the newly acquired campus (from erstwhile National Instruments Limited) in November, 2010

Introduction of the new course, Master of Technology in Environmental Biotechnology offered by Jadavpur University from July, 2011

Introduction of the new course, Master of Technology in Environmental Science & Technology offered by Jadavpur University (AICTE approval pending)

Introduction of the new 3-semester diploma course on Industrial Safety & Environmental Management, 2017

## **ADMINISTRATION**

Coordinator of three teaching courses (i) M. Tech. in Environmental Biotechnology (iii) M. Phil. in Environmental Science (discontinued in 2010) (iii) PG Diploma in Environmental Management & Regulations, now converted to Diploma in Industrial Safety & Environmental Management

Director (Head), School of Environmental Studies, Jadavpur University (2010-2017, February 2021-till date)

Joint Director, School of Environmental Studies, Jadavpur University (2003-2010)

## **CURRENT RESEARCH INTERESTS**

Exploration of the microbial diversity of the *Sundarbans* (the world's largest tidal mangrove forest) for biotechnological applications. Focused areas: Actinobacteria of the *Sundarbans*, commercial enzymes from bacteria of the *Sundarbans*, cyanobacteria of the *Sundarbans*

Biofilm formation and novel reactor systems for the cultivation of intertidal microorganisms (in collaboration with TU Kaiserslautern, Germany)

Characterization of marine sponge pathogens (in collaboration with the Australian Institute of Marine Science, Australia)

Bioplastic production using halophilic microorganisms (in collaboration with IFB Agro Industries, Kolkata)

Bioconversion of rural slaughterhouse wastes to organic fertilizer

## **INDUSTRY INTERACTION**

Research collaboration with IFB (Agro) Industries, Kolkata (India) on conversion of waste stillage generated during ethanol manufacture (by IFB Agro Industries) to polyhydroxyalkanoate (bioplastic)

Commercialization of patented biofilm-forming vessel by HiMedia Laboratories Pvt. Ltd., Mumbai (Enhanced surface area conico-cylindrical flask ES-CCF for biofilm cultivation: US Patent No. US 8,945,917 B2, Date of patent: February 3<sup>rd</sup>, 2015. Inventors: Sreyashi Sarkar, Debashis Roy, Joydeep Mukherjee)

Mend Earth, a start-up company incubated in IIT (Kanpur) producing bioplastics based on the technology developed

## **PH.D. THESES SUPERVISED**

*Debashish Ghosh* (Now, Scientist in CSIR-Indian Institute of Petroleum, Dehradun, India): Bioprospecting of microorganisms of the Indian *Sundarbans* for industrial enzymes

*Malay Saha* (Now, Lecturer in Government College, Jagatballavpur, Howrah, India): Investigation of antibiotic producing marine Actinobacteria of the *Sundarbans*: taxonomy, production and characterization

*Barindra Sana* (Now, Scientist in A\*STAR, Singapore): Purification and characterization of commercially important enzymes produced by marine microorganisms isolated from the deltaic *Sundarbans*

*Sreyashi Sarkar* (Now, Research Associate in Dept. of Chemical Engineering, Jadavpur University, Kolkata, India) Studies on the production of antimicrobial compounds by actinobacteria isolated from the *Sundarbans* in a niche-mimic bioreactor

*Meyyappan Arumugam* (Now, Scientist in Lupin Biotech, Pune, India) Molecular characterization of some novel antimicrobial compounds from marine actinobacteria of the *Sundarbans*

*Anindita Mitra* (Now, Biological Critical Reagent Specialist, Eindhoven, Netherlands; previously post-doctoral fellow Harvard University <https://scholar.harvard.edu/aninditamitra>) Understanding the relationship between soil physico-chemical factors and occurrence of actinobacteria in the *Sundarbans*

*Arnab Pramanik* (Now, Scientist, Jagadis Bose National Science Talent Search, Kolkata, India) Studies on the antimicrobial activity of marine cyanobacteria of the *Sundarbans*

*Sayani Mitra* (Now Research Associate, Central Pollution Control Board, New Delhi, India) Cultivation methods and bioactivities of biofilm-forming estuarine microorganisms

*Anirban Bhattacharya* (Now Scientific Programme Coordinator in Prasar Bharati, Government of India): Production of polyhydroxyalkanoates (bioplastics) by haloarchaea utilizing ethanol industry waste

*Jayanta Debabrata Choudhury* (Now in Government of West Bengal Civil Service, India) Polyphasic taxonomic identification and whole genome based characterization of virulence genes of a marine sponge pathogen

*Malancha Roy*: (Now Environmentalist, Nature, Environment and Wildlife Society, Kolkata, India): Utilization of slaughterhouse waste for the production of organic fertilizers

*Kaushik Biswas*: (Now, Assistant Professor, Eminent College of Pharmaceutical Technology, Kolkata, India) Molecular characterization of an antimicrobial bioactive compound obtained from the *Sundarbans* and taxonomical identification of the producer

*Riddhi Mahansaria*: (Now, Scientist, Mend Earth Technologies, Kanpur, India) Isolation of halophilic PHA producers from solar salterns of West Bengal and Gujarat

*Sayak Bhattacharyya*: (Now Assistant Professor, Department of Microbiology, Bijoykrishna Howrah Girls' College, India) Characterization of the collagenolytic enzyme produced by *Pseudoalteromonas agarivorans* NW4327, the pathogen of the Great Barrier Reef sponge, *Rhopaloeides odorabile*

*Sandip Chakraborty*: (Now Assistant Professor, Purulia College, West Bengal, India) Taxonomic identification of halophilic cyanobacteria of the *Sundarbans*

*Dhruba Bhattacharyya*: (Now National Post Doctoral Fellow, Bose Institute, Kolkata, India) Identification of bacteria and isolation of bioactive compounds from sponge-associated bacteria of the Indian ocean

## **PH.D. THESIS UNDER SUPERVISION**

*Ankita Bhowmik*: Development of a drying process to convert slaughterhouse wastes to an organic fertilizer

*Santanu Bhunia*: Cultivation of vegetables by application of an organic fertilizer derived from slaughterhouse wastes

*Saranya Balu*: Bioremediation of polyaromatic hydrocarbons of the *Sundarbans* by application of phototrophic biofilms

*Arup Ratan Roy*: Taxonomic identification of halophilic cyanobacteria of the *Sundarbans* (continuation of the work of Sandip Chakraborty)

*Shayontani Basu*: Biochemical insights of the whole genomes of halophilic cyanobacteria of the *Sundarbans*

