CURRICULUM VITAE

Assistant Professor (Research),
Centre for Waste Management,
Sathyabama Institute of Science and Technology,
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Dr. P. Priyadharsini

CAREER SUMMARY:

With over ten years of experience in bioethanol production research, I am highly motivated to leverage my expertise and pursue new challenges in this field. My doctoral research focused on the bioethanol production from *Kappaphycus alvarezii* blended with food waste, contributing significantly to the exploration of novel and sustainable feedstocks. My commitment to research excellence is reflected in my publication record. As the author of 17 research papers in refereed international journals, 3 research papers in international conference proceedings, and 6 book chapters in international publishers' community. Notably, a significant portion of these publications appear in Q1 journals, with my highest impact factor reaching 9.8. Additionally, my research has garnered significant attention, evidenced by over 350 citations in Web of Science journals and an h-index of 11. I am highly motivated to utilize my skills, pursue my research career and contribute to the development of my organization.

RESEARCH EXPERIENCE:

Designation	Periods	Institution
Assistant Professor (Research)	July 2024 onwards	**Centre for Waste Management, Satyabama Institute of Science and Technology, Jeppiaar Nagar (OMR), Chennai- 600 119, Tamil Nadu, India.**
Scientific Assistant	December 2021 to June	**Centre for Waste Management, Satyabama Institute of Science and Technology, Jeppiaar Nagar (OMR), Chennai- 600 119, Tamil Nadu, India.**
Research scholar	August 2019 to 2021	**Centre of Excellence for Energy Research Sathyabama Institute of Science and Technology**
Junior Research Fellow (JRF)	Feb 2015 to April 2018	**Sathyabama Institute of Science and Technology**
Assistant Professor	June2014 to January2015	**Prince Dr. K. Vasudevan college of Engineering, Chennai**
Assistant Professor	June 2012 to May2013	**Infant Jesus College of Engineering & Technology, Thoothukudi**

EXPERIENCE AS RESEARCH FELLOW

My research interest lies largely in exploring the field of bioethanol production and lignocellulosic biomass-based research.

- Developing and optimizing pretreatment methods for lignocellulosic biomass.
- Engineering and characterizing high-yield bioethanol producing microorganisms.
- Improving enzymatic hydrolysis efficiency for efficient sugar release.
- Optimizing fermentation processes for maximizing bioethanol production.
- Developing and implementing novel downstream processing techniques for bioethanol purification.

Student projects handled:

- Synthesis and Characterization of Cellulose nanocrystal - TiO_2 based Hydrogel from Areca nut Husk
- Fermentation optimization using bioinformatics tool for achieving higher percentage bioethanol
- Optimization of hydrolysis using bioinformatics tool for enhanced bioethanol production
- Extraction and Characterization of Cellulose Nanocrystals from Eichhornia Crassipes for Production of Hydrogel
- Extraction, Optimization and Characterization of Cellulose in Various Lignocellulosic Biomass for Efficient bio alcohol Production
- Separation of Cellulose, hemicellulose and lignin from the biomass and their characterization
- Lignocellulosic derived insulating material for heat transfer applications
- Property Evaluation of Food Waste/Biomass for Methanol Synthesis.
- Production of Bioethanol from Biomass and its Performance Evaluation of Petro- Ethanol Blend Using Four Stroke Engine.
- Prediction of Experimental Conditions for Bioethanol Production using Fuzzy Neural Network
- Production of Bioethanol from Water hyacinth and its performance analysis
- Production of Rice straw: Source of bioethanol production and their properties
- Investigating of properties and estimation of ideal blending ratio of blended waste cooking oil biodiesel
- Investigation of bio-ethanol production from municipal solid waste brewing
- Activated carbon from food waste for waste water treatment
- Biodiesel production from Waste cooking oil and their properties
- Bioethanol from algal reject and their characterization
- Production and characterization of Bio-oil from lignocellulosic lipids rich biomass
- Fabrication and characterization of superhydrophobic PVDF membranes for efficient ethanol recovery via pervaporation.

RESEARCH DURING Ph.D.:

Ph.D. Title

"Invitro Analysis of Bioethanol Production Using Rejects of *Kappaphycus alvarezii* Blended with Food Waste"

The major objective of my Ph. D work aims:

- Compositional and structural evaluation of *Kappaphycus alvarezii* rejects and solid food waste blends for bio ethanol
- Optimization of fermentation conditions using response surface methodology (RSM) with kinetic studies for the production of bioethanol from rejects of Kappaphycus alvarezii and solid food waste
- Four stroke diesel engine performance and emission studies of ethanol recovered from *Kappaphycus alvarezii* reject -solid food waste mixed substrates and its blends.

EDUCATION:

S. No	Course	Year of Passing	Institution/University
1.	Ph. D (Chemistry)	2022	Sathyabama Institute of Science and Technology
2.	M. Phil., (Chemistry)	2013	Manonmanium Sundaranar University, Tirunelveli.
3.	M.Sc., (Chemistry)	2011	Manonmanium Sundaranar University, Tirunelveli.
4.	B.Ed.,	2008	Manonmanium Sundaranar University, Tirunelveli.
5.	B.Sc., (Chemistry)	2007	Manonmanium Sundaranar University, Tirunelveli.

