Curriculum Vitae

Name & Designation : **Dr. Surajit Das, Professor**

Date of Birth : **25/11/1980**

Caste & Gender : **General & Male**

Institution with address: **Laboratory of Environmental Microbiology and Ecology (LEnME), Department of Life Science, National Institute of Technology, Rourkela, Odisha – 769008**

Telephone no. : **9556425605 (Mobile); 0661-2462684 (Office)**

Fax No. : **0661-2462022**

E-mail : surajit@nitrkl.ac.in, surajit.cas@gmail.com

ResearchGate : http://www.researchgate.net/profile/Surajit_Das5

Google Scholar : http://scholar.google.co.in/citations?user=KOiOEFIAAAAJ&hl=en

Scopus : http://www.scopus.com/authid/detail.url?authorId=14021259300#

Citations: 8038; h-index: 46; i10-index: 140

Area of research : Bacterial biofilm/ Environmental biotechnology/ Marine microbiology/ biodiversity & ecology

Research themes : i) Understanding the genetics and regulation of microbial biofilm for use in environmental application

ii) Exploring diversity, distribution and chemical ecology of marine microorganisms (bacteria & fungi) from tropical, coastal, mangrove and deep-sea environments using taxonomic and molecular tools

iii) Response of marine microorganisms to ocean acidification and climate change stressors

iv) Host- microbe interaction, diseases and health in aquatic animals, viz. fish and shrimp

v) Environmental biotechnology and bioremediation through marine microorganisms

Qualifications:

Degree	University	Year	Subjects	% of marks
Post-doc	University of Tasmania, Australia	2008	Marine biotechnology	Endeavour Research Fellowship
Ph.D.	Annamalai University, Tamil Nadu	2008 (Awarded)	Marine Biology (Specialization: Marine microbiology)	Awarded by research
M.Sc.	Annamalai University, Tamil Nadu	2003	Coastal Aquaculture	8.69 OGPA (First Rank)
B.Sc.	University of Calcutta	2000	Industrial Fish & Fisheries (IFFV), Zoology and Chemistry	71.62%

Honour/Memberships:

- Member, **American Society for Microbiology** in 2022 (Member ID: 200339248I).
- Mentor (FL3241) for the **Science Academies' Summer Research Fellowship Programme** conducted by Indian Academy of Sciences (Bengaluru), Indian National

Science Academy (New Delhi), and The National Academy of Sciences, India (Allahabad).

- Member of the **IUCN Commission on Ecosystem Management (CEM)**, South Asia.
- **IUCN nominated expert** (observer) on **'Synthetic Biology'** of Biosafety Clearing-House (BCH) set up by the Cartagena Protocol on Biosafety.
- **Member, Institutional Biosafety Committee (IBSC)** approved by the Department of Biotechnology, Govt of India (2018-2021).
- Academic Editor of **PLOS One.**
- Associate Editor, **iMeta** journal. http://www.imeta.science/editor.html
- Associate Editor of **BMC Microbiology** in **"Ecological and Evolutionary Microbiology"** section.
- Life member (L-18910) of the **Indian Science Congress Association**, Kolkata.
- Life member (474-2009) of the **Association of Microbiologists of India**.
- Life member (LM-029-10) of the **National Academy of Biological Sciences (NABS)**, Chennai, India (www.nabsindia.org).
- Life member (L/M- 1052) of the **National Environmental Science Academy**, New Delhi, India (www.nesa.in).

Experience:

University/Organization	Designation	From	To
Dept of Life Science, National Institute of Technology, Rourkela	Professor	March, 2023	Till date
Dept of Life Science, National Institute of Technology, Rourkela	Head of the Department	July, 2020	June, 2023
Dept of Life Science, National Institute of Technology, Rourkela	Associate Professor	Feb, 2018	March, 2023
Dept of Life Science, National Institute of Technology, Rourkela	Assistant Professor	July, 2009	Feb, 2018
National Centre for Marine Conservation and Resource Sustainability, University of Tasmania, Australia	Postdoctoral Research Fellow (Under the aegis of Endeavour Research Fellowship, Australian Govt)	May, 2008	Oct, 2008
Amity Institute of Biotechnology, Amity University U.P, Noida	Lecturer	March, 2008	July, 2009

Professional recognition, awards, fellowships received:

- **Junior Scientist Award in Environmental Microbiology** from the Association of Microbiologists of India in 2009.
- **Postdoctoral Fellowship** (Endeavour Research Fellowship) at University of Tasmania, Australia in 2008.
- **Junior Scientist for the Year 2007 award** by the Board of International Awards of National Environmental Science Academy, New Delhi, India.

Publications:

A) JOURNALS

1) Kumari, S. and **S. Das,** 2023. **Bacterial enzymatic degradation of recalcitrant organic pollutants: Catabolic pathways and genetic regulations.** *Env. Sci. Poll. Res.,* (in press) (IF: 5.190). https://doi.org/10.1007/s11356-023-28130-7
2) Vandana, and **S. Das,** 2023. **Cell surface hydrophobicity and petroleum hydrocarbon degradation by biofilm-forming marine bacterium *Pseudomonas***

***furukawaii* PPS-19 under different physicochemical stress.** *J. Hazard. Mater.* (in press) https://doi.org/10.1016/j.jhazmat.2023.131795 (IF: 14.224).