## **POST DOCTORAL FELLOW MENTORING**

*Dr. Maruthanayagam Veerabadhran (UGC Dr. D.S. Kothari Fellowship)* Relationship between biofilm formation and bioactive metabolite production by cyanobacteria

## **PATENTS**

1. Enhanced surface area conico-cylindrical flask (ES-CCF) for biofilm cultivation: US Patent No. US 8,945,917 B2, Date of patent: February 3<sup>rd</sup>, 2015. Inventors: Sreyashi Sarkar, Debashis Roy, **Joydeep Mukherjee**

2. An apparatus for recycling slaughterhouse waste and method thereof. Inventors: Ankita Bhowmik, Shantanu Bhunia, **Joydeep Mukherjee**: Indian Patent No. 370569, date of grant 29/06/2021

3. Device and method of providing enhanced surface area for growth and attachment of biofilms/ biological cells in a modified cylindrical flask: Atulona Datta and **Joydeep Mukherjee**, Indian Patent No. 402101, date of grant 27/07/2022

**PUBLICATIONS** (Google Scholar cited 2408 times, h-index 29: i-10 index 58)

### **Journal articles**

#### ***Post graduate dissertation work***

1. A fluorescence anisotropy study on the stabilizing effect of tri and tetra nitrovasodilatory drugs on DPPC liposomal membrane: AK Ghosh, **J Mukherjee** , R Basu, M Chatterjee, P Nandy: *Biochimica et Biophysica Acta*, 1153, 20-22, 1993

#### ***Doctoral dissertation work***

2. Fluorescence monitoring during cultivation of *Enterobacter aerogenes* at different oxygen levels : **J Mukherjee**, C Lindemann, T Scheper: Applied Microbiology and Biotechnology, 52, 489-494, 1999

3. A simple method for the isolation and purification of L-asparaginase from *Enterobacter aerogenes*: **J Mukherjee**, K Joeris, P Riechel, T Scheper: Folia Microbiologica, 44 (1), 15-18, 1999

4. Studies on nutritional and oxygen requirements for production of L-asparaginase by *Enterobacter aerogenes*: **J Mukherjee**, S Majumdar, T Scheper: Applied Microbiology and Biotechnology, 53, 180-184, 2000

#### ***Post doctoral research***

5. Decreased membrane permeability in polymixin B resistant *Escherichia coli* mutant exhibiting multiple resistance to  $\beta$ -lactams as well as aminoglycosides : Sk Ohidar Rahman, **Joydeep Mukherjee**, Amit Chakrabarti and Subrata Pal: FEMS Microbiology Letters, 161, 249-254, 1998

6. Progress and prospects of ergot alkaloid research (**Review Article**): **Joydeep Mukherjee** and Miriam Menge: Advances in Biochemical Engineering and Biotechnology, 68, 1-20, 2000

7. Application of oxygen vectors to *Claviceps purpurea* fermentations: Miriam Menge, **Joydeep Mukherjee**, Thomas Scheper: Applied Microbiology and Biotechnology 55, 411-416, 2001

8. Development of a tryptophan auxotrophic mutant of *Claviceps purpurea* 1029 N5 and its preliminary application in the synthesis of new ergot alkaloid molecules : **Mukherjee Joydeep**, Menge Miriam, Hoischen Dorothee, Grammel, Nicolas, Winterfeldt Ekkehard, Keller Ullrich, Scheper Thomas: Acta Biotechnologica, 22 (3-4), 411-415 2002  
**Dedicated to Professor Wolfgang Babel on the occasion of his 65<sup>th</sup> birthday**

#### ***Independent research***

##### ***Research area: Microbial biodiversity and biochemistry***

9. Study of ice nucleating characteristics of *Pseudomonas aeruginosa*: Hazra A, Saha M, De U, **Mukherjee J**, Goswami K: Journal of Aerosol Science, 35, 11, 1405-1414, 2004

10. Studies on the production and purification of an antimicrobial compound and taxonomy of the producer isolated from the marine environment of the *Sundarbans*: Saha M, Ghosh D (Jr.), Ghosh D, Garai D, Jaisankar P, Sarkar K, Dutta P, Das S, Jha T and **Mukherjee J**: Applied Microbiology and Biotechnology, 66, 497-505, 2005

11. Purification and characterization of a salt, solvent, detergent and bleach tolerant protease from a new gamma-Proteobacterium isolated from the marine environment of the *Sundarbans*: Barindra Sana, Debashish Ghosh, Malay Saha and **Joydeep Mukherjee**: *Process Biochemistry* 41, 208-215, 2006
12. Production and purification of a bioactive substance inhibiting multiple drug resistant bacteria and human leukemia cells from a salt-tolerant marine actinobacterium isolated from the Bay of Bengal: Malay Saha, Parasuraman Jaisankar, Satadal Das, Kalyan K. Sarkar, Soma Roy, Shila E. Besra, Joseph R. Vedasiromani, Debashish Ghosh, Barindra Sana, **Joydeep Mukherjee**: *Biotechnology Letters*, 28, 1083-1088, 2006
13. Purification and characterization of an extremely dimethylsulfoxide tolerant esterase from a salt-tolerant *Bacillus* species isolated from the marine environment of the *Sundarbans*: Barindra Sana, Debashish Ghosh, Malay Saha, **Joydeep Mukherjee**: *Process Biochemistry*, 42, 1571-1578, 2007
14. Purification and characterization of an extracellular, uracil specific ribonuclease from a *Bizionia* species isolated from the marine environment of the *Sundarbans* : Barindra Sana, Debashish Ghosh, Malay Saha, **Joydeep Mukherjee**: *Microbiological Research*, 163, 31-38, 2008
15. Induction of apoptosis in human leukemic cell lines U937, K562 and HL-60 by *Litchi chinensis* leaf extract via activation of mitochondria mediated caspase cascades: Soma Roy, Shila E. Besra, Tripti De, Bisweswar Banerjee, **Joydeep Mukherjee**, Joseph R. Vedasiromani: *The Open Leukemia Journal*: 1, 1-14, 2008
16. Distribution of actinomycetes, their antagonistic behaviour and the physico-chemical characteristics of the world's largest tidal mangrove forest: Mitra A, Santra SC, **Mukherjee J**: *Applied Microbiology and Biotechnology*, 80, 685-695, 2008
17. Antibacterial activity and anticorrosive efficiency of aqueous methanolic extract of *Artemisia pallens* (Asteraceae) and its major constituent: Adirajan Elango, Debkumar Nandi, Jayaraman Vinayagam, Arumugam Meyyappan, Churala Pal, Sumit Dey, Venkatachalam Sesha Giri, **Joydeep Mukherjee**, Subhadra Garai, Parasuraman Jaisankar: *Journal of Complementary and Integrative Medicine*, 6, (1), Art. No. 9, 2009
18. Purification and characterization of a collagenolytic enzyme from a pathogen of the Great Barrier Reef sponge, *Rhopaloides odorabile*: **Joydeep Mukherjee**, Nicole Webster and Lyndon Llewellyn: *PLoS One (Marine and Aquatic Sciences)*, 4 (9), Art. No. e 7177, 2009
19. Adaptive immune responses during *Shigella dysenteriae* type 1 infection: an in vitro stimulation with 57 kDa major antigenic OMP in the presence of anti-CD3 antibody: Ashim Kumar Bagchi, Ajoy Kumar Sinha, Rushita Adhikari, **Joydeep Mukherjee**: *Molecular and Cellular Biochemistry*, 338 (1-2), 1-10, 2010



