Dr. Nupur Ojha (Ph.D.)

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EDUCATIONAL QUALIFICATIONS

Doctorate of Philosophy {Environmental Microbiology) — ***Awarded:* 8th April, 2022**
Vellore Institute of Technology (**VIT**), Vellore, Tamil Nadu, India — **10/10 CGPA**

Post-graduation (M.Sc. in Applied Microbiology) — **2015**
Vellore Institute of Technology (**VIT**), Vellore, Tamil Nadu, India — **8.88/10 CGPA**
MSc. IAS Summer Fellow *(Growth promoting bacteria),* **IIT Varanasi, India**
MSc. Dissertation (*Fungal degradation of Plastic wastes),* **IISER-Kolkata, India**

Graduation (B.Sc. in Microbiology, Chemistry & Zoology) — **2013**
Dayananda Sagar Institution, Bangalore University, Bangalore, Karnataka, India — **80.09 %**

RESEARCH INTERESTS

- ***Turning Wastes to Biodegradable Plastics:*** *Bioproduction of Polyhydroxyalkanoates & its Copolymers using agro-industrial and animal wastes; extraction, purification, characterization and application of PHAs.*
- ***Biovalorization of Plastic & Lignin wastes into Valuable platform biochemicals:*** *Lipids, fatty acids, biopolymers.*
- ***Bionanocomposites Fabrication & Processing:*** *Antibacterial Bionanocomposite packaging films, Biocompatible Scaffolds, Wound healing patches, Biopolyesteric Nanocarriers for controlled drug delivery applications.*
- ***Bioremediation, Nano-bioremediation & Phytoremediation:*** *Yeast consortium for Nano-bioremediation of Polyaromatic hydrocarbons, Fungal degradation of Plastics (HDPE & LDPE); Yeast mediated remediation of Polyaromatic hydrocarbons, Heavymetals, Microplastics, Dye, & Desalination, Microbial fuel-cells, Plant flocculants for dye removal, wastewater, textile & grey water treatment: Plant Mucilage (Aloe-vera, Okra), flocculent Grafting.*
- ***Wastewater, Textile & Grey water treatment:*** *Mesophilic bacterial consortia with Cyanobacteria for waste water treatment, Mixotrophic cultures, Bioflocculation, Bio-surfactants, Nanobiocomposites.*
- ***Bio-nanoparticles:*** *Biological synthesis of metal nanoparticles, nano-biopolyesters, Exopolysaccharides, Biosurfactants, Bioactive compounds, from Plants extract, Herbal leaf extracts, Yeast/fugal extract and plant mucilage.*
- ***Biocementation & Biofertilizers:*** *Microbially Induced Calcite Precipitation, Ureolytic yeasts, Crack healing application, Biofertilizers from floral wastes.*
- ***Microbial techniques: Microbial culture Isolation*** *(Serial Dilution, Plating methods,* ***Screening and identification*** *(Staining methods)****, Morphological analysis*** *(DNA/RNA Extraction, Sequencing, Blast, Phylogenetic tree),* ***MPN, Biochemical Tests****,* ***Media Optimization*** *(RSM, BBD & CCD),* ***Consortia development****,* ***Biocompatibility*** *(Cell culture studies, MTT assay) &* ***toxicological studies*** *(Micro-plating, Fish & Qualitative Bioassays).*
- ***Analytical techniques:*** *Extraction, purification & characterization of Bio macromolecules, biopolymers, Phycobilin proteins purification, lipids using Physio-chemical (HP-LC, GC-MS, NMR, FTIR, XRD, EDX, SEM, TEM, AFM), Thermal (TGA, DSC) &* ***Mechanical testings*** *(UTS, Tensile strength, Impact strength, Young's modulus), purification (TLC & other chromatography techniques),* ***Biodegradation assay*** *(FTIR, SEM).*