3) Behera, A. D., N. Chittoria, S. Kumari, S. Chatterjee and **S. Das,** 2023. **Homology modelling of laccase enzyme of filamentous fungus *Trichoderma* sp. CNSC-2 and its role in pyrene degradation.** *Geomicrobiol. J.* (in press) https://doi.org/10.1080/01490451.2023.2218362 (IF: 2.412).
4) Behera, S. and **S. Das,** 2023. **Microplastic on biogeochemical cycles and role of plastisphere microbes in the biodegradation and upcycling of microplastic.** *Chemosphere,* 334: 138928 https://doi.org/10.1016/j.chemosphere.2023.138928 (IF: 8.943).
5) Vandana, M. Priyadarshanee, and **S. Das,** 2023. **Bacterial extracellular polymeric substances: Biosynthesis and interaction with environmental pollutants.** *Chemosphere,* 332: 138876 https://doi.org/10.1016/j.chemosphere.2023.138876 (IF: 8.943).
6) Behera, A. D. and **S. Das,** 2023. **Ecological insights and potential application of marine filamentous fungi in environmental restoration.** *Rev. Env. Sci and Bio/Technology,* 22:281-318 https://doi.org/10.1007/s11157-023-09655-2 (IF: 14.284).
7) Behera, S. and **S. Das,** 2023. **Potential and prospects of Actinobacteria in the bioremediation of environmental pollutants: Cellular mechanisms and genetic regulations.** *Microbiol. Res.,* 273: 127399 https://doi.org/10.1016/j.micres.2023.127399 (IF: 5.07).
8) Mallick, S. and **S. Das,** 2023. **Acid-tolerant bacteria and prospects in industrial and environmental applications.** *Appl. Microbiol. Biotechnol.,* 107: 3355-3374 https://doi.org/10.1007/s00253-023-12529-w (IF: 5.560).
9) Kumari, S., B. Gupta and **S. Das,** 2023. **Functional amyloid of extracellular polymeric substances of marine bacterium *Pseudomonas aeruginosa* PFL-P1 in the binding of polycyclic aromatic hydrocarbons.** *Process Biochemistry,* 130: 67-77 https://doi.org/10.1016/j.procbio.2023.04.007 (IF: 4.885).
10) Chatterjee, S. and **S. Das,** 2022. **Whole genome sequencing of biofilm-forming and chromium-resistant filamentous fungus *Aspergillus niger* BSC-1 isolated from Indian Sundarban mangrove ecosystem.** *World J. Microbiol. Biotechnol.,* 39 (2): 55 https://doi.org/10.1007/s11274-022-03497-w (IF: 4.253).
11) Chatterjee, S., S. Mahanty, P. Das, P. Chaudhuri, and **S. Das,** 2022. **Batch adsorption and process optimization for sequestration of Cr(VI) from aqueous solution using biofilm forming filamentous fungus *Aspergillus niger* BSC-1.** *J. Water Process Engg.,* 50: 103325 https://doi.org/10.1016/j.jwpe.2022.103325 (IF: 7.34).
12) Palit, K., S. Rath, S. Chatterjee and **S. Das,** 2022. **Microbial diversity and ecological interactions of microorganisms in the mangrove ecosystem: Threats, vulnerability and adaptations.** *Env. Sci. Poll. Res.,* 29: 32467-32512. https://doi.org/10.1007/s11356-022-19048-7 (IF: 4.223).
13) Rath, S., K. Palit and **S. Das,** 2022. **Variable pH and subsequent change in pCO_2 modulates the biofilm formation, synthesis of extracellular polymeric substances, and survivability of a marine bacterium *Bacillus stercoris* GST-03.** *Environmental Research,* 214: 114128 https://doi.org/10.1016/j.envres.2022.114128 (IF: 8.431)
14) Mahto, K. U., Vandana, M. Priyadarshanee, D. P. Samantaray and **S. Das,** 2022. **Bacterial biofilm and EPS in treatment of environmental pollutants: Beyond the protective role in survivability.** *J. Cleaner Production,* 379: 134759 https://doi.org/10.1016/j.jclepro.2022.134759 (IF: 11.072).

15) Mahto, K. U., S. Kumari and **S. Das,** 2022. **Unravelling the complex regulatory networks in biofilm formation in bacteria and relevance of biofilm in environmental remediation.** *Crit. Rev. in Biochemistry & Mol. Biol.,* 57 (3): 305-332 https://doi.org/10.1080/10409238.2021.2015747 (IF: 7.634).

16) Mahto, K. U. and **S. Das,** 2022. **Bacterial biofilm and etracellular polymeric substances in the Moving Bed Biofilm Reactor for wastewater treatment: A review.** *Bioresource Technology*, 345: 126476. https://doi.org/10.1016/j.biortech.2021.126476 (IF: 9.642).

17) Mahanty, S., P. Tudu, S. Ghosh, S. Chatterjee, P. Das, **S. Das,** S. Bhattacharyya, K. Acharya and P. Chaudhuri, 2021. **Chemometric study on the biochemical marker of the manglicolous fungi to illustrate its potentiality as a bio indicator for heavy metal pollution in Indian Sundarbans.** *Mar. Poll. Bull.* 173: 113017 https://doi.org/10.1016/j.marpolbul.2021.113017 (IF: 5.553).

18) Priyadarshanee, M., S. Chatterjee, S. Rath, H.R. Dash and **S. Das,** 2022. **Cellular and genetic mechanism of bacterial mercury resistance and their role in biogeochemistry and bioremediation.** *J. Hazard. Mater.,* 423: 126985 https://doi.org/10.1016/j.jhazmat.2021.126985 (IF: 10.85).

19) Mahanty, S., P. Tudu, S. Ghosh, S. Chatterjee, P. Das, **S. Das,** S. Bhattacharyya, K. Acharya and P. Chaudhuri, 2021. **Chemometric study on the biochemical marker of the manglicolous fungi to illustrate its potentiality as a bio indicator for heavy metal pollution in Indian Sundarbans.** *Mar. Poll. Bull.* 173: 113017 https://doi.org/10.1016/j.marpolbul.2021.113017 (IF: 5.553).

20) Mahto, K. U. and **S. Das,** 2021. **Microscopic techniques to evaluate the biofilm formation ability of a marine bacterium *Pseudomonas aeruginosa* PFL-P1 on different substrates.** *Microscopy Res & Tech,* 84 (10): 2451-2461 https://doi.org/10.1002/jemt.23799 (IF: 2.769).

21) Vandana and **S. Das,** 2021. **Structural and mechanical characterization of biofilm associated bacterial polymer in emulsification of petroleum hydrocarbon.** *3 Biotech,* 11(5): 239 https://doi.org/10.1007/s13205-021-02795-8 (IF: 2.406).