20. Selective deletion of CD8<sup>+</sup> cells up regulated by caspases-1 via IL18 in mice immunized with major outer membrane protein of *Shigella dysenteriae* following infection: Ashim Kumar Bagchi, Ajoy Kumar Sinha, Rushita Adhikari, **Joydeep Mukherjee**: Journal of Clinical Immunology, 30 (3), 408-418, 2010
21. Purification and characterization of Indian catfish (*Clarius batrachus*) IgM: Rushita A Bagchi, Pragna H Parikh, Nairita Roy, Rashmi Pehlathia, **Joydeep Mukherjee**, Ashim K Bagchi: World Journal of Zoology, 5 (3), 205-209, 2010
22. Effect of physico-chemical variables on the growth and condition index of the rock oyster, *Saccostrea cucullata* (Born) in the *Sundarbans*, India: Bhattacharyya, S., Panigrahi, A., Mitra, A., **Mukherjee, J**: Indian Journal of Fisheries, 57 (3), 13-17, 2010
23. Isolation of an unusual metabolite, 2-allyloxyphenol from a marine actinobacterium, its biological activities and applications: Meyyappan Arumugam, Anindita Mitra, Parasuraman Jaisankar, Shreya Dasgupta, Tuhinadri Sen, Ratan Gachhui, Ujjal Kumar Mukhopadhyay and **Joydeep Mukherjee**: Applied Microbiology and Biotechnology, 86 (9), 109-117, 2010
24. Isolation and characterization of cyanobacteria possessing antimicrobial activity from the *Sundarbans*, the world's largest tidal mangrove forest: Pramanik A, Sundararaman M, Das S, Ghosh U and **Mukherjee J**: Journal of Phycology, 47, 731-743, 2011
25. Phylogeny, phenotypic and nutritional characteristics of estuarine soil actinomycetes having broad-spectrum antimicrobial activity derived from an ecologically guided bioprospecting programme: Anindita Mitra, Arnab Pramanik, Subhas Chandra Santra, Pradip Kumar Sen and **Joydeep Mukherjee**: World Journal of Microbiology and Biotechnology, 27, 1679-1688, 2011
26. *Streptomyces sundarbansensis* sp. nov., a novel actinomycete that produces 2-allyloxyphenol: Meyyappan Arumugam, Anindita Mitra, Arnab Pramanik, Malay Saha, Ratan Gachhui and **Joydeep Mukherjee**: International Journal of Systematic and Evolutionary Microbiology, 61, 11, 2664-9, 2011
27. Anticancer, antioxidant and antimicrobial activity of bark extracts from *Commiphora berryi* and *Commiphora caudata*: Ramesh Kumari, Debkumar Nandi, Arumugam Meyyappan, Avik Acharya Chowdhury, Palanisamy Selvamani, Venkatachalam Sesha Giri, **Joydeep Mukherjee**, Santu Bandyopadhyay, Parasuraman Jaisankar: Natural Product Research, 25, 1454-1462, 2011
28. Lipxygenase inhibitory activity of crude bark extracts and isolated compounds from *Commiphora berryi*: Ramesh Kumari, Arumugam Meyyappan, Palanisamy Selvamani, **Joydeep Mukherjee**, Parasuraman Jaisankar : Journal of Ethnopharmacology, 138, 256-259, 2011

29. Nitrogen fixation in *Asaia* sp. (Family Acetobacteraceae): Neeloy Samaddar, Arundhati Paul, Somnath Chakravorty, Writachit Chakraborty, **Joydeep Mukherjee**, Debarati Chowdhuri, Ratan Gachhui: *Current Microbiology*, 63, 226-231, 2011
30. Synthesis, spectroscopy and antimicrobial activity of iron complexes of some smoke flavour compounds: Meyyappan Arumugam, Parasuraman Jaisankar and **Joydeep Mukherjee**: *Natural Product Research*, 26 (20), 1942-1944, 2012
31. Heterotrophic nitrification by *Achromobacter xylosoxidans* S18 isolated from a small-scale slaughterhouse wastewater: Kundu Pradyut, Pramanik Arnab, Mitra Sayani, Choudhury Jayanta Debabrata, **Mukherjee Joydeep**, Mukherjee Somnath: *Bioprocess and Biosystems Engineering*, 35, 721-728, 2012
32. A temperature and salt tolerant L-glutaminase from Gangotri region of Uttarakhand Himalaya: Singh L, Adhikari, DK, Singh B, **Mukherjee, J**, Ghosh D: *Applied Biochemistry and Biotechnology*, 166, 1723-1735, 2012
33. A thermoalkaliphilic halotolerant esterase from *Rhodococcus* sp. LKE-028 (MTCC 5562): Enzyme purification and characterization: Kumar L, Singh B, Adhikari DK, **Mukherjee J**, Ghosh D: *Process Biochemistry*, 47, 983-991, 2012
34. Studies on aqueous solubility of 3, 3'-diindolylmethane derivatives using cyclodextrin inclusion complexes: Sutapa Roy, Madhumita Mandal, Churala Pal, Prabal Giri, Gopinatha Suresh Kumar, **Joydeep Mukherjee**, Parasuraman Jaisankar: *Journal of Molecular Structure*, 1036, 1-6, 2012
35. Draft genome sequence of *Pseudoalteromonas* sp. strain NW 4327 (MTCC 11073, DSM 25418), a pathogen of the Great Barrier Reef sponge *Rhopaloeides odorabile*: Jayanta D. Choudhury, Arnab Pramanik, Nicole S. Webster, Lyndon E. Llewellyn, Ratan Gachhui, **Joydeep Mukherjee**: *Genome Announcements*, January/February 2014 Volume 2 Issue 1 e00001-14, 2014
36. Simultaneous heterotrophic nitrification and aerobic denitrification by *Chryseobacterium* sp. R31 isolated from abattoir wastewater: Pradyut Kundu, Arnab Pramanik, Arpita Dasgupta, Somnath Mukherjee, **Joydeep Mukherjee**: *BioMed Research International*, Article ID 436056, 2014
37. Synthesis and antibacterial evaluation of 3,3,0-diindolylmethane derivatives: Sutapa Roy, Rahul Gajbhiye, Madhumita Mandal, Churala Pal, Arumugam Meyyapan, **Joydeep Mukherjee**, Parasuraman Jaisankar: *Medicinal Chemistry Research*, 23, 1371-1377, 2014
38. The pathogen of the Great Barrier Reef sponge *Rhopaloeides odorabile* is a new strain of *Pseudoalteromonas agarivorans* containing abundant and diverse virulence-related genes: Jayanta D. Choudhury, Arnab Pramanik, Nicole S. Webster, Lyndon E.