PUBLICATIONS

Ph.D. Thesis Work

1. **Ojha, N.** and Das, N., **2018**. A statistical approach to optimize the production of polyhydroxyalkanoates from *Wickerhamomyces anomalus* VIT-NN01 using response surface methodology. ***International Journal of Biological Macromolecules***, *107*, pp.2157-2170. **(IF: 7.7, Elsevier, Q1)**
2. **Ojha, N.** and Das, N., **2020**. Process optimization and characterization of polyhydroxyalkanoate copolymers produced by marine *Pichia kudriavzevii* VIT-NN02 using banana peels and chicken feather hydrolysate. ***Biocatalysis and Agricultural Biotechnology***, *27*, p.101616. **(IF:3.4, Elsevier, Q1)**
3. **Ojha, N.** and Das, N., **2021**. Green formulation of microbial biopolyesteric nanocarriers toward *in vitro* drug delivery and its characterization. ***Current Microbiology***, *78*(5), pp.2061-2070. **(IF: 2.3, Springer, Q3)**
4. **Ojha, N.** and Das, N., **2020**. Fabrication and characterization of biodegradable PHBV/SiO_2 nanocomposite for thermo-mechanical and antibacterial applications in food packaging. ***IET Nanobiotechnology***,*14*(9),785-795.**(IF: 3.8, Wiley, Q3)**
5. **Ojha, N**. and Das, N., **2020**. Effects of various stress conditions to enhance polyhydroxyalkanoates accumulation in *Wickerhamomyces anomalus* VIT-NN01. *Current Biotechnology*, *9*(2), pp.143-157. **(Bentham Science)**
6. **Ojha, N.** and Das, N., **2017**. Optimization and characterization of polyhydroxyalkanoates and its copolymers synthesized by isolated yeasts. *Research Journal of Pharmacy and Technology*, *10*(3), pp.861-868. **(Q3)**
7. **Ojha, N.** and Das, N., **2020**. Formulation and Characterization of Polyhydroxyalkanoates Copolymer Nanoparticles for Controlled Drug Release. *International Journal of Nanobiotechnology*, *6*(2), pp.1-11.

M.Sc. Dissertation work

8. **Ojha, N**., Pradhan, N., Singh, S., Barla, A., Shrivastava, A., Khatua, P., Rai, V. & Bose, S., **2017**. Evaluation of HDPE & LDPE degradation by fungus, implemented by statistical optimization. ***Scientific Reports***, *7*(1), 1-13.
(IF: 4.99, Nature Publishing group, Q1)

Collaborative research work

Research articles

9. Sarkar, S.R., Majumdar, A., Barla, A., Pradhan, N., Singh, S., **Ojha, N**. and Bose, S., **2017**. A conjugative study of *Typha latifolia* for expunge of phyto-available heavy metals in fly ash ameliorated soil. ***Geoderma***, *305*,354-362. **(IF:6.114, Q1)**

10. Mandal, S.K., **Ojha, N.** and Das, N., **2018**. Optimization of process parameters for the yeast mediated degradation of benzo [a] pyrene in presence of ZnO nanoparticles and produced biosurfactant using 3-level Box-Behnken design. ***Ecological Engineering***, *120*, pp.497-503. **(IF: 3.9) (Elsevier, Q1)**

11. **Ojha, N**., Mandal, S.K. and Das, N., **2019**. Enhanced degradation of indeno (1, 2, 3-cd) pyrene using *Candida tropicalis* NN4 in presence of iron nanoparticles and produced biosurfactant: A statistical approach.***3 Biotech***,*9*(3),1-13.**(IF:2.6, Q2)**

12. Ashwini Prabhakar, S., **Ojha, N**. and Das, N., **2020**. Application of Aloe vera mucilage as bioflocculant for the treatment of textile wastewater: process optimization. ***Water Science and Technology***, *82*(11), pp.2446-2459. **(IF: 2.43) (Q2)**

13. **Ojha, N**., Aich, P. and Das, N., **2021**. Process Optimization of Microbially Induced Calcite Precipitation by Ureolytic Yeast *Spathospora* sp. NN04 using Box-Behnken Design: A Novel Approach towards Biocementation. ***Journal of Applied Biotechnology Reports***, *8*(3), pp.303-311. (**IF: 1.2224) (Q3)**