22) Priyadarshanee, M. and **S. Das,** 2021. **Characterization of biofilm and bioremediation potential of multi-metal resistant marine bacterium *Pseudomonas chengduensis* PPSS-4 isolated from contaminated sediment of Paradip Port, Odisha.** *J. Earth System Sci.* 130 (3): 125 https://doi.org/10.1007/s12040-021-01627-w (IF: 1.371).

23) Priyadarshanee, M. and **S. Das,** 2021. **Biosorption and removal of toxic heavy metals by metal tolerating bacteria for bioremediation of metal contamination: A comprehensive review.** *J. Env. Chem. Engg.* 9: 104686 https://doi.org/10.1016/j.jece.2020.104686 (IF: 5.909).

24) Kumari, S., N. Mangwani and **S. Das,** 2021. **Naphthalene catabolism by biofilm forming marine bacterium *Pseudomonas aeruginosa* N6P6 and the role of quorum sensing in regulation of dioxygenase gene.** *Journal of Applied Microbiology*, 130 (4): 1217-1231. http://doi.org/10.1111/jam.14867 (IF: 3.772).

25) Palit, K. and **S. Das,** 2021. **Community structure, taxonomic diversity and spatio-temporal variation of sediment and water bacteria in Bhitarkanika mangrove ecosystem, India.** *Int. J. Env. Sci. Technol.,* 18: 1147-1166. https://doi.org/10.1007/s13762-020-02851-5 (IF: 2.860).

26) Mangwani, N., S. Kumari and **S. Das,** 2021. **Taxonomy and characterization of biofilm forming polycyclic aromatic hydrocarbon degrading bacteria from marine environments.** *Polycyclic Aromatic Compounds,* 41 (6): 1249-1262. https://doi.org/10.1080/10406638.2019.1666890 (IF: 3.744).

27) Chatterjee, S., S. Kumari, S. Rath, M. Priyadarshanee and **S. Das,** 2020. **Diversity, structure and regulation of microbial metallothionein: Metal resistance and possible applications in sequestration of toxic metals**. *Metallomics,* 12: 1637-1655. https://doi.org/10.1039/D0MT00140F (IF: 3.796).

28) Chatterjee, S., S. Dey, M. Sarma, P. Chaudhuri and **S. Das,** 2020. **Biodegradation of Congo red by manglicolous filamentous fungus *Aspergillus flavus* JKSC-7 isolated from Indian Sundarban mangrove ecosystem.** *Appl. Biochemistry and Microbiology* 56 (6): 708-717. https://doi.org/10.1134/S0003683820060046 (IF: 1.022).

29) Mahto, K. U. and **S. Das,** 2020. **Whole genome characterization and phenanthrene catabolic pathway of a biofilm forming marine bacterium *Pseudomonas aeruginosa* PFL-P1**. *Ecotoxicology and Env Safety,* 206: 111087 https://doi.org/10.1016/j.ecoenv.2020.111087 (IF: 4.872)

30) Mahanty, S., S. Chatterjee, S. Ghosh, P. Tudu, T. Gaine, M. Bakshi, **S. Das,** P. Das, S. Bhattacharyya, S. Bandyopadhyay and P. Chaudhuri, 2020. **Synergistic approach towards the sustainable management of heavy metals in wastewater using mycosynthesized iron oxide nanoparticles: Biofabrication, adsorptive dynamics and chemometric modeling study.** *Journal of Water Process Engineering,* 37: 10426 https://doi.org/10.1016/j.jwpe.2020.101426 (IF: 3.465)

31) Chatterjee, S., S. Mahanty, P. Das, P. Chaudhuri and **S. Das,** 2020. **Biofabrication of iron oxide nanoparticles using manglicolous fungus *Aspergillus niger* BSC-1 and removal of Cr(IV) from aqueous solution**. *Chem. Engg. Journal,* 385: 123790 https://doi.org/10.1016/j.cej.2019.123790 (IF: 10.652).

32) Chatterjee, S. and **S. Das,** 2020. **Developmental stages of biofilm formation and characterization of biofilm extracellular matrix produced by a manglicolous fungus *Aspergillus niger* BSC-1.** *Journal of Basic Microbiology,* 60 (3): 231-242. (IF: 1.909). https://doi.org/10.1002/jobm.201900550

33) Kumar, H., S. K. Sinha, V. V. Goud and **S. Das,** 2019. **Removal of Cr(VI) by magnetic iron oxide nanoparticles synthesized from extracellular polymeric substances of chromium resistant acid-tolerant bacterium *Lysinibacillus sphaericus* RTA-01.** *J. Health Sci. Engg.* 17: 1001-1016. https://doi.org/10.1007/s40201-019-00415-5 (IF: 2.773)

34) Pattnaik, S., D. Dash, S. Mohapatra, M. Pattnaik, A. K. Marandi, **S. Das** and D. P. Samantaray, 2020. **Improvement of rice plant productivity by native Cr(VI) reducing and plant growth promoting soil bacteria *Enterobacter cloacae*.** *Chemosphere,* 240: 124895. https://doi.org/10.1016/j.chemosphere.2019.124895 (IF: 5.108).

35) Mahanty, S., M. Bakshi, S. Ghosh, T. Gaine, S. Chatterjee, S. Bhattacharya, **S. Das**, P. Das, and P. Chaudhuri, 2019. **Mycosynthesis of iron oxide nanoparticles and its application for the treatment of chromium containing solution: Synthesis, Adsorption isotherm, Kinetics and Thermodynamics study.** *Environmental Nanotechnology, Monitoring & Management,* 12: 100276 https://doi.org/10.1016/j.enmm.2019.100276

36) Mangwani, N., S. Kumari and **S. Das,** 2019. **Taxonomy and characterization of biofilm forming polycyclic aromatic hydrocarbon degrading bacteria from marine environments.** *Polycyclic Aromatic Compounds* (in press). https://doi.org/10.1080/10406638.2019.1666890 (IF: 1.237).

37) Kumari, S. and **S. Das,** 2019. **Expression of metallothionein encoding gene *bmtA* in biofilm forming marine bacterium *Pseudomonas aeruginosa* N6P6 and**

understanding its involvement in Pb(II) resistance and bioremediation. *Env. Sci. Poll. Res.,* 26: 28763-28774. https://doi.org/10.1007/s11356-019-05916-2 (IF: 2.914).