Llewellyn, Ratan Gachhui, **Joydeep Mukherjee**: *Marine Biotechnology*, 17 (4), 463-478, 2015

39. Removal of fluoride contamination in water by three aquatic plants: Sukalpa Karmakar, **Joydeep Mukherjee**, Somnath Mukherjee: *International Journal of Phytoremediation*: 18 (3), 222-227, 2016

40. *Streptomyces euryhalinus* sp. nov., a new actinomycete isolated from a mangrove forest: Kaushik Biswas, Jayanta Debabrata Choudhury, Riddhi Mahansaria, Malay Saha, **Joydeep Mukherjee**: *Journal of Antibiotics* (Nature Publishing Group), 70, 747-753, 2017

41. Isolation of indigenous *Staphylococcus sciuri* from chromium-contaminated paddy field and its application for reduction of Cr(VI) in rice plants cultivated in pots: Avishek Dutta, Sayanti Ghosh, Jayanta D Choudhury, Riddhi Mahansaria, Malancha Roy, Ashish Kumar Ghosh, Tarit Roychowdhury, **Joydeep Mukherjee**: *Bioremediation Journal*, 21, 30-37, 2017

42. A new collagenase enzyme of the marine sponge pathogen *Pseudoalteromonas agarivorans* NW4327 is uniquely linked with a TonB dependent receptor: Sayak Bhattacharya, Jayanta Debabrata Choudhury, Ratan Gachhui, **Joydeep Mukherjee**: *International Journal of Biological Macromolecules*: 109, 1140-1146, 2018

43. *Oxynema aestuarii* sp. nov. (Microcoleaceae) isolated from an Indian mangrove forest: Sandeep Chakraborty, Veerapathiran Maruthanayagam, Anusree Achari, Riddhi Mahansaria, Arnab Pramanik, Parasuraman Jaisankar, **Joydeep Mukherjee**: *Phytotaxa*, 374, 24-40, 2018

44. Biosorption of fluoride by water lettuce (*Pistia stratiotes*) from contaminated water: Sukalpa Karmakar, **Joydeep Mukherjee**, Somnath Mukherjee: *International Journal of Environmental Science and Technology*, 15, 801-810, 2018

45. Removal of Pb (II), As (III), and Cr (VI) by nitrogen-starved *Papiliotrema laurentii* strain RY1: Soumyadev Sarkar, Avishek Mukherjee, Rubia Parvin, Subhadeep Das, Uttariya Roy, Somdeep Ghosh, Punarbasu Chaudhuri, Tarit Roychowdhury, **Joydeep Mukherjee**, Semantee Bhattacharya, Ratan Gachhui: *Journal of Basic Microbiology*, DOI: 10.1002/jobm.201900222, 2019

46. U32 collagenase from *Pseudoalteromonas agarivorans* NW4327: Activity, structure, substrate interactions and molecular dynamics simulations: Sayak Bhattacharya, Sourya Bhattacharya, Ratan Gachhui, Saugata Hazra, **Joydeep Mukherjee**: *International Journal of Biological Macromolecules*: 124, 635-650, 2019

47. *Euryhalinema mangrovii* gen. nov., sp. nov. and *Leptoelongatus litoralis* gen. nov., sp. nov. (Leptolyngbyaceae) isolated from an Indian mangrove forest: Sandeep

Chakraborty, Veerabhadran Maruthanayagam, Anushree Achari, Arnab Pramanik, Parasuraman Jaisankar, **Joydeep Mukherjee**: *Phytotaxa*, 422, 58–74, 2019

48. *Bacillus rugosus* sp. nov. producer of a diketopiperazine antimicrobial, isolated from marine sponge *Spongia officinalis* L.: Dhruva Bhattacharya, Sergio de los Santos Villalobos, Valeria Valenzuela Ruiz, Joseph Selvin, **Joydeep Mukherjee**: *Antonie van Leeuwenhoek*, 113, 1675–1687, 2020

49. Whole-Genome sequence of cyanobacterium *Oxynema* sp. AP17, isolated from an Indian mangrove forest: Shayontani Basu, Veerabhadran Maruthanayagam, Arnab Pramanik, **Joydeep Mukherjee**: *Microbiology Resource Announcements* 9:e00808-20. <https://doi.org/10.1128/MRA.00808-20>, 2020

50. Draft genome sequence of *Bacillus* sp. Strain SPB7, isolated from the marine sponge *Spongia officinalis*: Dhruva Bhattacharya, Sergio de los Santos Villalobos, Valeria Valenzuela Ruiz, Joseph Selvin, **Joydeep Mukherjee**: *Microbiology Resource Announcements*, 9:e00358-20. <https://doi.org/10.1128/MRA.00358-20>, 2020

51. *Aerofilum fasciculatum* gen. nov., sp. nov. (Oculatellaceae) and *Euryhalinema pallustris* sp. nov. (Prochlorotrichaceae) isolated from an Indian mangrove forest: Sandeep Chakraborty, Veerabhadran Maruthanayagam, Anushree Achari, Arnab Pramanik, Parasuraman Jaisankar, **Joydeep Mukherjee**: *Phytotaxa*, 522, 2021

52. Effect of biologically induced cementation via ureolysis in stabilization of silty soil: Siddhartha Mukherjee, Ramendu Bikas Sahu, **Joydeep Mukherjee**, *Geomicrobiology Journal*, DOI: 10.1080/01490451.2021.2005188, 2021