14. Mandal, S.K., **Ojha, N.** and Das, N., **2018**. Process optimization of benzo [ghi] perylene biodegradation by yeast consortium in presence of ZnO nanoparticles and produced biosurfactant using Box-Behnken design. ***Frontiers in Biology***, *13*(6), pp.418-424. **(IF: 0.938) (Q4)**

15. **Ojha, N**., Mandal, S.K., Aich, P., Guru, A. and Das, N., **2019**. Process optimization on degradation of phenanthrene by *Candida tropicalis* NN4 using response surface methodology: Green chemistry approach. ***Research Journal of Biotechnology***, *14(10)*, pp.10-22. (**IF: 0.454) (Q4)**

16. Daphne, J., Francis, A., Mohanty, R., **Ojha, N**. and Das, N., **2018**. Green synthesis of antibacterial silver nanoparticles using yeast isolates and its characterization. ***Research Journal of Pharmacy and Technology***, *11*(1), pp.83-92. **(Q3)**

17. Mandal, S.K., **Ojha, N.** and Das, N., **2019**. Role of yeast consortium for the remediation of perylene from aqueous environment: process optimization. ***The Journal of Microbiology, Biotechnology and Food Sciences***, *9*(1), p.132.

18. Kumar, A.V., Raj, A., Lakshmi, A., **Ojha, N.** and Das, N., **2019**. A green approach towards utilization of floral wastes for the extraction of Natural Colorants. ***Research Journal of Pharmacy and Technology***, *12*(1), pp.269-279. **(Q3)**

19. Singh, S., Pradhan, N., **Ojha, N**., Roy, B., Bose, S., **2016**. Grey water treatment and its application in cultivation of plants. ***Asian Journal of Microbiology, Biotechnology & Environmental Science***, *18*(4), pp.1043-1053.

20. Peerzada, J., Sinclair, B.J., Perinbarajan, G.K., **Ojha, N**. and Mossa, A.T., **2023**. Silica-Annona Muricata Nano-Hybrid: Synthesis and anticancer activity against Breast Cancer. *Heliyon*. Available at SSRN 4468438. **(IF: 3.4, Elsevier Q1)**

Review articles

21. Peerzada, J.G., **Ojha, N**., Jaabir, M.M., Lakshmi, B., Hannah, S., Chidambaram, R., Sinclair, B.J., Krishna, G., Muthuramalingam, P. and Mossa, A.T., **2023**. Advancements in eco-friendly food packaging through nanocomposites: a review. *Polymer Bulletin*, pp.1-40. **(IF: 3.2) (Q2)**

22. Pradhan, N., Singh, S., **Ojha, N**., Shrivastava, A., Barla, A., Rai, V. and Bose, S., 2015. Facets of nanotechnology as seen in food processing, packaging, and preservation industry, ***BioMed Research International***, 2015. **(IF: 3.246) (Q2)**

23. Das, N., **Ojha, N.** and Mandal, S.K., **2021**. Wastewater treatment using plant-derived bioflocculants: green chemistry approach for safe environment. ***Water Science and Technology***, *83*(8), pp.1797-1812. **(IF: 2.43)** (**Q2**)

24. Das, N., Shende, A.P., Mandal, S.K. and **Ojha, N**., **2022**. Biologia Futura: treatment of wastewater and water using tannin-based coagulants. ***Biologia Futura***, *73(11)*, pp.1-11. **(IF: 1.11) (Q2)**

25. Basu, S., Bose, C., **Ojha, N**., Das, N., Das, J., Pal, M. and Khurana, S., **2015**. Evolution of bacterial and fungal growth media. *Bioinformation*, *11*(4), p.182.

26. Jeelani, P.G., Munawar, S.M., Basha, S.K., Sinclair, B.J., Jenifer, A.D., **Ojha, N**., Mossa, A.T. and Chidambaram, R., **2023**. Exploring Possible Strategies for Treating SARS-CoV-2 in Sewage Wastewater: A Review of Current Research and Future Directions. *Hygiene and Environmental Health Advances*, p.100056.

