1. **NAME : MISS SUNANDA MISHRA**

2. **Designation:** Guest Faculty, Department of Botany
3. **Email Id:** mishrasunanda96@gmail.com
4. **Qualification:** M.Sc. and M.Phil in Botany
5. **Area of interest**: Microbiology, Environmental Science, Embryology and Biotechnology
6. **Area of research:** Environmental Science
7. **Teaching Area**

   • UG – Plant Diversity, Microbiology, Anatomy, Biochemistry, Taxonomy

   • PG – Plant Diversity, Microbiology, Embryology, Cell biology, Conservation ecology

8. **Total No. of Teaching Experience (Yrs):**

   • UG: 3 yrs

   • PG: 1 yr

9. **Publication Profile** a) Research Articles Published / Books Chapters Published:

   **a) Research Articles Published**


1. Mishra, S., Rath, C.C., Das, A.P., 2019. Marine microfiber pollution: A review on present status and future Challenges.Mar. Poll. Bull. 140, 188–197

2. Prabhakar, A., Mishra S., and Das, A.P., 2019. Isolation and identification of Lead (Pb) solubilising bacteria from automobile waste and its potential for recovery of Lead from end of life waste batteries. Geomicrobiology Journal.

3. Mishra, S., Rout, P.K., Das, A.P., 2019. Solar Photovoltaic Panels as next generation waste: A Review. Biointerface Research in Applied Chemistry. 9(6), 4539-4546.

4. Sunanda Mishra, Debasis Dash, Subhra Subhadarsini, 2019."Antibacterial Activity Assessment of Native Fungus Isolated from Chromite Mines of Sukinda, Odisha", International Journal of Science and Research (IJSR), Volume 8 Issue 11, November 2019, 1628 – 1631

5. Singh, R.P., Mishra, S., Das, A.P. 2020. Synthetic microfibers: Pollution toxicity and remediation, Chemosphere. https://doi.org/10.1016/j.chemosphere.2020.127199.

6. Mishra, S., Singh, R.P., Rath, C. C., Das, A. P. 2020.Synthetic microfibers: Source, transport and their remediation. Journal of Water Process Engineering 38 (2020) 101612

7. Sujata Mishra, Subhashree Swain, Monalisa Sahoo, Sunanda Mishra & Alok Prasad Das (2021) Microbial Colonization and Degradation of Microplastics in Aquatic Ecosystem: A Review, Geomicrobiology Journal, DOI: 10.1080/01490451.2021.1983670

8. Bhattacharjee, J., Mishra, S. and Das A.P.2021. Recent Advances in Sensor-Based Detection of Toxic Dyes for Bioremediation Application: a Review. 10.1007/s12010-021-03767-7

9. Sunanda Mishra, Debasis Dash, Abdel Rahman Mohammad Said Al-Tawaha, Alok Prasad Das, 2022. A Review on Heavy Metal Ion Adsorption on Synthetic Microfiber Surface in Aquatic Environments, Applied Biochemistry and Biotechnology, https://doi.org/10.1007/s12010-022-04029-w

10. Sunanda Mishra, Debasis Dash, Alok Prasad Das.2022. Detection, characterization and possible biofragmentation of synthetic microfibers released from domestic laundering wastewater as an emerging source of marine pollution. Marine Pollution Bulletin. Volume 185, Part A, December 2022, 114254

11. Pallabi Punyatoya Sahoo, Sikha Singh, Prasanta Kumar Rout, Sunanda Mishra & Alok Prasad Das (2022): Microbial remediation of plastic pollutants generated from discarded and abandoned marine fishing nets, Biotechnology and Genetic Engineering Reviews, DOI: 10.1080/02648725.2022.2152629

12. Mishra, S., Ghosh, S., van Hullebusch, E.D. et al. A Critical Review on the Recovery of Base and Critical Elements from Electronic Waste-Contaminated Streams Using Microbial Biotechnology. Appl Biochem Biotechnol (2023a). https://doi.org/10.1007/s12010-023-04440x

13. Mishra, S., Dash, D., & Das, A. P., (2023b): Aquatic Microbial Diversity on Plastisphere: Colonization and Potential Role in Microplastic Biodegradation, Geomicrobiology Journal, DOI: 10.1080/01490451.2023.2209750

14. Alok Prasad Das, Kasturi Dutta, Rousan Khatun, Ipsita Dipamitra Behera, Shikha Singh, Sunanda Mishra, Microfiber pollution and its microbial mitigation: A review on current trends and future prospects, Journal of the Taiwan Institute of Chemical Engineers, 2023, 105104, ISSN 1876-1070, https://doi.org/10.1016/j.jtice.2023.105104.