53. Structural elucidation and antimicrobial activity of a diketopiperazine isolated from a *Bacillus* sp. associated with the marine sponge *Spongia officinalis*: Dhruva Bhattacharya, Tapan Kumar Lai, Joseph Selvin, **Joydeep Mukherjee**: *Natural Product Research*, 35 (14), 2315-2323, 2021

54. Evaluation of antimicrobial activity of the extract of *Streptomyces euryhalinus* isolated from the Indian Sundarbans: Kaushik Biswas, Dhruva Bhattacharya, Malay Saha, **Joydeep Mukherjee**, Sanmoy Karmakar: *Archives of Microbiology*, 204, 34, 2022

#### **Research area: Biofilms**

55. Enhanced production of antimicrobial compounds by three salt-tolerant actinobacterial strains isolated from the *Sundarbans* in a niche-mimic bioreactor: Sreyashi Sarkar, Malay Saha, Parasuraman Jaisankar, Satadal Das, Debashish Roy, Lalita Gauri Roy, Ratan Gachhui, Tuhinadri Sen and **Joydeep Mukherjee**: *Marine Biotechnology*, 10, 518-526, 2008

56. Antibiotic production by a marine isolate (MS310) in an ultra low speed rotating disk bioreactor: Sreyashi Sarkar, **Joydeep Mukherjee** and Debashis Roy: *Biotechnology and Bioprocess Engineering*, 14 (6) 775-780, 2009
57. Production of a potentially novel antimicrobial compound by a biofilm-forming marine *Streptomyces sp.* in a niche-mimic rotating disk bioreactor: Sreyashi Sarkar, Debashis Roy and **Joydeep Mukherjee**: *Bioprocess and Biosystems Engineering*, 33 (2), 207-217, 2010
58. Enhanced protease production in a polymethylmethacrylate conico-cylindrical flask by two biofilm-forming bacteria: Sreyashi Sarkar, Debashis Roy and **Joydeep Mukherjee**: *Bioresource Technology*, 102, 1849-1855, 2011
59. A novel conico-cylindrical flask aids easy identification of critical process parameters for cultivation of marine bacteria: Sayani Mitra, Sreyashi Sarkar, Ratan Gachhui and **Joydeep Mukherjee**: *Applied Microbiology and Biotechnology*, 90, 321–330, 2011
60. Cellulase and xylanase activity in relation to biofilm formation by two intertidal filamentous fungi in a novel polymethylmethacrylate conico-cylindrical flask: Sayani Mitra, Priyam Banerjee, Ratan Gachhui and **Joydeep Mukherjee**: *Bioprocess and Biosystems Engineering* 34, 1087-1101, 2011a
61. Induced biofilm cultivation enhances riboflavin production by an intertidally derived *Candida famata*: Sayani Mitra, Dheeraj Thawrani, Priyam Banerjee, Ratan Gachhui, **Joydeep Mukherjee**: *Applied Biochemistry and Biotechnology*, 166, 1991-2006, 2012
62. Enhanced biotransformation of fluoranthene by intertidally-derived *Cunninghamella elegans* through biofilm-based and niche-mimic cultivations: Sayani Mitra, Arnab Pramanik, Srijoni Banerjee, Saubhik Haldar, Ratan Gachhui, **Joydeep Mukherjee**: *Applied and Environmental Microbiology*, 79, 7922-7930, 2013
63. Enhanced biofilm formation and melanin synthesis by the oyster settlement-promoting *Shewanella colwelliana* is related to hydrophobic surface and simulated intertidal environment: Sayani Mitra, Ratan Gachhui, **Joydeep Mukherjee**: *Biofouling: The Journal of Bioadhesion and Biofilm Research*, 31 (3), 283-296, 2015
64. Antimicrobial properties of *Kalanchoe blossfeldiana*: A focus on drug resistance with particular reference to quorum sensing mediated bacterial biofilm formation: Ratul Sarkar, Chaitali Mondal, Rammohan Bera, Sumon Chakraborty, Rajib Barik, Paramita Roy, Alekh Kumar, Kirendra K. Yadav, Jayanta Choudhury, Sushil K. Chaudhary, Samir K. Samanta, Sanmoy Karmakar, Satadal Das, Pulok K. Mukherjee, **Joydeep Mukherjee**, Tuhinadri Sen: *Journal of Pharmacy and Pharmacology*, 67, 951-962, 2015
65. Effects of flask configuration on biofilm growth and metabolites of intertidal cyanobacteria isolated from a mangrove forest: Maruthanayagam Veerapathiran, Sandeep

Chakraborty, Sayani Mitra, Sanmoy Karmakar, **Joydeep Mukherjee**: Journal of Applied Microbiology, 125, 190-202, 2018

66. Monitoring of biofilms grown on differentially structured metallic surfaces using confocal laser scanning microscopy: Daniel Kleine, Jonas Chodorski, Sayani Mitra, Christin Schlegel, Katharina Huttenlochner, Christine Müller-Renno, **Joydeep Mukherjee**, Christiane Ziegler, Roland Ulber: Engineering in Life Sciences, 19, 513–521, 2019

67. Assessment of polycyclic aromatic hydrocarbon contamination in the Sundarbans, the world's largest tidal mangrove forest and indigenous microbial mixed biofilm-based removal of the contaminants: Saranya Balu, Shantanu Bhunia, Ratan Gachhui, **Joydeep Mukherjee**: Environmental Pollution, 266, 115270, 2020

68. Polycyclic aromatic hydrocarbon sequestration by intertidal phototrophic biofilms cultivated in hydrophobic and hydrophilic biofilm-promoting culture vessels: Saranya Balu, Shantanu Bhunia, Ratan Gachhui, **Joydeep Mukherjee**: Journal of Hazardous Materials (In press), 2022

#### **Research area: Bioplastics**

69. Utilization of vinasse for the production of polyhydroxybutyrate by *Haloarcula marismortui*: Pramanik A, Mitra A, Arumugam M, Bhattacharya A, Sadhukhan S, Roy A, Haldar S, Mukhopadhyay UK, **Mukherjee J**: Folia Microbiologica, 57, 71-79, 2012

70. Utilization of vinasse for production of poly-3-(hydroxybutyrate-co hydroxyvalerate) by *Haloferax mediterranei*: Anirban Bhattacharyya, Arnab Pramanik, Sudipta Kumar Maji, Saubhik Haldar, Ujjal Kumar Mukhopadhyay, **Joydeep Mukherjee**: AMB Express, 2, 34, 2012

71. Production of poly-3-(hydroxybutyrate-co-hydroxyvalerate) by *Haloferax mediterranei* using rice-based ethanol stillage with simultaneous recovery and re-use of medium salts: Anirban Bhattacharyya, Jayeeta Saha, Saubhik Haldar, Asit Bhowmic, Ujjal Kumar Mukhopadhyay, **Joydeep Mukherjee**: Extremophiles, 18, 463–470, 2014

