

UNIVERSITY OF CALCUTTA

FACULTY ACADEMIC PROFILE/ CV



1. **Full name of the faculty member:** DIPA BISWAS

2. **Designation:** Professor

3. **Specialization:** Petrochemicals & Petroleum Refinery Engg.

4. **Contact information :**

Department of Chemical Technology, University Of Calcutta, 92 A.P.C. Road, Kolkata – 700009;

E-Mail: dipa.b@yahoo.com

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5. **Academic qualifications:**

College/ university from which the degree was obtained	Abbreviation of the degree
University of Calcutta	B.Sc. (Chem. Hons.)
University of Calcutta	B. Tech. in Chemical Technology
University of Calcutta	M. Tech. in Petrochemicals & Petroleum Refinery Engg.
University of Calcutta	Ph.D.(Tech.)

6. **Positions held/ holding:** Professor

7. **Research interests:**

- Petroleum Refinery Engg.
- Petrochemicals
- Catalysis
- Bioremediation
- Biosurfactant

8. **Research guidance:**

Number of researchers awarded Ph.D degrees: 8

Number of researchers pursuing Ph.D : 4

9. **Select list of publications:**

a) **Journals:**

1. Studies on degradation of diesel and other petroleum fractions by *Acinetobacter junii*, CTA₃. ***Biosciences Biotechnology Research Asia***. 2009, 6, 169 - 174.
2. Biosurfactant Production from n-Paraffins by an Air Isolate *Pseudomonas aeruginosa* OCD₁. ***Journal of Oleo Science***. 2010, 59, 601- 605.

3. Sahoo S., Datta S., Biswas D. Optimization of Culture Conditions for Biosurfactant Production from *Pseudomonas aeruginosa* OCD₁. *Journal of Advanced Scientific Research*. 2011, 2, 32 - 36.
4. Study of the Potential of Two Isolated Microorganisms to Degrade Various Petroleum Fractions. *Biosciences Biotechnology Research Asia*. 2011, 8, 813 - 816.
5. Biotreatment of diesel and evaluation of its physico-chemical properties. *Journal of Indian Chemical Society*. 2012, 89, 823 - 825.
6. Biolubricant synthesis from waste cooking oil via enzymatic hydrolysis followed by chemical esterification. *Journal of Chemical Technology and Biotechnology*. 2013, 88, 139-144.
7. Synthesis of Biolubricant components from waste cooking oil using a biocatalytic route . *Journal of Environmental Progress And Sustainable Energy*. 2014, 33, 933-940.
8. Optimization of the production parameters of octyl ester biolubricant using Taguchi's design method and physic-chemical characterization of the product. *Industrial Crops & Products*. 2014, 52,783-789.
9. Correlation between Oil Substrate & Biosurfactant activity using *Acinetobacter Junii* & *Pseudomonas aeruginosa*. *Journal of Indian Chemical Society*. 2014, 91, 497-502.
10. Enhancement of waste engine oil biodegradation by optimization of media using factorial design study. *Indian Journal of Biotechnology*. 2014, 13, 293-300.
11. Utilization of waste engine oil by *Ochrobactrum Pseudintermedium* strain C1 that secretes an expolysaccharide as a bioemulsifier. *Biocatalysis and Agricultural Biotechnology*. 2014, 3, 167-176.
12. Waste Lubricating Oil Removal in a batch Reactor by mixed bacterial consortium – a kinetic study. *Bioprocess and Biosystems Engineering*. 2015, 38, 2095-2106.
13. Biodegradation of waste lubricants by a newly isolated *Ochrobactrum Pseudintermedium* sp. C1. *3 Biotech*. 2015, 5, 807-817.
14. RSM study for the production of rhamnolipid using *Catla catla* fish fat, *International Journal of current Microbiology and Applied Sciences*, 2015,3, 169-178
15. Towards the development of an effective in vivo wound healing agent from *Bacillus* sp. derived biosurfactant using *Catla catla* fish fat, *RSC Advance*, 2017,7 13668-13677
16. Production kinetics of Rhamnolipid using fish fat : A step towards environmental hazard control of sewage, *Environmental Technology & Innovation*, 2017,8,299-308
17. Assessment of synergistic antibacterial activity of combined biosurfactants revealed by bacterial cell envelop damage, *BBA – Biomembranes*, 2018,1860,579-585
18. Towards a better production of bacterial exopolysaccharides by controlling genetic as well as physico-chemical parameters, *Applied Microbiology & Biotechnology*, 2018,102, 1587-1598
19. Synthesis and characterization of a sol-gel derived zeolite prototype as a prospective hydrocracking catalyst *International Ceramic Review*, 2018,05.28-32
20. Excision wound healing activity of a common biosurfactant produced by *Pseudomonas* sp. *Wound Medicine*, 2018, 23,47-52
21. Exploring two contrasting surface-active exopolysaccharides from a single strain of *Ochrobactrum* utilizing different hydrocarbon substrates *Journal of Basic Microbiology*, 2019

22. Surfactant exopolysaccharide of *Ochrobactrum pseudintermedium* C1 has antibacterial potential : It's bio-medical applications in vitro **Microbiological research** , 2020
 23. Prospective bioremediation of toxic heavy metals in water by surfactant exopolysaccharide of *Ochrobactrum pseudintermedium* using cost-effective substrate **International Microbiology** , 2021
 24. A comparative study on chemical characterization and properties of surface active compounds from Gram-positive *Bacillus* and Gram-negative *Ochrobactrum* strains utilizing pure hydrocarbons and waste mineral lubricating oils **World Journal of Microbiology & Biotechnology** , 2022, 38:141
 25. Model development, Simulation and parameter estimation for pervaporative separation of benzene from model pyrolysis gasoline using insitu(nano) silver/polyvinyl alcohol membrane, **Chemical Engineering communication**, Dec 2022
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b) **Books/ book chapters :**

- “Petrochemical Industries : Technology & Processes” – **CBS Publishers & Distributors Pvt. Ltd.**, New Delhi; 2010, 1-196, ISBN: 9788123918808.
- “Green techniques in Gas Chromatography” – **Green Chromatographic Techniques: Separation & Purification of Organic & Inorganic Analytes ;** Springer, Chapter 5, 2013, 103-121.

c) **Conference/ seminar volumes:**

- “Study to Evaluate the Effect of Microorganism on Physicochemical Properties of Various Petroleum Fractions”- “CHEMCON 2007”.
- “Enhancement of waste engine oil biodegradation by optimization of media using factorial design study”- International conference on “Advances in Biotechnology & Bioinformatics 2013”
- “Towards Efficient PCB waste management by biodegradation of waste transformer oil”- “National Conference on Environment : Pollution & Protection “, 2014,
- “Growth Kinetic models for crude oil biodegradation by mixed culture in a batch scale bioreactor”-“ SCHEMCON 2014”

10. **Membership of Learned Societies:**

- Institute of Engineers (India).
- Indian Institute of Chemical Engineers,
- Indian Chemical Society,
- Catalysis Society of India,
- Indian Science Congress Association,
- Indian Society for Technical Education