38) Mahanty, S., M. Bakshi, S. Ghosh, S. Chatterjee, S. Bhattacharya, P. Das, **S. Das**, and P. Chaudhuri, 2019. **Green synthesis of iron oxide nanoparticles mediated by filamentous fungi isolated from Sundarban mangrove ecosystem, India.** *BioNanoScience,* 9: 637-651. https://doi.org/10.1007/s12668-019-00644-w

39) **Das, S.,** J. Chakraborty, S. Chatterjee and H. Kumar, 2018. **Prospects of biosynthesized nanomaterials for remediation of organic and inorganic environmental contaminants.** *Environmental Science: Nano,* 5: 2784-2808. (IF: 7.704).

40) Panda, A. N., S. R. Mishra, L. Ray, **S. Das**, G. Rastogi, A. K. Pattanaik, T. K. Adhya, M. Suar and V. Raina, 2018. **Taxonomic description and genome sequence of *Halobacillus marinus* sp. nov., a novel strain isolated from Chilika Lake, India.** *J. Microbiol.,* 56 (4): 223-230. (IF- 1.924).

41) Chakraborty, J., S. Mallick, R. Raj and **S. Das,** 2018. **Functionalized extracellular polymers of *Pseudomonas aeruginosa* N6P6 for synthesis of CdS nanoparticles and cadmium bioadsorption.** *Journal of Polymers and the Environment,* 26 (7): 3097-3108 (IF: 1.877).

42) Dash, H. R., M. Sahu, B. Mallick and **S. Das,** 2017. **Functional efficiency of MerA protein in mercury resistant bacteria for efficient use in bioremediation of inorganic mercury**. *Biochimie,* 142: 207-215. (IF: 3.017).

43) Mohapatra, S., S. Maity, H. R. Dash, **S. Das,** S. Pattnaik, C. C. Rath and D. P. Samantaray, 2017. ***Bacillus* and Biopolymer: Prospects and Challenges.** *Biochemistry and Biophysics Reports,* 12: 206-213.

44) Kumari, S., S. Mahapatra and **S. Das,** 2017. **Ca-alginate as a support matrix for Pb(II) biosorption with immobilized biofilm associated extracellular polymeric substances of *Pseudomonas aeruginosa* N6P6.** *Chem. Engg. J.,* 328: 556-566. (IF: 6.216)

45) Patel, B., S. Kumari, R. Banerjee, M. Samanta and **S. Das,** 2017. **Disruption of quorum sensing regulated pathogenic traits of fish pathogen *Aeromonas hydrophila* by a potent quorum quencher tannic acid.** *Biofouling,* 33(7): 580-590. (IF: 3.896).

46) Mangwani, N., S. Kumari, and **S. Das**, 2017. **Marine bacterial biofilms in polycyclic aromatic hydrocarbons (PAHs) bioremediation under terrestrial condition in a soil microcosm.** *Pedosphere*, 27 (3): 548-558. (IF: 1.535).

47) Mangwani, N., S. Kumari and **S. Das,** 2017. **Bacterial biofilms and quorum sensing: Fidelity in bioremediation technology.** *Biotechnology and Genetic Eng. Rev.,* 32: 43-73. (IF: 1.909).

48) Chakraborty, J. and **S. Das,** 2017. **Application of spectroscopic techniques for monitoring microbial diversity and bioremediation.** *Applied Spectroscopic Reviews,* 52: 1-38. (IF: 4.271).

49) Kumari, S., N. Mangwani and **S. Das,** 2017. **Interaction of Pb(II) and biofilm associated extracellular polymeric substances of a marine bacterium *Pseudomonas pseudoalcaligenes* NP103.** *Spectrochim Acta A Mol Biomol Spectrosc,* 173: 655-665. (IF: 2.653).

50) Srivastava, S., H. R. Dash, **S. Das,** 2017. **Assessment of the biological quality of riverine water using Pathogenicity Islands (PAI) of coliform bacteria as pollution indicator.** *Water Resources,* 44 (1): 150-157. (IF- 0.361).

51) Dash, H. R., S. Basu and **S. Das,** 2017. **Evidence of mercury trapping in biofilm-EPS and mer operon based volatilization of inorganic mercury in a marine**

bacterium *Bacillus cereus* BW-201B. *Archives of Microbiology,* 199: 445-455. (IF: 1.760).

52) Dash, H. R. and **S. Das,** 2016. **Interaction between mercuric chloride and extracellular polymers of biofilm-forming mercury resistant marine bacterium *Bacillus thuringiensis* PW-05.** *RSC Adv.,* 6: 109793-109802. (IF: 3.84).

53) Mohapatra, S., D. P. Samantaray, S. M. Samantaray, B. B. Mishra, **S. Das,** S. Majumdar, S. K. Pradhan, S. N. Rath, C. C. Rath, J. Akthar and G. Achary, 2016. **Structural and thermal characterization of PHAs produced by *Lysinibacillus* sp. through submerged fermentation process.** *Int. J. Biol. Macromol.,* 93: 1161-1167. (IF: 3.138).

54) Mangwani, N., S. K. Shukla, S. Kumari, **S. Das** and T. S. Rao, 2016. **Effect of biofilm parameters and extracellular polymeric substance composition on polycyclic aromatic hydrocarbons degradation.** *RSC Adv.,* 6: 57540-57551. (IF: 3.84).

55) Ray, L., S. R. Mishra, A. N. Panda, **S. Das**, G. Rastogi, A. K. Pattanaik, T. K. Adhya, M. Suar and V. Raina, 2016. ***Streptomyces chitinivorans* sp. nov., a chitinolytic strain isolated from estuarine Chilika Lake sediment in Odisha, India.** *Int. J. Syst. Evol. Microbiol.,* 66: 3241-3248. (IF- 2.511).

56) Patel, B., P. Kumar, R. Banerjee, M. Basu, A. Pal, M. Samanta and **S. Das,** 2016. ***Lactobacillus acidophilus* suppresses fish pathogen *Aeromonas hydrophila* induced cytotoxicity in carp macrophages.** *Molecular Immunology,* 75: 69-83. (IF- 2.973).