72. Integration of poly-3-(hydroxybutyrate-co-hydroxyvalerate) production by *Haloferax mediterranei* through utilization of stillage from rice-based ethanol manufacture in India and its techno-economic analysis: Anirban Bhattacharyya, Kuntal Jana, Saubhik Haldar, Asit Bhowmic, Ujjal Kumar Mukhopadhyay, Sudipta De, **Joydeep Mukherjee**: World Journal of Microbiology and Biotechnology, 31 (5), 717-727, 2015

73. Polymerase chain reaction-based screening method applicable universally to environmental haloarchaea and halobacteria for identifying polyhydroxyalkanoate producers amongst them: Riddhi Mahansaria, Jayanta Debabrata Choudhury, **Joydeep Mukherjee**: Extremophiles, 19, 1041-1054, 2015

74. Production enhancement and characterization of the polyhydroxyalkanoate produced by *Natrinema ajinwuensis* (as synonym)  $\equiv$  *Natrinema altunense* strain RM-G10: Riddhi Mahansaria, Anusua Dhara, Amit Saha, Saubhik Haldar, **Joydeep Mukherjee**: International Journal of Biological Macromolecules, 107 (Pt. B), 1480-1490, 2018

75. Enhancing the efficiency of disc membrane chromatography modules by using a flow directing layer: Pedram Madadkar, Riddhi Mahansaria, **Joydeep Mukherjee**, Raja Ghosh: Journal of Membrane Science, 580, 154–160, 2019

76. Production enhancement of poly(3-hydroxybutyrate-co-3-hydroxyvalerate) in *Halogeometricum borinquense*, characterization of the bioplastic and desalination of the bioreactor effluent: Riddhi Mahansaria, Sampa Bhowmik, Anusua Dhara, Amit Saha, Mrinal Kanti Mandal, Raja Ghosh, **Joydeep Mukherjee**: Process Biochemistry, 94, 243-257, 2020

**Research area: Biowaste recycling**

77. Application of rural slaughterhouse waste as an organic fertilizer for pot cultivation of solanaceous vegetables in India: Roy M, Karmakar S, Debsarcar A, Sen PK, **Mukherjee J**: International Journal of Recycling of Organic Wastes in Agriculture: 2:6 (doi:10.1186/2251-7715-2-6), 2013

78. Conversion of rural abattoir wastes to an organic fertilizer and its application in the field cultivation of tomato in India: Malancha Roy, Rimi Das, Anupam Debsarcar, Pradip Kumar Sen, **Joydeep Mukherjee**: Renewable Agriculture and Food Systems, 31 (4), 350-360, 2016

79. Organic cultivation of tomato in India with recycled slaughterhouse wastes: evaluation of fertilizer and fruit safety: Malancha Roy, Rimi Das, Amit Kundu, Sanmoy Karmakar, Satadal Das, Pradip Kumar Sen, Anupam Debsarkar, **Joydeep Mukherjee**: MDPI Agriculture, Special Issue "Recycling Organic Wastes in Agriculture"5, 826-856, 2015

80. Application of recycled slaughterhouse wastes as an organic fertilizer for successive cultivations of bell pepper and amaranth: Shantanu Bhunia, Ankita Bhowmik, Rambilash Mallick, Anupam Debsarcar, **Joydeep Mukherjee**: Scientia Horticulturae, 280, 109927, 2021

81. Development of a novel helical-ribbon mixer dryer for conversion of rural slaughterhouse wastes to an organic fertilizer and implications in the rural circular economy: Ankita Bhowmik, Shantanu Bhunia, Anupam Debsarkar, Rambilash Mallick, Malancha Roy, **Joydeep Mukherjee**: Sustainability 13, (16), 9455, 2021

***Research area: Modelling and software***

82. Development of a computer simulation program to predict the  $\beta$ -lactamase activity on the basis of ampicillin fluorescence values: Rao HV, Masood AM and **Mukherjee J** : Journal of Fluorescence, 12 (2), 287-290, 2002

83. A tropical marine microbial natural products geobibliography as an example of desktop exploration of current research using web visualization tools: **Joydeep Mukherjee**, Lyndon E Llewellyn and Elizabeth A Evans-Illidge : Marine Drugs, 6, 550-577, 2008

84. Mathematical modelling for phytoplankton distribution in *Sundarbans* estuarine system, India: Tanaya Das, Saranya Chakraborti, **Joydeep Mukherjee**, Goutam Kumar Sen: Ecological Modelling 368, 111–120, 2018

85. Assessing the effect of herbicide diuron on river biofilm: A statistical model. Tanaya Bhowmick, Goutam Sen, **Joydeep Mukherjee**, Reshmi Das: Chemosphere, 282, 131104, 2021

***Review articles and book chapters***

86. Marine enzymes (**Invited review article**): Debashish Ghosh, Malay Saha, Barindra Sana and **Joydeep Mukherjee**: Advances in Biochemical Engineering and Biotechnology, 96, 189-218, 2005

87. Bioprocess data on the production of marine enzymes (**invited review article**): Sreyashi Sarkar, Arnab Pramanik, Anindita Mitra and **Joydeep Mukherjee**: Marine Drugs, 8 (4), 1323-1372, 2010

88. Applications of the microbial biodiversity of the mangroves: Arnab Pramanik, Anindita Mitra, Sreyashi Sarkar, Arumugam Meyyappan and **Joydeep Mukherjee**: (**invited book chapter**) in “Mangroves-Ecology, biology and taxonomy”, publisher: Nova Science Publishers, USA, 2010

89. Bioprocess engineering approaches for the production of marine enzymes (**invited book chapter**): Sreyashi Sarkar, Sayani Mitra, Arnab Pramanik, Jayanta Debabrata Choudhury, Anirban Bhattacharyya, Malancha Roy, Kaushik Biswas, Debashis Roy and **Joydeep Mukherjee** in “Marine Enzymes”, editor, Antonio Trinicone, publisher Biohealthcare Publishing (United Kingdom), 2011

90. Ecological roles and biotechnological applications of marine and intertidal microbial biofilms (**invited review article**): Mitra S, Sana B and **Mukherjee J**: Special issue “Productive Biofilms” in Advances in Biochemical Engineering and Biotechnology, 146, 163-205, 2014