27. Jeelani, P.G., Sinclair, B.J., Perinbarajan, G.K., Ganesan, H., **Ojha, N**., Ramalingam, C., Muthuramalingam, P. and Mossa, A.T., **2023**. The therapeutic potential of chia seeds as medicinal food: a review. *Nutrire*, *48*(2), p.39.

Book chapters

28. **Ojha, N.** and Das, N., **2021**. Microbial Production of Bioplastics: Current Trends and Future Perspectives. *Bioplastics for Sustainable Development*, pp.1-60., **Springer**.

29. Majumdar, A., Pradhan, N., Sadasivan, J., Acharya, A., **Ojha, N**., Babu, S. and Bose, S., 2018. Food degradation and foodborne diseases: A microbial approach. In *Microbial contamination and food degradation* (109-148), **Elsevier**.

AWARDS & FELLOWSHIPS

- **Senior Research Fellowship-Direct (SRF-Direct) award 2019-2022,** from the **Human Resource Development (HRD) Group of Council of Scientific and Industrial Research** (**CSIR**), New Delhi, India.
- **Indian Academic of Science summer Fellowship** at Indian Institute of Technology (Banaras Hindu University, BHU), Varanasi, conducted by Indian Academy of Sciences, Bangalore, The Indian National Science Academy, New Delhi, and The National Academy of Sciences, Allahabad, India Science Academics (June 2014 to August 2014).
- Certified by ***Certificate of Excellence*** in BSc. 1st semester for securing *first position* in Dayananda Sagar College of Biological Sciences in Bangalore University examinations 2010.
- **Research Award** in the year **2017-2021** from **Vellore Institute of Technology (VIT) Vellore,** for contribution to research through peer reviewed journal publications.

WORK EXPERIENCES

Indian Institute of Technology (IIT) Madras **Chennai, India**
Institute Post-Doctoral Fellow (IPDF) **(May 2023-May 2024)**

- Bacterial valorization of Lignin wastes and Polyethylene terephthalic acid (PET) plastic wastes into valuable products for industrial applications
- Co-Mentoring B.Tech/M.Tech./PhD. Students for conceptualizing, analyzing & writing their research proposals
- Handing HPLC instrumentation & other lab instrumentation

P.D. Patel Institute of Applied Sciences, CHARUSAT **Gujarat, India**
***Research Associate* in GSBTM-DST Biorefinery Project** **(January 2023 – April 2023)**

- Wastewater to biofuel and bioproducts: Cyanobacterial biorefinery through a green circular bio-economy
- Collaborating, updating, planning, conceptualizing and presenting the details and workflow of the project with all the Principal Investigators in online & in person mode
- Motivating & guiding the research scholars in developing skills, writing thesis & manuscripts
- Actively participating workshops & teaching the same to the juniors as per the requirement of the project

Vellore Institute of Technology Vellore **Tamil Nadu, India**
Senior Research Fellow (CSIR) **(April 2019-March 2022)**

- Mentored & guided many Under-graduate (5) & Post-graduate (3) students in conceptualizing, planning, analysing, data interpretation, writing, reviewing and publishing their research works in Thomas Recruiters, Science Citation Index Journals.
- Collaborative works with seniors and juniors, writing book chapters, review articles & research papers in SCI journals
- Parallel project handling, chemicals & instruments required for project, Industrial visit, Conferences volunteering

Vellore Institute of Technology Vellore **Tamil Nadu, India**
Teaching cum Research Assistant (TRA) **(October 2016-March 2019)**

- Worked with professors to revise laboratory syllabus, create midterm & final exams. Evaluated assignments and guided students in practical classes of Food microbiology, Cell Biology, Biostatistics, General Microbiology and Microbial fermentation technology subjects.
- Assigned in control of final examination duties as an examiner & examination evaluator. Laboratory teaching and practical duties for post-graduate and under-graduate students.