57) Mangwani, N., S. Kumari and **S. Das,** 2016. **Effect of synthetic N-acylhomoserine lactones on cell-cell interactions in marine *Pseudomonas* and biofilm mediated degradation of polycyclic aromatic hydrocarbons.** *Chem. Eng. Journal,* 302: 172-186. (IF- 6.216).

58) Chakraborty, J. and **S. Das,** 2016. **Molecular perspectives and recent advances in microbial remediation of Persistent Organic Pollutants.** *Env. Sci. Poll. Res.* 23 (17): 16883-16903. (IF- 2.828).

59) Kumari, S., N. Mangwani and **S. Das,** 2016. **Synergistic effect of quorum sensing genes in biofilm development and PAHs degradation by marine bacterium.** *Bioengineered,* 7 (3): 205-211. (IF- 1.676).

60) Dash, H. R. and **S. Das,** 2016. **Diversity, community structure and bioremediation potential of mercury resistant marine bacteria of estuarine and coastal environments of Odisha, India.** *Env. Sci. Poll. Res.,* 23: 6960-6971. (IF- 2.828).

61) **Das,** S., H. R. Dash and J. Chakraborty, 2016. **Genetic basis and importance of metal resistant genes in bacteria for bioremediation of contaminated environments with toxic metal pollutants.** *Appl. Microbiol. Biotechnol.,* 100: 2967-2984. (IF- 3.332).

62) Raj, R., K. Dalei, J. Chakraborty and **S. Das,** 2016. **Extracellular polymeric substances of a marine bacterium mediated synthesis of CdS nanoparticles for removal of cadmium from aqueous solution.** *J. Colloid Interface Sci.,* 462: 166-175. (IF- 5.091).

63) Mangwani, N., S. Kumari and **S. Das,** 2015. **Involvement of quorum sensing genes in biofilm development and degradation of polyaromatic hydrocarbons by marine bacterium *Pseudomonas aeruginosa* N6P6.** *Appl. Microbiol. Biotechnol.,* 99: 10283-10297. (IF- 3.332).

64) Chakraborty, J. and **S. Das**, 2015. **Characterization of the metabolic pathway and catabolic gene expression in biphenyl degrading marine bacterium *Pseudomonas aeruginosa* JP-11.** *Chemosphere*, 144: 1706-1714. (IF- 3.340).

65) **Das, S.,** S. Ganeriwal, N. Mangwani and B. Patel, 2015. **Survival and expression of DNA repair genes in marine bacteria *Pseudomonas pseudoalcaligenes* NP103 and *P. aeruginosa* N6P6 in response to environmental stressors.** *Microbiology (Mikrobiologya)* 84 (5): 644-653. (IF- 0.642).

66) **Das, S.** and N. Mangwani, 2015. **Ocean acidification and marine microorganisms: Responses and consequences.** *Oceanologia,* 57: 349-361. (IF- 1.024).

67) Dash, H. R. and **S. Das,** 2015. **Bioremediation of inorganic mercury through volatilization and biosorption by transgenic *Bacillus cereus* BW-03 (pPW-05).** *Int. Biodeterior. Biodegrad.* 103: 179-185. (IF- 2.235).

68) Bhagowati, P., S. Pradhan, H. R. Dash and **S. Das,** 2015. **Production, optimization and characterization of polyhydroxybutyrate, a biodegradable plastic by *Bacillus* spp.** *Biosci. Biotechnol. Biochem.,* 79 (9): 1454-1463. (IF- 1.206).

69) Kumari, S., N. Mangwani and **S. Das,** 2015. **Low-voltage producing microbial fuel cell constructs using biofilm-forming marine bacteria.** *Curr. Sci.* 108 (5): 925-932. (IF- 0.935).

70) Chakraborty, J. and **S. Das,** 2014. **Characterization and cadmium-resistant gene expression of biofilm forming marine bacterium *Pseudomonas aeruginosa* JP-11.** *Env. Sci. Pollut. Res.,* 21 (24): 14188-14201. (IF- 2.757).

71) Mangwani, N., S. K. Shukla, S. Kumari, T. S. Rao and **S. Das,** 2014. **Characterization of *Stenotrophomonas acidaminiphila* NCW-702 biofilm for implication in the degradation of polycyclic aromatic hydrocarbons.** *J. Appl. Microbiol.,* 117 (4): 1012-1024. (IF- 2.386).

72) **Das, S.,** H. R. Dash, N. Mangwani, J. Chakraborty and S. Kumari, 2014. **Understanding molecular identification approaches for genetic relatedness and phylogenetic relationships of microorganisms.** *J. Microbiol. Methods,* 103: 80-100. (IF- 2.096).

73) Chakraborty, J., S. Chakrabarti and **S. Das,** 2014. **Characterization and antimicrobial properties of biosurfactant produced by *Bacillus* of polluted sites.** *Appl. Biochem. Microbiol.* 50 (6): 577-586. (IF- 0.658).

74) Dash, H. R. and **S. Das,** 2014. **Assessment of mercury pollution through mercury resistant marine bacterial population in Bhitarkanika mangrove ecosystem, Odisha, India.** *Indian J. Geo-Marine Sci.,* 43 (6): 1103-1115. (IF- 0.313).

75) Dash, H. R. and **S. Das,** 2014. **Bioremediation potential of mercury by *Bacillus* spp. isolated from marine environment and wastes of steel industry.** *Bioremediation J.,* 18(3): 204-212. (IF- 0.714).

76) Giri, S., H. R. Dash and **S. Das,** 2014. **Isolation and characterization of mercury resistant bacteria form industrially contaminated area of Rourkela, Orissa.** *Natl. Acad. Sci. Lett (India),* 37 (3): 237-243. (IF- 0.067).

77) Mangwani, N., S. Kumari, S. K. Shukla, T. S. Rao and **S. Das,** 2014. **Phenotypic switching in biofilm forming marine bacterium *Paenibacillus lautus* NE3B01.** *Curr. Microbiol.,* 68 (5): 648-656. (IF- 1.359).