91. Environmental microbiology and biotechnology: progress and prospects (**invited review article**): Joydeep Mukherjee: *Chemie Ingenieur Technik* 86, 12, 1-15, 2014
92. Marine enzymes-production and applications: Kai Muffler, Barindra Sana, **Joydeep Mukherjee**, Roland Ulber: Book chapter in *Springer Handbook of Marine Biotechnology*, Se-Kwon Kim (Editor), 2015
93. Microbial diversity of the Sundarbans, the world's largest tidal mangrove forest, and its bioprospects: Kaushik Biswas, **Joydeep Mukherjee**: Book chapter in *Microbial Diversity in Ecosystem Sustainability and Biotechnological Applications, Volume 2, Soil and Agroecosystems* Eds. Tulasi Satyanarayana, Subrata Kumar Das, Bhavdish Narain Johri, Springer, 2020
94. Microbial Infections and Virulence Factors: Sayak Bhattacharya, **Joydeep Mukherjee** book chapter in *Model Organisms for Microbial Pathogenesis, Biofilm Formation and Antimicrobial Drug Discovery*, Editors Busi Siddhardha, Madhu Dyavaiah, Asad Syed, 2020
95. The current and future role of microbial culture collections in food security worldwide: Alondra María Díaz-Rodríguez, Lilian Alejandra Salcedo Gastelum, Carmen María Félix Pablos, Fannie Isela Parra-Cota, Gustavo Santoyo, Mariana Laura Puente, Dhruba Bhattacharya, **Joydeep Mukherjee**, Sergio de los Santos-Villalobos: *Frontiers in Sustainable Food Systems* 4:614739. doi: 10.3389/fsufs.2020.614739, 2021
96. Role of intertidal microbial communities in carbon dioxide sequestration and pollutant removal: A review: Abhishek Mandal, Ahana Dutta, Reshmi Das, **Joydeep Mukherjee**: *Marine Pollution Bulletin* 170, 112626, 2021

#### **PUBLICATIONS (INTERNATIONAL CONFERENCE PROCEEDINGS)**

1. Optimisation of the production of L-asparaginase from *Enterobacter aerogenes* : **J Mukherjee**, S Majumdar, C Schippers, T Scheper : Poster presentation in DECHEMA Conferences, Wiesbaden, Germany, Vol 1, 367, 1996
2. Reaktionstechnische optimierung der ergotalkaloid production durch *Claviceps purpurea*(Process optimization for ergot alkaloid production by *Claviceps purpurea*): M Menge, D Boehl, **J Mukherjee**, T Scheper, Poster presentation in DECHEMA Conferences, Wiesbaden, Germany, Vol 1, 109, 1998 (in German)
3. Untersuchungen zur alternative sauerstoffversorgung bei Kultivierung von *Claviceps purpurea* (Investigations on alternative oxygenation systems for cultivation of *Claviceps purpurea*): Miriam Menge, Daniela Boehl, **Joydeep Mukherjee**, Thomas Scheper: Poster presentation in DECHEMA Conferences, Wiesbaden, Germany, Vol 1, 192, 1999 (in German)

4. Studies on marine Actinomycetes of the Bay of Bengal producing antibiotic lead compounds against recalcitrant MDR microorganisms : M Saha, D. Ghosh, S Das, T Jha, **J Mukherjee**: Poster presentation in the International Symposium on the Chemistry and Biology of Marine Organisms, September 26<sup>th</sup>, 2003, Crete, Greece.
5. Studies on a marine Actinomycetes isolated from the *Sundarbans* region-India (Abstract No : 5012) : M Saha, D. Ghosh, S Das, T Jha, **J Mukherjee** : Poster presentation in the Marine Biotechnology Conference, September 23<sup>rd</sup> – 24<sup>th</sup> , 2003, Tokyo, Japan.
6. First ever bioprospecting of the marine microorganisms of the *Sundarbans*: Purification and characterization of some industrially important enzymes and antimicrobial agents : Sana Barindra, Ghosh Debashish, Saha Malay, Das Satadal, Jaisankar Parasuraman and **Mukherjee Joydeep**: Poster presentation at the International Symposium on New Frontiers in Marine Natural Product Research (NFMNPR), National Institute of Oceanography, Goa, India, 23 - 24 February 2007
7. Cyanobacteria from Indian Sundarbans as a source of antimicrobial compounds: Arnab Pramanik and **Joydeep Mukherjee**: Oral presentation at the International Conference on Bioscience, Biochemistry and Bioinformatics (ICBBB), 26-28<sup>th</sup> February, 2011 in Singapore
8. Application of halophilic archaea for the production of polyhydroxyalkanoates (bioplastics): Riddhi Mahansaria, **Joydeep Mukherjee**: ICBE Asia (AIChE) Conference, 8-10 January, 2018, Singapore
9. Identification of marine sponge pathogen and purification and characterization of virulence factor, collagenase enzyme: S. Bhattacharya, J. D. Choudhury, **J. Mukherjee**: American Society for Microbiology (ASM) Conference, 7-11 June, 2018, Atlanta, USA
10. Effect of surface materials, planktonic and biofilm growth on production of exocellular polysaccharides from intertidal cyanobacteria for both health as well as for industrial application: M. Veerabhadran, **J. Mukherjee**: 3<sup>rd</sup> European Conference on Biodeterioration of Stone Monuments, November, 8 to 9<sup>th</sup>, 2018, Cergy-Pontoise, France
11. Cyclic diketopiperazine from marine sponge associated *Bacillus sp.*: Structural characterization and antimicrobial activity: Dhruva Bhattacharyya and **Joydeep Mukherjee**: Poster presentation in Gordon Research Conferences, Ventura, United States: February 23<sup>rd</sup> to 28<sup>th</sup>, 2020
12. Tannic acid induced membrane surface modification to increase efficiency of direct contact membrane distillation for desalination of the bioreactor effluent of a bioplastic-producing haloarchaeal bioprocess: Arnab Banerjee, **Joydeep Mukherjee**: Materials Today Proceedings, 47 (7), 1404-1408, 2021
13. Valorization of rural abattoir waste as fertilizer for sustainable agricultural production and socio-economic development: Shantanu Bhunia, Ankita Bhowmik, Anupam

Debsarkar, Rambilash Mallick, **Joydeep Mukherjee**: Nature Conferences, Waste Management and Valorisation for a Sustainable Future, Seoul, South Korea, October 26-28, 2021

## **TECHNICAL REPORTS**

1. Indien: Patentgesetze im Umbruch (India: Patent Laws under transformation) : Bio Region News Letter, Volume 5, September 1999 (in German)
2. Microbial diversity: distribution, ecology and biotechnology: Anindita Mitra and **Joydeep Mukherjee (Invited chapter)** in Environmental Management and Biodiversity Conservation Plan for *Sundarbans* Biodiversity (Ed. Asish Ghosh), submitted by the World Wildlife Fund to the World Bank, 2012
3. Inventorisation of plastic product manufacturing in West Bengal: Status report prepared for the West Bengal Pollution Control Board, 2021

## **CONSULTANCY AND RESEARCH PROJECTS ON-GOING/COMPLETED**

*Title* : Microbiological activity of surface treated ceramic tiles

*Sponsored by* : Institut für Solar Energie Forschung GmbH (Institute for Solar Energy Research Pvt. Ltd.), Emmerthal, Germany

*Amount* : DM 4,000.00 (Rs. 1,00,000.00 approx.)