15. Mishra, S., Dash, D., & Das, A. P., 2024. Isolation and Molecular Characterization of Polyester-Degrading Bacterial Strains from Municipal Wastewater and Their Application in Microplastic Degradation in Contaminated Wastewater. Geomicrobiology journal.

16. Mishra, S., Dash, D., & Das, A. P., 2024. Microbial degradation of polyester microfibers using indigenously isolated bacterial strain *Exiguobacterium* Sp. CLEAN - Soil, Air, Water.

**Books Chapters Published**

1. Mishra S. Rout, P. K. and Das A.P. Emerging microfiber pollution and its remediation. Microbial biotechnology and Environmental issues/ Remediation. Springer Nature.2020.
2. Mishra, S., Singh, R. P., Rout, P. K. and Das, A. P. Bioreactor (MBR) as an Advanced Wastewater Treatment Technology for Removal of Synthetic Micro plastics. Development In

Wastewater Treatment Research And Processes: Removal of Emerging Contaminants from Wastewater through Bio-nanotechnology. ELSEVIER. 2022, 45-60.

3. Mishra S. and Das A. P. 2021. Current treatment technologies for removal of microplastic and microfiber pollutants from wastewater. Wastewater Treatment- Cutting Edge Molecular Tools, Techniques-elsevier, pp. 237–251.
4. Mishra, S., Das, A.P. (2022). Treatment of the Wastewater Polluted with Synthetic Microfiber Released from Washing Machine. In: Das, B.B., Hettiarachchi, H., Sahu, P.K., Nanda, S. (eds) Recent Developments in Sustainable Infrastructure (ICRDSI-2020)—GEO-TRA-ENV-WRM. Lecture Notes in Civil Engineering, vol 207. Springer, Singapore. https://doi.org/10.1007/978-981-16-7509-6_9
5. Sunanda Mishra and Alok Prasad Das, 2023. Microbial Remediation of Synthetic Microfiber Contaminated Wastewater, M. P. Shah (ed.), Microbial Technologies in Industrial Wastewater Treatment, https://doi.org/10.1007/978-981-99-2435-6_17
6. Jyoti Prava Behera1a, Subhash Chandra Sethi1b, Maheswari Behera2a, Debasis Dash2b*, Sunanda Mishra3a, 2024, Microplastic Pollution: Harmful effects and Possible Bioremediation strategies, Impact of Covid-19 Waste on Environmental Pollution and Its Sustainable Management, Covid-19 Waste and its management, Springer
7. Prateek Ranjan Behera1, Utkal Raj Dash Panigrahi2, Maheswari Behera3, Debasis Dash4, Sunanda Mishra5*, 2024, Understanding SARS-CoV: Severe acute respiratory syndrome coronavirus, as a re-emerging infection. Impact of Covid-19 Waste on Environmental Pollution and Its Sustainable Management, Covid-19 Waste and its management, Springer
8. Sunanda Mishra[1a], Debasis Dash[1b], Alok Prasad Das[2], 2024. Insights into the sources, pathway and synthetic microfibers accumulation in different aquatic ecosystems. “Decarbonization of Wastewater Pollutants as a Sustainable Solution”. Elsevier (Accepted)

**b) Paper presented in Conferences/Seminars**

1. Mishra, S. and Das A.P. How our garments are polluting marine environment and the food chain? National workshop on "Emerging Trends in Life Sciences for Sustainable Development" during 8th and 9th February, 2019, RD Women’s University, Bhubaneswar.

2. Mishra, S. and Das A.P. Synthetic microfleece pollution and its possible solutions for cleaner environment National Conference on Green Technology for Clean Environment, GTCE-2019. Date: 20th May, 2019, SOA University.

3. Mishra S and Das A P. Treatment of the wastewater polluted with synthetic microfiber released from washing machine. ICRDSI 2020. Kalinga Institute of Industrial Technology (KIIT)

4. Sunanda Mishra, Debasis Dash, Alok Prasad Das. Synthetic Microfiber Pollution: An imperceptible threat to our environment. National Seminar on Sustainable Development With Women Empowerment. ISCA BBSR Chapter, March 2-3,2022

5. Sunanda Mishra, Debasis Dash, Alok Prasad Das, Synthetic Microfiber pollution in aquatic environments and its management, International Conference on Recent Trends in Biotechnology 2022 (ICRTB), Department of Biotechnology, School of Engineering and Technology, Centurion University of Technology & Management [CUTM], 22nd and 23rd JUNE, 2022.