78) Dash, H. R., N. Mangwani and **S. Das,** 2014. **Characterization and potential application in mercury bioremediation of highly mercury resistant marine bacterium *Bacillus thuringiensis* PW-05.** *Env. Sci. Pollut. Res.,* 21: 2642-2653. (IF- 2.757).

79) Mangwani, N., S. K. Shukla, T. S. Rao and **S. Das,** 2014. **Calcium mediated modulation of *Pseudomonas mendocina* NR802 biofilm influences the phenanthrene degradation.** *Colloids & Surfaces B. Biointerfaces* 114, 301-309. (IF- 4.287).

80) Rauta, P. R., M. Samanta, H. R. Dash, B. Nayak and **S. Das,** 2014. **Toll-like receptors (TLRs) in aquatic animals: Signaling pathways, expressions and immune responses.** *Immunol. Lett.,* 158 (1-2): 14-24. (IF- 2.367).

81) Jain, K., S. Parida, N. Mangwani, H. R. Dash and **S. Das,** 2013. **Isolation and characterization of biofilm-forming bacteria and associated extracellular polymeric substances from oral cavity.** *Ann. Microbiol.,* 63: 1553-1562. (IF- 1.039).

82) Dash, H. R., N. Mangwani, J. Chakraborty, S. Kumari and **S. Das,** 2013. **Marine bacteria: potential candidates for enhanced bioremediation.** *Appl. Microbiol. Biotechnol.,* 97 (2): 561-571. (IF- 3.811).

83) **Das, S.,** P. S. Lyla and S. Ajmal Khan, 2013. **The distribution and diversity of culturable aerobic heterotrophic benthic bacteria in the continental slope of the Bay of Bengal: Linked Abiotic Factors, including a Tsunami**. *Russ. J. Mar. Biol.,* 39 (3): 169-181 (IF- 0.496).

84) Dash, H. R. and **S. Das,** 2012. **Bioremediation of mercury and important of bacterial *mer* genes.** *Int. Biodeterior. Biodegrad.,* 75: 207-213. (IF- 2.235).

85) Mangwani, N., H. R. Dash, A. Chauhan and **S. Das,** 2012. **Bacterial quorum sensing: Functional features and potential applications in biotechnology.** *J. Mol. Microbiol. Biotechnol.,* 22: 215-227. (IF- 1.487).

86) Haldar, S., S. Chatterjee, N. Sugimoto, **S. Das,** N. Chowdhury, A. Hinenoya, M. Asakura and S. Yamasaki, 2011. **Identification of *Vibrio campbellii* isolated from diseased farm shrimps, south India and establishing its pathogenic potential in *Artemia* model.** *Microbiology,* 157: 179-188. (IF-2.852).

87) **Das, S.** and N. Mangwani, 2010. **Recent developments in microbial fuel cells: a review.** *J. Sci. Ind. Res.* 69: 727-731. (IF- 0.587).

88) **Das, S.,** L. R. Ward and C. Burke, 2010. **Screening of marine *Streptomyces* spp. for potential use as probiotics in aquaculture.** *Aquaculture,* 305: 32-41. (IF- 1.828).

89) **Das, S.,** P. S. Lyla and S. Ajmal Khan, 2006. **Marine microbial diversity and ecology: Present status and future perspectives.** *Curr. Sci.,* 90 (10): 1325-1335. (IF- 0.833).

B) BOOK CHAPTERS

1) Dash, H. R. and **S. Das**, 2022. **Microbial community signatures for estimation of postmortem time intervals.** *In:* Advances in Applied Microbiology, eds. Gadd, G. M. and S. Sariaslani, Academic Press, (in press) https://doi.org/10.1016/bs.aambs.2022.02.002

2) Dash, H. R. and **S. Das**, 2021. **Mercury-Resistant Marine Bacterial Population in Relation to Abiotic Variables at the Bay of Bengal, India.** *In:* Estuarine Biogeochemical Dynamics of the East Coast of India, eds. Das. S. and T. Ghosh, Springer-Verlag, pp. 81-102. https://doi.org/10.1007/978-3-030-68980-3_6

3) Chatterjee, S., S. Kumari, S. Rath and **S. Das,** 2021. **Prospects and scope of microbial bioremediation for the restoration of the contaminated sites.** *In:* Microbial Biodegradation and Bioremediation, 2nd Edition, eds. S. Das and H. R. Dash, Elsevier Inc, USA, ISBN: 978-0-323-85455-9, pp. 1-30 (p. 628).

4) Vandana, M. Priyadarshanee, U. Mahto and **S. Das,** 2021. **Mechanism of toxicity and adverse health effects of environmental pollutants.** *In:* Microbial Biodegradation and Bioremediation, 2nd Edition, eds. S. Das and H. R. Dash, Elsevier Inc, USA, ISBN: 978-0-323-85455-9, pp. 33-53 (p. 628).

5) Chakraborty, J., K. Palit and **S. Das,** 2021. **Metagenomic approaches to study the culture-independent bacterial diversity of a polluted environment—a case study on north-eastern coast of Bay of Bengal, India.** *In:* Microbial Biodegradation and Bioremediation, 2nd Edition, eds. S. Das and H. R. Dash, Elsevier Inc, USA, ISBN: 978-0-323-85455-9, pp. 81-107 (p. 628).

6) **Das, S.** and B. Patel, 2020. **Marine resources and animals in modern biotechnology.** *In:* Animal Biotechnology: Models in Discovery and Translation, 2nd edition, eds. Verma, A.S. and A. Singh, Academic Press, pp. 567-591 (p. 773). https://doi.org/10.1016/B978-0-12-811710-1.00027-6

7) Dash, H. R. and **S. Das,** 2018. **Molecular Methods for studying microorganisms from atypical environments.** *In:* Methods in Microbiology, volume 45, eds. V. Gurtler and J. T. Trevors, Academic Press, Elsevier, pp. 89-122.

8) **Das, S.,** J. Chakraborty and H. R. Dash, 2017. **Metals and their toxic effects: An introduction to the noxious elements.** *In:* Handbook of Metal-Microbe interactions and bioremediation, eds. Das, S. and H. R. Dash, CRC Press. pp. 3-24.