*Duration* : Oct. 1999 – Dec. 1999

*Title* : Screening of marine microorganisms from the Bay of Bengal for the production of antibiotics and enzymes

*Sponsored by*: The All India Council of Technical Education, Ministry of Human Resource Development, Government of India

*Amount*: Rs. 5,25,000.00

*Duration*: 2001-2004

*Title*: Development of a bioprocess and screening of marine microorganisms for the production of novel bioactive compounds

*Sponsored by*: The Department of Science and Technology, Ministry of Science and Technology, Government of India

*Amount*: Rs.7,56,000.00

*Duration*: 2002-2005

*Title*: Development of antibiotic lead compounds from marine actinobacteria as potential new generation antibiotics

*Sponsored by*: Council of Scientific and Industrial Research, Government of India

*Amount*:Rs. 16,00,000.00

*Duration*: 2005-2008

*Title:* Marine cyanobacteria of the *Sundarbans*-a novel source of antibiotic lead compounds

*Sponsored by:* University Grants Commission, Government of India

*Amount:* Rs. 6,25,000.00

*Duration:* 2006-2009

*Title:* Establishing the ultra low speed rotating disk bioreactor (RDBR) as a niche-mimic reactor for cultivation of biofilm-forming marine/estuarine microorganisms

*Sponsored by:* Department of Biotechnology, Government of India

*Amount:* Rs. 34,50,000.00

*Duration:* 2009-2013

*Title:* Application of halophilic and halotolerant bacteria for the production of polyhydroxyalkanoates from vinasse

*Sponsored by:* Department of Biotechnology, Government of West Bengal

*Amount:* Rs. 13,16,000.00

*Duration:* 2011-2014

*Title:* Taxonomy, collagenolytic enzyme characterization and identification of virulence genes of a marine sponge pathogen

*Sponsored by:* Department of Science and Technology, Government of India

*Amount:* Rs. 25,00,000.00

*Duration:* 2012-2015

**Short-listed for Distinguished Investigator Award of DST-SERB**

*Title:* Identification of eight obligatelyhalophilic cyanobacteria of the Sundarbans and molecular characterization of the antimicrobial compounds therefrom

*Sponsored by:* Ministry of Earth Sciences (Government of India) sponsored national research programme “Drugs from Sea”

*Amount:* Rs. 50,00,000.00 (Jointly with Dr. Jaisankar of IICB, Kolkata)

*Duration:* 2014-2017

*Title:* Mining the genome and metagenome of marine microbiome for pks-nrps biosynthetic gene clusters and bioactive small molecules (In collaboration with Pondicherry University and InStem, Bengaluru)

*Sponsored by:* Department of Biotechnology, Government of India

*Amount:* Rs. 180,70,382.00 (Total) Jadavpur University: Rs.33, 80,779.00

*Duration:* 2016-2019

*Title:* Application of membrane distillation to reduce the cost of the desalination component of polyhydroxybutyratevalerate (bioplastic) production by *Haloferax mediterranei* utilizing rice-based ethanol industry waste (stillage)

*Sponsored by:* Shastri Indo-Canadian Institute, in collaboration with Prof. Raja Ghosh, Department of Chemical Engineering, McMaster University, Hamilton, Canada

*Amount:* Rs. 10,00,000.00

*Duration:* 2017-2019

*Title:* Bioremediation of polyaromatic hydrocarbons in the *Sundarbans* by application of phototrophic biofilms

*Sponsored by:* Department of Biotechnology, Government of West Bengal

*Amount:* Rs. 24,84,020.00

*Duration:* 2018-2021

*Title:* Production of organic fertilizer by utilizing slaughterhouse wastes and its application for the cultivation of potato and vegetables

*Sponsored by:* Department of Science & Technology, Government of West Bengal

*Amount:* Rs. 22,99,600.00

*Duration:* 2018-2021

**Project selected by the Technology Development and Adaptation Center, Government of West Bengal for commercialization**

*Title:* Towards a Sustainable Earth” (TaSE) research project “Opportunities and trade-offs between the Sustainable Development Goals (SDGs) for food, welfare and the environment in deltas (Co-PI)

*Sponsored by:* Department of Biotechnology, Government of India (In collaboration with Prof. Sugata Hazra, School of Oceanographic Studies, Jadavpur University)

*Amount:* Rs. 107,62,800.00

*Duration:* 2019-2021

*Title:* Inventorization of plastic product manufacturing and recycling in West Bengal

*Sponsored by:* West Bengal Pollution Control Board

*Amount:* Rs. 10,00,000.00

*Duration:* September 2019-March 2020

### **INDIVIDUAL RESEARCH FELLOWSHIPS AWARDED TO PH.D. STUDENTS AND POST DOCTORAL FELLOWS**

*Malay Saha:* ICMR Senior Research Fellowship (2003-2006)

*Barindra Sana:* ICMR Senior Research Fellowship (2004-2007)

*Sreyashi Sarkar:* CSIR Senior Research Fellowship (2005-2008) and CSIR Research Associateship (2009-2012)

*Anindita Mitra:* West Bengal State Government Junior Research Fellowship (2006-2009)

*Arnab Pramanik:* ICMR Senior Research Fellowship (2009-2012)

*Anirban Bhattacharya:* West Bengal State Government Junior Research Fellowship (2010-2015) and DST Inspire Fellowship, (2011-2016)

*Jayanta Debabrata Choudhury:* DST Inspire Fellowship, (2010-2015)

*Sayani Mitra*: CSIR Senior Research Fellowship (2013-2015)

*Malancha Roy*: DST Women Scientists Fellowship (2012-2015)

*Riddhi Mahansaria*: UGC NET fellowship (2012-2017)

*Marathuyanagam V*: Dr. D. S. Kothari postdoctoral fellowship of the UGC (2015-2018)

*Arup Ratan Roy*: CSIR NET Junior Research Fellowship (2019-2024)