RESEARCH EXPERIENCES

Indian Institute of Technology (IIT) Madras **Chennai, India**
Institute Post-Doctoral Fellow (IPDF) **(May 2023-May 2024)**

- Bacterial valorization of Lignin wastes into valuable products; Isolation, Screening & identification of Plastic hydrolysates (Terephthalic acid & Ethylene glycol) consuming bacterial isolates; Production, Extraction & characterization of biochemicals & biopolymers using plastic hydrolysates from bacteria, Biosynthesis of palladium nanoparticles (PdNPs) and fabrication of PHA/Pd nanocomposites for Biomedical applications

P.D. Patel Institute of Applied Sciences, CHARUSAT **Gujarat, India**
***Research Associate* in GSBTM-DST Biorefinery Project** **(January 2023 – April 2023)**

- Wastewater treatment; Cyanobacteria; Consortia development; Biofuel; Protein purification; Lipid extraction, estimation, profiling

Vellore Institute of Technology Vellore **Tamil Nadu, India**
Ph.D. Research Scholar *under supervision of* ***Dr. Nilanjana Das (World's 2% Scientist)*** **(July 2016-April 2022)**

***Ph.D. Thesis:* Yeast as a potential producer of PHAs & its copolymers: A novel approach for the production of Bioplastics**

- **Biowastes conversion into cost effective production media & Microbial fermentation technologies**
  - Conversion of agro-industrial wastes into biowastes based production medium
  - Optimization of growth parameters using Box Behnken Design & Central Composite Design
- **Microbial Intracellular plastics production by yeasts, designing strategies to enhance production**
  - Biosynthesis of Polyhydroxyalkanoates (PHAs) from yeast
  - Process optimization of growth parameters
  - Cost effective production media using agro-biowastes (Sugarcane Molasses, Banana peels, Chicken feathers)
  - Effect of stress conditions (UV, mutagens, sound waves, MFI, LEC) to enhance PHA production
- **Fabrication of Bionanocomposites & Nanocarriers**
  - Biogenic synthesis of SiO_2 NPs from groundnut shells; Green synthesis of Palladium NPs using Tulsi leaf extract
  - Fabrication of PHBV/SiO_2 & PHBV/Pd bionanocomposite films for antibacterial food packaging applications
  - Biodegradation, biocompatibility, thermo-mechanical, physiochemical & antimicrobial studies of bionanocomposites
  - Formulation of PHBV nanoparticles as Nanocarriers for *in vitro* controlled drug release for biomedical applications

Collaborative research works

- **Conversion of Agro-rural biowastes into Biofertilizers & Bio products**
  - Extraction of cellulose, starch, hemicellulose, lignin, pectin from agro wastes for bioplastic production
  - Extraction of natural colorants from Floral wastes
  - Application of agro-biowastes as biofertilizers
- **Biodegradation of Plastics, Pollutants & Heavy metals using Fungi, Yeast consortia, Bacteria & Plants**
  - Biodegradation of Low density polyethylene & High density polyethylene using fungal strains
  - Biodegradation of perylene, phenanthrene etc. using yeast and yeast consortium
  - Degradation of Polyaromatic hydrocarbons using Biosurfactant producing yeasts
  - Phytoremediation of heavy metals
- **Green nanoparticle synthesis & its applications**
  - Biosynthesis of Silver nanoparticles using yeast
  - Biosynthesis of Palladium nanoparticles using marine fungal culture
  - Biogenic synthesis of Zinc, Iron, Copper, and Palladium nanoparticles using leaf extracts
  - Incorporation of nanoparticles for enhance degradation of Indeno (1, 2, 3-cd) pyrene) & benzo [a] pyrene)
- **Plant based Bioflocculation**
  - *Aloe vera* mucilage as green flocculants for textile wastewater treatment
  - Nano-Bioflocculation for heavy metal removal
  - Grafted biopolymer & Nanoparticles for dye removal
- **Biocementation**
  - Microbially Induced Calcite Precipitation by ureolytic yeast
  - Blending of ureolytic microbes with cement for auto-healing the cracks