9) **Das, S.** and H. R. Dash, 2017. **Assessment of diversity and bioremediation potential of mercury resistant marine bacteria in Bay of Bengal, Odisha, India.** *In:* Handbook of Metal-Microbe interactions and bioremediation, eds. Das, S. and H. R. Dash, CRC Press. pp. 793-803.

10) Kumari, S., J. Chakraborty and S. Das, 2016. **Cyclodextrin glycosyltransferase (CGTase) mediated enhanced biodegradation of Polycyclic Aromatic Hydrocarbons (PAHs).** *In:* Environmental Science & Engineering (Vol 10: Industrial Processes & Nanotechnology), ed. Govil, J. N., Studium Press LLC, USA, pp. 487-509.

11) Chakraborty, J., N. Mangwani, H. R. Dash, S. Kumari, H. Kumar and S. Das, 2017. **Marine bacterial exopolysaccharides: Functional diversity and prospects in environmental restoration.** *In:* Marine Glycobiology: Principles and Applications, ed. Se-Kwon Kim, CRC Press. pp. 235-254.

12) **Das, S.** and H. R. Dash, 2014. **Microbial bioremediation: A potential tool for restoration of contaminated areas.** *In:* Microbial Biodegradation and Bioremediation, ed. S. Das, Elsevier Inc, USA, ISBN-13: 978-0128000212, pp. 1-21 (p. 634).

13) **Das, S.,** R. Raj., N. Mangwani, H. R. Dash and J. Chakraborty, 2014. **Heavy metals and hydrocarbons: Adverse effects and mechanism of toxicity.** *In:* Microbial Biodegradation and Bioremediation, ed. S. Das, Elsevier Inc, USA, ISBN-13: 978-0128000212, pp. 23-54 (p. 634).

14) De, J., H. R. Dash and **S. Das.,** 2014. **Mercury pollution and bioremediation- A case study on biosorption by a mercury-resistant marine bacterium.** *In:* Microbial Biodegradation and Bioremediation, ed. S. Das, Elsevier Inc, USA, ISBN-13: 978-0128000212, pp. 137-166 (p. 634).

15) Chakraborty, J. and **S. Das,** 2014. **Biosurfactant-based bioremediation of toxic metals.** *In*: Microbial Biodegradation and Bioremediation, ed. S. Das, Elsevier Inc, USA, ISBN-13: 978-0128000212, pp. 167-201 (p. 634).

16) Shukla, S. K., N. Mangwani, T. S. Rao and **S. Das,** 2014. **Biofilm-mediated bioremediation of polycyclic aromatic hydrocarbons.** *In*: Microbial Biodegradation and Bioremediation, ed. S. Das, Elsevier Inc, USA, ISBN-13: 978-0128000212, pp. 203-232 (p. 634).

17) **Das, S.,** 2014. **Biotechnological exploitation of marine animals.** *In:* Animal Biotechnology: Models in Discovery and Translation, eds. Verma, A.S. and A. Singh, Academic Press, pp. 541-562 (p. 613).

18) Kishore, P., N. Mangwani, H. R. Dash and **S. Das,** 2013. **Taxonomic study of antibiotic-producing marine *Actinobacteria*.** *In:* Marine Microbiology: Bioactive Compounds and Biotechnological Applications, ed. Se-Kwon Kim, Wiley-VCH Verlag GmbH & Co, pp. 45-58 (p. 549).

19) **Das, S.,** 2013. **Microbes from extreme environment: Molecular identification procedures.** *In:* Analyzing Microbes - Manual of Molecular Biology Techniques, Springer-Verlag, (Arora, D.K., S. Das and S. Mesapogu, eds), pp. 153-168.

20) **Das, S.** and H. R. Dash, 2013. **Molecular phylogenetics of microbes.** *In:* Analyzing Microbes - Manual of Molecular Biology Techniques, Springer-Verlag, (Arora, D.K., S. Das and S. Mesapogu, eds), pp. 245-260.

21) Dash, H. R., N. Mangwani and **S. Das,** 2013. **Molecular identification of microbes: IV. *Vibrio*.** *In:* Analyzing Microbes - Manual of Molecular Biology Techniques, Springer-Verlag, (Arora, D.K., S. Das and S. Mesapogu, eds), pp. 113-122.

22) Dash, H. R. and **S. Das,** 2013. **Microarray analysis of different functional genes of microorganisms.** *In:* Analyzing Microbes - Manual of Molecular Biology Techniques, Springer-Verlag, (Arora, D.K., S. Das and S. Mesapogu, eds), pp. 281-290.

23) Verma, A. S., **S. Das** and A. Singh, 2012. **Ganges water, Bacteriophages and Leprosy: Religion to Science.** *In:* Environment and Biotechnology, eds. Prasad, R. and A. Kumar, Lambert Academic Publishing, pp. 23-59 (p. 542).

24) Joshi, P., N. Mangwani and **S. Das,** 2010. **Biosorption of Cr(VI) by bacterial exopolysaccharides.** *In:* Microbial biotechnology, eds. B. B. Mishra and H. N. Thatoi, APH Pub. Corp., New Delhi, pp. 309-317 (p. 391).

25) **Das, S.,** P. S. Lyla and S. Ajmal Khan, 2008. **Microbial resources of the mangrove and Vellar estuary, southeast coast of India.** *In:* Advances in Aquatic Ecology- Vol II (Ed. V. B. Sakhare), Daya Publishing House, Delhi, pp. 26-33 (p. 143).

26) **Das, S.,** P. S. Lyla and S. Ajmal Khan, 2007. **Physico-chemical parameters of the benthic environment of the continental slope of Bay of Bengal.** *In:* Advances in Aquatic Ecology- Vol I (Ed. V. B. Sakhare), Daya Publishing House, Delhi, pp. 52-63 (p. 194).

27) **Das, S.,** P. S. Lyla and S. Ajmal Khan, 2006. **Marine microbial biodiversity: Present status and advanced statistical paradigms.** *In:* Conservation Biology in Asia. (Eds. J. A. McNeely, T. M. McCarthy, A. Smith, L. Olsvig-Whittaker and E. D. Wikramanayake), Society for Conservation Biology Asia Section and Resources Himalaya Foundation, Nepal, pp. 363-385 (p. 455).

