ShritamaMukherjee

Ph.D. in Polymer Science & Technology

Address
Befälsgatan 12, Lgh 1003
Linköping,
Sweden-587 50

Tel & Skype
+91 747-885 93 03

Shritama_m

Mail
Shritama.Mukherjee@gmail.com
Shritama.visitor@iitd.ac.in

Computational
MacOS ★★★★★
Windows ★★★★★
MS Office ★★★★★
Origin 8 ★★★★★

Instruments
FTIR-ATR
ThermoCycler®
XRD
SEM
AFM
Tensile tester
Compression moulding
Fluorescence Microscope
Microscope
Gel Electrophoresis

Experience

Sept,2021 - **Postdoctoral Fellow** Indian Institute of Technology, Delhi
New Delhi, India

2012 - 2016 **Senior Research Fellow, Council of Scientific & Industrial Research, Govt. of India** Calcutta University, West Bengal, India
Part of PhD program

2009 - 2010 **Project Trainee** Bose Institute, Kolkata
Part of MTech program.

2007 **Summer Project Trainee** NICED, Kolkata
The study of Reorganization of Cytoskeleton in response to E. coli heat stable enterotoxin (STa) in Rat epithelial cells

2006 **Project Trainee** Mother Dairy, West Bengal
Different techniques involve in Quality control lab of a dairy factory

Education

2012 - 2017 **PhD (Tech) Polymer Science & Technology** University of Calcutta, Kolkata, India
Biodegradation of Polyethylene.
Keywords: Oxidation, Biodegradation, Surfactant, Enzyme assay, Microbiology
Title of the Thesis: Microbial Biodegradation of Polyethylene
Supervisors: Prof. Patit P Kundu, Calcutta University, India.
Prof. Uttam Roy Chaudhuri, Calcutta University, India

2008 - 2010 **Master of Technology in Biotechnology** West Bengal University of Technology, India
Main subject: Biotechnology.
Title of the Thesis: Production of alcohol from potato starch by genetically modified Saccharomyces cerevisiae.
Supervisors: Prof. Pratima Sinha, Bose Institute, India
Prof. Nandan Bhattacharyya, Haldia Institute of Technology, India

2004 - 2008 **Bachelor of Technology in Biotechnology** West Bengal University of Technology, Kolkata, India
Main subjects: Biotechnology.
Project 1: The study of Reorganization of Cytoskeleton in response to E. coli heat stable enterotoxin (STa) in Rat epithelial cells.
Project 2: Different techniques involve in Quality control lab of a dairy factory
Supervisor: Dr. Manoj Kr Chakrabarti, NICED, India

Personal Skills

Interests

History
Reading
Photography
Travel
Hiking

Languages

English ★★★★★
Hindi ★★★★★
Bengali ★★★★★
Swedish ★★★★★

Publications

2018 **Nandy A, Jana S, Khamrai M, Kumar V, Mukherjee S, Bhattacharyya A, Kundu PP** IF: 1.302; Citations: 5
Cloning and expression of α-amylase in E. coli: genesis of a superior biocatalyst for substrate-specific MFC.
Int J Green Energy, 16(4), 309-316.
https://doi.org/10.1080/15435075.2019.1566135

2017 **Mukherjee S, Roy Chaudhuri U, Kundu PP** IF: 2.750; Citations: 6
Bio-degradation of polyethylene via complete solubilization by the action of Pseudomonas fluorescens, biosurfactant produced by Bacillus licheniformis and anionic surfactant.
J Chem Technol Biotechnol, 93:1300-1311.
https://doi:10.1002/jctb.5489

2017 **Mukherjee S, Roy Chaudhuri U, Kundu PP** IF: 4.074; Citations: 6
Anionic surfactant induced oxidation of low-density polyethylene followed by its microbial degradation.
Int Biodeterior Biodegradation,117:255-268.
https://doi: 10.1016/j.ibiod.2017.01.013

2016 **Mukherjee S, Roy Chaudhuri U, Kundu PP** IF: 3.119 ; Citations: 19
Bio-degradation of polyethylene waste by simultaneous use of two bacteria: Bacillus licheniformis for production of bio-surfactant and Lysinibacillus fusiformis for biodegradation.
RSC Advances; 6:2982-2992.
https://doi: 10.1039/c5ra25128a