Consultancy Project sponsored by Euro Exim Bank, London **VIT Vellore, Tamil Nadu, India**
Independent Project Member **(January 2018-February 2020)**

- Independently lead the project entitled as "**Development of Nano Blended Bioplastic for Food Packaging**", sponsored by Euro Exim Bank, London Involved in conceptualization, literature review, planning, experiments, interpretation and analysis of the project under the **Project Leader**, **Dr. Nilanjana Mitra Das, Senior Professor**, SBST, VIT Vellore.
- The study highlights were green synthesis of silver nanoparticles using yeast strains, formulation of Cellulose-AgNP, Alginate-AgNP, Starch-AgNP, Pectin-AgNP, Gelatin-AgNP & Agar-AgNP nano-blended plastic films followed by evaluation of biodegradation, cytotoxicity, thermal, mechanical and antibacterial properties of these plastic films.

Indian Institute of Science Education & Research Kolkata (IISER-K) **Mohanpur, West Bengal, India**
M.Sc. Project Intern/ Junior Research Fellow **(January 2015-March 2016)**

- Worked on the topic entitled as "**Mycoremediation of high & low density polyethylene using fungal strains isolated from plastic dumping sites**" and published in **Scientific Reports**, under the guidance of **Dr. Sutapa Bose, Professor**.
- The study isolated two potential fungal strains, namely, *Penicillium oxalicum* NS4 (KU559906) and *Penicillium chrysogenum* NS10 (KU559907) from plastic dumping area which were identified to have plastic (HDPE, LDPE) degrading abilities. Further, the growth medium for the strains was optimized with the help of RSM. The plastic sheets were subjected to treatment with microbial culture for 90 days. The extent of degradation was analyzed by, **FE-SEM, AFM** and **FTIR**. Morphological changes in the plastic sheet were determined.
- Also involved in other collaborative research works, writing book chapters, review articles and research papers.

Indian Institute of Science Education & Research Kolkata (IISER-K) **Mohanpur, West Bengal, India**
Project intern **(December 2014-January 2015)**

- Worked on the review paper entitled "Evolution of Bacterial and Fungal growth media" under the guidance of **Dr. Sukant Khurana, Assistant Professor, IISER-K** and successfully published in the **Bioinformation** Journal.

Indian Institute of Technology (Banaras Hindu University, BHU) **Varanasi, Uttar Pradesh, India**
Indian Academy of Science (IAS) Summer Research Fellow **(June-August 2014)**

- Worked as IAS Summer Research Fellow under the supervision of **Dr. P.C Abhilash, Professor**, Institute of Environment & Sustainable Development, IIT Varanasi (BHU) on the project entitled "**Isolation of Rhizospheric Bacteria and its Evaluation for their Plant Growth Promotion Activity**" conducted by Indian Academy of Sciences, Bangalore, The Indian National Science Academy, New Delhi & The National Academy of Sciences, Allahabad, India.
- The study demonstrated the isolation and screening of Plant Growth Promoting Rhizospheric bacterial strains and their effects on cereal plant, Zea mays. The PGPR strains exhibited positive effect on enhancing the germination rate, morphological features like diameter of the shoot and leaves of the Zea mays plants. PGPR amended seeds were capable of resisting the pathogens which indirectly increases the fertility of the soil and consequently, increase the productivity of the crops. The study concluded that use of PGPR can reduces the application of chemical fertilizer, pesticides or insecticides in the current agricultural trends.