C) BOOKS

1) **Das, S.** and N. A. Kungwani (Eds.). 2022. **Understanding microbial biofilms: Fundamentals and applications.** Academic Publisher, Elsevier, USA, ISBN: ISBN: 978-0-323-99977-9 https://doi.org/10.1016/C2020-0-02522-3 p. 746.
2) **Das, S.** and H. R. Dash (Eds.). 2021. **Microbial Biodegradation and Bioremediation- Techniques and Case Studies for Environmental Pollution.** 2nd Edition, Elsevier Inc, USA, ISBN: 978-0-323-85455-9 https://doi.org/10.1016/C2020-0-01871-2 p. 628.
3) **Das, S.** and H. R. Dash (Eds.), 2020. **Microbial and Natural Macromolecules: Synthesis and Applications.** Academic Press, Elsevier, ISBN: 9780128200841, p. 862. https://doi.org/10.1016/C2019-0-00320-2
4) Dash, H. R., P. Shrivastava and **S. Das,** 2019. **Principles and practices of DNA analysis: A laboratory manual for forensic DNA typing.** Springer-Verlag. https://www.springer.com/gp/book/9781071602737 DOI: 10.1007/978-1-0716-0274-4

5) **Das, S.** and H. R. Dash (Eds.), 2018. **Microbial diversity in the genomic era.** Academic Press, Elsevier, Paperback ISBN: 9780128148495, https://doi.org/10.1016/C2017-0-01759-7 p. 636.
6) Dash, H. R., P. Shrivastava, B. K. Mohapatra and **S. Das** (Eds.), 2018. **DNA fingerprinting: Advancements and future endeavors.** Springer-Verlag, GmBH Germany. ISBN: 978-981-13-1582-4 https://doi.org/10.1007/978-981-13-1583-1
7) **Das, S.** and H. R. Dash (Eds.), 2017. **Handbook of Metal-Microbe interactions and Bioremediation.** CRC Press, USA, ISBN 978-1-4987-6242-7, p. 803.
8) **Das, S.** and H. R. Dash, 2014. **Microbial Biotechnology- A Laboratory manual for bacterial systems.** Springer-Verlag, GmBH Germany, ISBN 978-81-322-2094-7, p. 239.
9) **Das, S.** (Ed.). 2014. **Microbial Biodegradation and Bioremediation.** Elsevier Inc, USA, ISBN-13: 978-0128000212, p. 634.
10) Verma, A. S., **S. Das** and A. Singh, 2014. **Laboratory manual for biotechnology.** S. Chand, New Delhi, ISBN 978-9383746224, p. 743.
11) Arora, D. K., **S. Das** and S. Mesapogu, (Eds.) 2013. **Analyzing Microbes - Manual of Molecular Biology Techniques.** Springer-Verlag, GmBH Germany, ISBN 978-3-642-34410-7, p. 352.

Ongoing R&D Research Projects as PI:

Sl No.	Title of Project	Funding Agency	Amount (Lakhs)	Duration
1	Biotechnological approaches of plant associated microbes for improved plant productivity and ecosystem functioning in mangrove forest of Bhitarkanika, Odisha, India	DBT	39.50	Jan 2022-Jan 2025
2	Involvement of bacterial cytoskeletons in morphogenesis during biofilm development for xenobiotic degradation	BRNS	34.32	Sept 2022-Sept 2025
3	Biofilm developmental stages of marine bacteria and biofilm-EPS based bioremediation of toxic heavy metals from industrial waste water	Odisha DST, Govt of Odisha	10.00	Jan 2022-Jan 2025
4	Role of microorganisms on the productivity of the Bhitarkanika mangrove forest and potentiality of rhizosphere inhabiting bacteria in mangrove reforestation	CSIR	31.56	Aug 2021-Aug 2024

Completed R&D Research Projects as PI:

Sl No	Title of Project	Funding Agency	Amount (Lakhs)	Duration
1	Studies on association between biofilm formation and quorum sensing autoinducer in potential marine bacteria for enhanced utilization in bioremediation	DBT (RGYI), GoI	26.88	2011-2014
2	Molecular characterization and genetic analysis of biofilm forming mercury resistant marine bacteria for bioremediation	DBT, GoI	7.92	2013-2014
3	Diversity and synthesis of immunoglobulin in the Indian major Carps	NASF, ICAR, GoI	62.924	2013-2017
4	Phototrophic biofilm based waste water recycling	DBT	28.76	2014-

	for sustainable water usage in rubber latex coagulation	(Twinning), GoI		2018
5	Taxonomy and diversity of culture-dependent and culture-independent heterotrophic bacteria of Bhitarkanika mangrove Ecosystem, Odisha, India	MoEFCC, GoI	27.576	Mar 2016-Mar 2019
6	Green synthesis of iron nanoparticles from manglicolous fungi of Indian Sundarban and their application in sequestration of heavy metals from contaminated water	DBT, GoI	14.626	Jan 2016-Jan 2019
7	Understanding biofilm modulation and catabolic gene expression by quorum sensing autoinducers in marine bacteria for degradation of polycyclic aromatic hydrocarbon	DBT, GoI	37.196	Mar 2017-Mar 2020
8	Characterization of marine bacterial biofilm for utilization in degradation of petroleum hydrocarbon	DST, Govt of Odisha	9.40	Sept 2017-Sept 2020
9	Enhanced carbonate precipitation of ureolytic and nitrifying microbe treated rubber wastewater	DBT (Twinning), GoI	27.35	Sept 2019-Sept 2022
10	Studies on impact and response of ecologically important bacteria towards environmental stressors of Bhitarkanika Mangrove ecosystem, Odisha	MoES, GoI	43.74	July 2019-July 2022

Research guidance:

- **Ph.D. completed : 09**
- **Ph.D. ongoing : 12**
- **M.Sc. project guidance : 43**

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

sd/- Surajit Das **Rourkela, 10th July, 2023**