

CURRICULUM VITAE

ABILAJI S

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<https://scholar.google.com/citations?user=x-yXoeUAAAAJ&hl=en>



My expertise extends to optimizing biosurfactants for biodegradation, bioremediation, and bio corrosion inhibition. Additionally, I have a solid track record of integrating electrokinetic and electrooxidation approaches to improve wastewater treatment, including the remediation of textile and tannery effluents. I am committed to providing sustainable solutions that reduce environmental impact while enhancing the lifespan of materials and improving industrial processes.

Educational Qualifications

Degree	Year of Passing	Institution	University	Percentage (%)
Ph.D.	2024	Thiruvalluvar University, Vellore	Thiruvalluvar University, Vellore	Highly commanded
M.Sc., Biotechnology	2014	Thiruvalluvar University, Vellore	Thiruvalluvar University, Vellore	79.67
B.Sc., Biochemistry	2012	C. Abdul Hakeem College, Melvisharam	Thiruvalluvar University, Vellore	76
PGDMLT	2016	Madras Christian College, Chennai	Madras Christian College, Chennai	80

Doctoral research work

Dissertation Title: “ **Treatment of azo dye and industrial effluents by electrochemical and biological methods**”

Area of interest

- ❖ Electrochemical waste water treatment
- ❖ Micro plastics degradation
- ❖ Bio-electrochemistry
- ❖ Molecular identification of microbes
- ❖ Biodegradation and bioremediation
- ❖ Bio-Electrokinetics for waste management
- ❖ Biochar and environmental applications
- ❖ Heavy metal contaminated soil remediation
- ❖ Textile and tannery effluent/ waste water treatment

Industrial visits

- Industrial visit at SIDCO Waste water treatment company, Ranipet Chennai on January 2014.

Technical Skills

- UV-Vis Spectrophotometer.
- High Performance Liquid Chromatography (HPLC).
- FT-IR spectroscopy
- XRD
- GC-MS
- Blood collection and diagnosis.
- Basic microbiology techniques.
- Plant &Animal Cell Culture
- DNA, RNA and Protein Extraction & Characterization
- SDS–PAGE, ELISA ,Western blot & FACS

Computer Skills

Windows 7, 8 and 10, Microsoft Office, Adobe, Origin pro, Design expert, and Sigma plot.

Experience in Guidance at Ph.D.

1. Guided for M.Sc. students project work in few years (2022 = 2 Students; 2023 = 3 Students; 2024 = 3 Students).
2. **Junior Research Fellow** from March 2022 to June 2023 at Thiruvalluvar University, India.
Citations: 87; h-index: 4; i10-index: 4

Professional Experience

Senior Executive- QC at Life Cell International Pvt Ltd, Chennai. From December 2014- August 2018.

Senior Executive- Application specialist at molbio diagnostics Pvt Ltd, Chennai. From September 2018- April 2021.

Summary of research:

Waste water, textile and tannery effluent treatment using integrated approaches of electro-kinetics with biodegradation. His experience in electro kinetics and electrooxidation involves applying electrical fields to drive processes such as the removal of pollutants and the enhancement of chemical reactions. In electro kinetics, you've utilized electric fields to manipulate the movement of particles, such as contaminants, in soils, sediments, or wastewater, aiding in their removal or treatment. This method has been particularly useful in wastewater treatment, where electric fields help to accelerate the migration of pollutants toward electrodes for easier extraction. In electrooxidation, you've explored using electrical currents to oxidize organic compounds, breaking down pollutants and contaminants. This technique is widely used

for the degradation of organic waste and can be particularly effective in treating effluents from industrial processes, such as textile or tannery wastewater. The goal of your work has been to optimize these processes for greater efficiency and sustainability, often combining electrokinetic techniques with biodegradation to enhance environmental remediation efforts. His work has likely focused on the development of more effective systems that minimize energy consumption while maximizing the removal or breakdown of contaminants, making these methods more viable for large-scale or real-world applications. A remarkable improvement of corrosion control strategies using biocide & inhibitors were investigated. We established many eco-friendly compounds and selected some green inhibitors to inhibit the microbial corrosion problems in the cooling water system, oil reservoir conditions and marine environment. Additionally many of a green biocides and chemical inhibitors also applied to inhibit the biofilm formation, bio-fouling and improve metal life span with negligible impact on the surrounding environment.