CONFERENCES

International Conferences

1. **Oral presentation** of research work entitled as "*Green synthesis of palladium nanoparticles and its application for fabricating antimicrobial PHBV/Pd nanocomposite as food packaging material*" in the **International Virtual Conference on Advanced Nanomaterials and Applications (VCAN 2020)** held on 20th June **2020** organized by Centre for Nanotechnology Research (CNR) VIT Vellore, Tamil Nadu, India.
2. **Poster presentation** of research paper entitled as "*Nanotechnological approach for improving the thermal, mechanical, biodegradable, biocompatible and antibacterial properties of polyhydroxyalkanoates (PHA) copolymer for food packaging: Formulation of biogenic PHA/SiO_2 bionanocomposites*" in the **2nd International Conference on Nanoscience and Nanotechnology (ICNAN-2019)** organized by Centre for Nanotechnology Research, VIT Vellore, Tamil Nadu, India on November 29th to December 1st **2019**.
3. **Oral presentation** of research work entitled "*Immobilization of Lipase, Catalase, and Glucose oxidase Enzymes onto Magnetosomes extracted from Magnetotactic bacteria Magnetospirillum gryphiswaldense (DSM 6361)*" in the" **9th International Conference on Science, Engineering and Technology**, on May 12th **2015** at VIT, Vellore, India.
4. **Oral presentation** of research work entitled "*Biosynthesis and characterization of Palladium Nanoparticles by using marine fungi and its Anti-Helminthic, Anti-Fungal, and Anti-Oxidant activities*" in the" **8th International Conference on Science, Engineering and Technology**, on May 7th **2014** at VIT, Vellore, India.
5. **Poster presentation** of research work entitled "*Biosynthesis and characterization of Palladium Nanoparticles by using marine Actinobacteria"* in the **7th International Conference on Science, Engineering and Technology** held during November 14th and 15th, **2013** at VIT, Vellore.

National Conferences

6. **Oral presentation** of research work entitled "*Role of Wickerhamomyces anomalus VIT-NN01 in the production of poly (3-hydroxybutyrate-co-3-hydroxyvalerate): A statistical approach*" in **National conference on Recent Trends in Applied Perspectives of Plant Sciences (NCAPS-2018)** organized by Pachaiyappa Plant Science Research Forum (PPSRF), P.G. and Research Department of Botany Pachaiyappa's College during 27-28 **February 2018.**

WORKSHOPS ATTENDED

1. Participated in the **3rd Edition of VIT Bio Summit 2014** held on 7th and 8th August, **2014** at VIT University.
2. Attended six days workshop on "***Hands-on Workshop on Cell Culture Techniques & MTT Assay***" organized by the School of Bio-Sciences and Technology, Vellore Institute of Technology, Vellore-632 014, Tamil Nadu. India held during March 5th to 10th **2019**.
3. Attended two day's workshop on "***Advanced Techniques in Biological Sciences***" jointly organized by the Department of Biological Sciences of Dayananda Sagar College of Arts, Science and Commerce and **Azyme Biosciences, Bangalore** on January 8th and 9th **2012**.
4. Two day's workshop on **"*Contemporary Biology***" organized by the Department of Life Sciences, in association with **The Indian Academy of Sciences, Bangalore, The Indian National Science Academy, New Delhi,** and **The National Academy of Sciences, Allahabad,** held on 15th and 16th March **2011** at Jain University, Bangalore.
5. ***Recent Techniques in Immunology and Molecular Biology*'** conducted by the Department of Biological Sciences, in associated with **Aristo gene Biosciences Pvt. Ltd**., Bangalore, on October 8th and 9th **2010.**