2015 **Mukherjee S, Roy Chaudhuri U, Kundu PP** IF: 3.119; Citations: 3
Biotic oxidation of polyethylene using a bio-surfactant produced by B. licheniformis: a novel technique.
RSC Advances; 75089-75097.
https://doi: 10.1039/c5ra13549d

2014 **Mukherjee S, Roy Chaudhuri U, Kundu PP** IF: 2.520; Citations: 10
Alkaline fungal degradation of oxidized polyethylene in black liquor: Studies on the effect of Lignin peroxidases and Manganese peroxidases.
J. Appl. Polym. Sci.; 131(17), 40738.
https://doi: 10.1002/app.40738

2014 **Pramanik N, Mukherjee K, Nandy A, Mukherjee S, Kundu PP** IF: 2.520; Citations: 11
Comparative analysis of different properties of polyhydroxyalkanoates isolated from two different bacterial strains: Alkaliphilus oremlandii OhILAs and recombinant Escherichia coli XL1B.
J Appl Polym Sci, 131, 41080.
https://doi: 10.1002/app.41080

Professional community

ORCID Connecting Research and Researchers

publons

Research Interests

Biomaterial synthesis
Renewable polymer
Environmental Microbiology
Wate management
Bioremediation

Technical Skills

Microbiology

- Liquid and solid cultures of bacteria and fungus (wood decay fungus, yeast), isolation, purification, transformation
- Isolation of two enzymes from wood decay fungi and further enzyme assay
- **Microscopy:** confocal, fluorescence and light microscopy
- Mix culture fermentation and distillation of alcohol
- Characterization of intracellular and extracellular microbial metabolites
- Wastewater treatment by white rod fungus
- Bio-surfactant production

Molecular Biology

- **Vector design:** primers design, digestions, ligations, cloning.
- **Cloning:** Genomic DNA isolation and purification, PCR, treatment with restriction enzymes, PCR product purification, ligations, transformation, DNA gel analysis, DNA sequencing.
- Cell-free enzymatic reaction

Biochemistry

- SDS PAGE
- Thin layer chromatography
- HPLC
- enzymatic assay

Polymer Chemistry

- **Polymer Characterization:** FTIR, XRD, SEM, AFM, tensile tester, GC-MS, HPLC, freeze dryer
- Surface tension measurements and handling of surfactant.
- **Separation:** Separation of lignin from black liquor and subsequent drying. Precipitation of bio-surfactant from bacterial culture by acid precipitation method.
- Natural and thermal aging of polyethylene with or without anionic surfactant.
- **Degradation:** Polyethylene and lignin.
- Starch polymer composite.
- Texttile dye adsorption.

Analytical Chemistry

- Titrations, spectrophotometry, chromatography (thin layer, ion exchange, HPLC), sound practical and theoretical knowledge and interpretations of most analysis techniques (NMR, MS, etc.).

Poster Presentation

2014 **October 27th to 30th** IIT Delhi, New Delhi, India
International Conference on Polymeric Biomaterials, Bioengineering and Bio diagnostics

Conference attended

2012 **Frontiers in modern biology (FIMB 2012)** Indian Institute of Science Education and Research Kolkata, India

2014 **International conference RAPT** University of Calcutta, Kolkata

Referees

Referee 1 **Prof. P P Kundu,**
Professor
Department of Chemical Engineering
Indian Institute of Technology, Roorkee, India
Email: **PPKundu**@iitr.ac.in
Phone: +91 (0)725 1040 403

Referee 2 **Prof. Uttam Raychoudhuri,**
Professor
Department of Chemical Technology,
Calcutta University, West Bengal,India
Email: **UttamRoyChaudhuri**@jyahoo.in

Referee 3 **Prof. Abhijit Bandyopadhyay,**
Professor
Department of Polymer Science & Technology,
Calcutta University, West Bengal,India
Email: **AbhijitBandyopadhyay**@yahoo.co.in