Publications:

1. **Abilaji, S.**, Sathishkumar, K., Narenkumar, J., Alsalhi, M.S., Devanesan, S., Parthipan, P., Muthuraj, B. and Rajasekar, A., 2023. Sequential photo electro oxidation and biodegradation of textile effluent: Elucidation of degradation mechanism and bacterial diversity. *Chemosphere*, 331, p.138816.
2. **Abilaji, S.**, Narenkumar, J., Das, B., Suresh, S., Rajakrishnan, R., Sathishkumar, K., Rajamohan, R. and Rajasekar, A., 2023. Electrochemical oxidation of azo dyes degradation by RuO₂–IrO₂– TiO₂ electrode with biodegradation *Aeromonas hydrophila* AR1 and its degradation pathway: An integrated approach. *Chemosphere*, 345, p.140516.
3. Santhosh, S., **Abilaji, S.**, AlSalhi, M.S., Devanesan, S., Narenkumar, J., Rajamohan, R. and Rajasekar, A., 2024. Remediation of azodye contaminated soil by Electrokinetics. *Journal of the Taiwan Institute of Chemical Engineers*, p.105262.

4. Narenkumar, J., Das, B., **Abilaji, S.**, Sathishkumar, K., AlSalhi, M.S., Devanesan, S., Rajasekar, A. and Malik, T., 2024. Biosurfactant-assisted bio-electrokinetic enhanced remediation of heavy metal-contaminated soil. *Frontiers in Microbiology*, 15, p.1458369.
5. Narenkumar, J., AlSalhi, M.S., Arul Prakash, A., **Abilaji, S.**, Devanesan, S., Rajasekar, A. and Alfuraydi, A.A., 2019. Impact and role of bacterial communities on biocorrosion of metals used in the processing industry. *Acs Omega*, 4(25), pp.21353-21360.
6. Suganya K, Nanthini AU, Narenkumar J, **Abilaji S**, Rajasekar A, Sivakumar S, Prasath S, Almoallim HS, Alahmadi TA. Research Article Impact of Light and Temperature on Growth, Intracellular and Extracellular Pigment, and Lovastatin Yield by *Monascus ruber* in Synthetic Medium.

Conference poster presentations

BEST POSTER AND WORK MODEL AWARD National science day science fest 2024 won second prize for best work model award. Thiruvalluvar university.

Conference and work shop attended

- National seminar on **Recent Trends in Biochemistry** at Department of Biochemistry, Auxilium college, Katpadi.
- State level seminar on **Recent Trends in Chemistry** at C.Abdul Hakeem College, Melvisharam.
- National seminar on **Emerging Multiple Drug Resistant(MDR) and Extensively Drug Resistant(XDR)** at Department of Microbiology, DKM college, Katpadi.
- State level seminar on **Bio diversity and application of microalgae** at KMG College, Gudiyattam.
- International conference on **Current immunological tools for**

biodiversity and status environment health at Annamalai university,Parangipettai..

- National seminar on **Recent trends in biosciences** at KMG College,Gudiyattam.
- International conference on **Recent advances in biochemical technology (RABT)** at Thiruvalluvar university.
- International conference on **Emerging trends in chemistry and materials(ETCM)** at Thiruvalluvar university.
- National science day conference on **Integrated approach in science and technology for a sustainable future** at Thiruvalluvar university.
- International conference on **Bio materials for biotechnological applications(ICBBA)** at Thiruvalluvar university.

Reference 1:

Dr. A. Rajasekar,M.Sc.,Ph.D.

Associate Professor & Head

Ramalingaswami Fellow

Department of Biotechnology

ThiruvalluvarUniversity,Vellore,

TamilNadu, India.

EmailID:rajasekargood@gmail.com; rajasekargood@tvu.edu.in

Reference 2:

Dr.Seralathan Kamalakannan

Professor

Division of Biotechnology

College of Environmental and Bioresource Sciences Jeonbuk National University

Iksan,Jeollabuk-do,SouthKorea.

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Reference 3:

Dr.TabarakMalik

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Associate Professor

Department of Biomedical Sciences,

Jimma University, Ethiopia,

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Declaration

I hereby declare that the above furnished information is true to the best of my knowledge and belief that no related information is concealed.

Date:

Yours truly,



Place:

(S.ABILAJI)