TOOLS & TECHNIQUES

- ***Statistical Media optimization/ Fermentation culture media/ Production or Degradation culture media***
  Optimization of production media, optimization of growth parameters to enhance degradation rate or yield
  Response surface methodology viz. Box Behnken Design & Central Composite Design
- ***Microbial techniques & tools, Cell Culture & Toxicological studies Pollutants & Waste water remediation studies***
  Pure culture Isolation, Preservation, Bacterial & fungal Staining; Antibacterial, Antifungal & Anti-oxidant assays
  MTT Assay; *In Vitro* cell line, Fish *In Vivo* studies, Environmental pollutants & waste water remediation, Biopolymer synthesis, processing & modification techniques, Nanoparticle synthesis by plant, microbial enzymes
- ***Analytical studies & Instrumental analysis***
  Spectroscopy (NMR, FTIR, XRD); Ultra Violet Spectrophotometer; Electron Microscopy (TEM, AFM, SEM)
  Elemental Mapping (EDAX); Thermal analysis (TGA, DSC); Mechanical Testings (UTS, Charpy Notch)
  Chromatography (Column, Thin layer, GC-MS, HPLC); Electrophoresis (Agarose)
- ***Basic Computational studies***
  Molecular identification of strains by 18S rRNA partial & ITS sequencing; Blast analysis; Phylogenetic tree
  Submissions in GenBank
    - 18S rRNA partial sequences of *Fusarium oxysporum* NSF2 (KR611565), *Fusarium graminearum* NSF3 (KR611566) & *Penicillium decumbens* NSF4 (KR611567).
    - ITS sequences of *P. chrysogenum* NS10 (KU55907)**,** *P. oxalicum NS4* (KU55906), *W. anomalus* VIT-NN01 (KY751307), *C. tropicalis* NN4 (MH260384), *P. kudriavzevii* VIT-NNO2 (MH593830), *C. dubliniensis* VIT-NN03 (MH591468) & *Spathaspora* VIT-NN04 MH591472.

SKILLS

- ***Technical skills:*** Learnt basics of C++, MS office, DOS, Statistical Analysis, Process optimization, Response surface methodology (Box Behnken Design & Central Composite Design), Graph prism software, Origin software
- ***Team work skills:*** Awarded by certificate of participation in "**Team Work and Inter Personal Skills**" by Centre for Innovation and Leadership, Dayananda Sagar Institute of Technology held on January 4th 2012.
- ***Instruments Handled:*** Simple & Compound Microscopy, Autoclave, pH-meter, High Performance Liquid Chromatography, Spectrophotometer, Gas chromatography Mass Spectrometer, Laminar Air Flow, Cold Centrifuge, Sonicator, Ultimate tensile strength testing machine and Charpy Notched Impact strength
- ***Communication & leadership skills:*** Certified for completing BSc. Mass communication course during the 2012-2013 examinations, Bangalore University; Awarded by certificate of participation in "**Communication Skills**" by Centre for Innovation and Leadership, Dayananda Sagar Institute of Technology held on February 26th 2011
- ***Languages known:*** English**,** Bengali (Mother Tongue), Hindi, Sanskrit

REFERENCES

1. **Dr. P.C Abhilash (PhD.)**
   Associate Professor
   Institute of Environment & Sustainable Development (IESD),
   Institute of Technology (IIT), Varanasi (BHU), 221005, Utter Pradesh, India
   Phone: + 91 9415644280, Email: pca.iesd@bhu.ac.in

2. **Dr. Datta Madamwar (FAMI, FBRS, FABAP, FIBA, FGSA)**
   Scientific Advisor
   P. D. Patel Institute of Applied Sciences, **Charotar University of Science and Technology**,
   CHARUSAT Campus, Changa 388 421, Dist. Anand, Gujarat, India
   Phone: +91 98256 86025, Email: datta_madamwar@yahoo.com ; dattamadamwar.as@charusat.ac.in

3. **Prof. Nilanjana Mitra Das (PhD.)**
   Former Senior Professor
   Department of Bio Medical Sciences**,** School of Bio Sciences and Technology (SBST)
   Vellore Institute of Technology (VIT), Vellore-632 014, Tamil Nadu, India**;**
   Phone: +91 9994737298**,** E-mail: nilanjanamitradasvitvellore@gmail.com

4. **Dr. Sutapa Bose Rai (PhD.)**
   Ramanujan Fellow**,** Principle Investigator
   Department of Earth Sciences (DES)
   Indian Institute of Science Education & Research (IISER) Kolkata, Mohanpur-741252, West Bengal, India**;**
   Phone: + 91 8145283082**,** E-mail: sutaparai@gmail.com

DECLARATION

I declare that the above information is true and correct to the best of my knowledge and belief.

Date: 16/05/2025

Place: New Delhi **Dr. Nupur Ojha (Ph.D.)**