6. Sunanda Mishra, Debasis Dash, Alok Prasad Das, Molecular identification of polymer degrading bacteria from Dharmasala canal of Sukinda mining area and their application in synthetic microfiber degradation. International Conference on Bioprocess for Sustainable Environment and Energy. ICBSEE-INDIA-2022, 20 - 24th June, NIT Rourkela, Odisha.

7. Sunanda Mishra, Debasis Dash, Alok Prasad Das, Role of synthetic textile garments in marine microfiber pollution. 2nd International Symposium on Marine Science and Technology for Young Scientists and Postgraduates, Hong Kong Branch of the Southern Marine Science and Engineering Guangdong Laboratory (Guangzhou).13$^{th}$ July,2022.

8. Sunanda Mishra1*, Debasis Dash$^{2}$, Alok Prasad Das$^{3}$, Impact of Covid -19 pandemic on Environmental Microplastic Pollution, International Conference Disaster Management: Global Pandemic and Its Impact Binghamton University, NY, USA, Jan. 25-27, 2023

9. Sunanda Mishra1*, Debasis Dash 2, Alok Prasad Das, Role of Disposable Face Masks (DFMs) on Environmental Microplastic Pollution National conference on "Science & Technology for Sustainable World" ISCA Bhubaneswar chapter, March 14-15, 2023 at KIIT-DU

10. Sunanda Mishra, Effect of synthetic microfiber pollution and its possible remediation strategies, International Webinar on Microplastic Pollution: Adversities and Remediation Strategies organized by the Department of Life Sciences, Rama Devi Women's University held on 27th and 28th April 2023.

11. Sunanda Mishra1*, Debasis Dash 2, Alok Prasad Das 3, MICROBIAL REMEDIATION OF SYNTHETIC MICROFIBER FLEECE USING INDIGENOUSLY ISOLATED EXIGUOBACTERIUM SP. 3$^{rd}$ International Conference on Frontiers in Biological Sciences, October 5-7, 2023 at NIT Rourkela Campus, Odisha, India.

**d) Training /Workshop attended:**

1. Online training program under "NATIONAL INTELLECTUAL PROPERTY AWARENESS MISSION", Govt. of India on April 07, 2022

2. Workshop on "Ethics in Research and Publications" organized by IPR cell and Department of Life sciences, Rama Devi Women's University, Bhubaneswar, Odisha, 24th – 26th July, 2024.

**e) Co Curricular Activities**

1. Das, A.P., Mishra, S. (eds) Impact of COVID-19 Waste on Environmental Pollution and Its Sustainable Management. Book Series: Covid-19 waste and its management Environmental Science and Engineering. Springer, Cham. https://doi.org/10.1007/978-3-031-50840-0_1., Springer
2. Currently editing a book "Decarbonization of Wastewater Pollutants as a Sustainable and circular approach". book series 'Development in wastewater treatment research and processes' Elsevier

**e- Lecture videos for UG and PG students are available online on YouTube:**

**Channel link:**

**https://youtube.com/@sunandatutorial8970?si=grjVWRyB4-ZGTONL**

**UG**

1. "Ecology"Playlist: https://youtube.com/playlist?list=PLCxYPCjMqHF3lR2T4fwvhf8NUttEQVLBl&si=G7HL08F7bQhyUhln
2. "Lipid metabolism"Playlist https://youtube.com/playlist?list=PLCxYPCjMqHF3i9rYoDJjbg-If7bxivc6F&si=cRcjizu5r42VVAnS
3. Plant anatomy Playlist https://youtube.com/playlist?list=PLCxYPCjMqHF1mBuz6H57YZlWLknbyTT3y&si=e0fuKfuLa8gDOt2P

PG

1. Cytoskeleton: https://youtu.be/vpSxoYClMgA?si=ZU1b9WGC-XLlU6l_
2. Motor protein: https://youtu.be/gu0xE8EW4G8?si=q2DnCE8mR_2mY8gC
3. Cell cycle and check points: https://youtu.be/DMWMTO4FhnI?si=HsGBAR4vu-AzyD1
4. Bioming https://youtu.be/-GmcKe7lSLU?si=6MH2lZBTMZaXsQPK
5. Wetland ecosystem : https://youtu.be/iYhrtMcdQIc?si=e35i9_eYjmWhyBXG