PUBLICATIONS:

1. Jayaseelan Arun, Panneerselvam SundarRajan, Kirubanandam Grace Pavithra, **Packiyadoss Priyadharsini**, Sivaprasad Shyam, Rangarajan Goutham, Quynh Hoang Le, Arivalagan Pugazhendhi,New insights into microbial electrolysis cells (MEC) and microbial fuel cells (MFC) for simultaneous wastewater treatment and green fuel (hydrogen) generation, Fuel, 2024, 235, ***[IF: 7.4].***

2. Packiyadhas, P., Sivaperumal, S.K. & Murugesan, S, A Comprehensive Review of Food Waste: Composition, Current Management, Thermal Treatment, Valorisation into Bioproducts and Sustainable Development Goals Linkages, *J Mater Cycles Waste Manag* (2024). https://doi.org/10.1007/s10163-024-02153-9 **[2.7]**

3. **P Priyadharsini**, P SundarRajan, K Grace Pavithra, S Naveen, S SanjayKumar, D Gnanaprakash, J Arun, Arivalagan Pugazhendhi, Nanohybrid photocatalysts in dye (Colorants) wastewater treatment: Recent trends in simultaneous dye degradation, hydrogen production, storage and transport feasibility, Journal of Cleaner Production,2023**, *[IF: 11.1].***

4. **P Priyadharsini,** N Nirmala, SS Dawn, A Baskaran, P SundarRajan, KP Gopinath, J Arun, Genetic improvement of microalgae for enhanced carbon dioxide sequesteration and enriched biomass productivity: Review on CO2 bio-fixation pathways modifications, Algal Research, 2022, 66, ***[IF: 5.1].***

5. J Arun, T Sasipraba, KP Gopinath, **P Priyadharsini,** S Nachiappan, N Nirmala, SS Dawn, Nguyen Thuy Lan Chi, Arivalagan Pugazhendhi, Influence of biomass and nanoadditives in dark fermentation for enriched bio-hydrogen production: A detailed mechanistic review on pathway and commercialization challenges, Fuel, 2022, 327, ***[IF: 7.4].***

6. N Nirmala, V Shriniti, K Aasresha, J Arun, KP Gopinath, SS Dawn, A Sheeladevi, **P Priyadharsini**, Kathirvel Birindhadevi, Nguyen Thuy Lan Chi, Arivalagan Pugazhendhi, Removal of toxic metals from wastewater environment by graphene-based composites: A review on isotherm and kinetic models, recent trends, challenges and future directions, , Science of the Total

Environment, 2022, 840, ***[IF: 9.8].***

7. J Arun, N Nirmala, **P Priyadharsini,** SS Dawn, A Santhosh, KP Gopinath, M Govarthanan, A mini review on bioderived carbon and its nanocomposites for removal of organic pollutants from waste waters. Materials Letters, 2022, 310, ***[IF: 3].***

8. Sivasakthi M **& P Priyadharsini (2023**) Novel porous ambient temperature cured fly ash geopolymer for lead adsorption from wastewaters, Energy Sources, Part A: Recovery, Utilization, and Environmental Effects, 2023**,** ***[IF:2.9].***

9. **Priyadharsini P,** Dawn S.S, Arun. J. Four Stroke Diesel Engine Performance and Emission studies of Ethanol Recovered from Kappaphycus alvarezii reject -Solid Food Waste Mixed Substrates and its Blends, Chemosphere,2021, 291***, [IF: 8.8].***

10. ***Priyadharsini P,*** Dawn, S.S. Optimization of fermentation conditions using response surface methodology (RSM) with kinetic studies for the production of bioethanol from rejects of Kappaphycus alvarezii and solid food waste. Biomass Conversion and Biorefinery, 2023, 13, ***[IF: 4]***

11. J Arun, V Shriniti, S Shyam, **P Priyadharsini,** KP Gopinath, R Sivaramakrishnan, Nguyen Thuy Lan Chi, A Pugazhendhi, Technical insights on various routes of hydrogen production from pharmaceutical, hydrothermal, sewage and textile wastewaters: Cost comparison and challenges, Fuel, 2023, 340, ***[IF: 7.4]***

12. **Priyadharsini Packiyadhas** & Dawn Shanmuganantham Selvanantham (2020): Compositional and structural evaluation of Kappaphycusalvarezii rejects and solid food waste blends for bio ethanol production, Energy Sources, Part A: Recovery, Utilization, and Environmental Effects, 2020, ***[IF: 2.9].***

13. J Jayaprabakar, SS Dawn, A Ranjan, **P Priyadharsini,** RJ George, S Sadaf, C Rajeswara Rajha Process optimization for biodiesel production from sheep skin and its performance, emission and combustion characterization in CI engine, Energy, 2019, 174, ***[IF: 9].***

14. **Priyadharsini. P,** S. Theodore David, Joel "Natural dyes and their FT-IR spectroscopy studies" International Journal on Applied Bioengineering, 2014, 8.

15. **Priyadharsini. P,** S. Thodore David, Joel "Corrosion Inhibition and Antimicrobial Activity Of Some Natural Dyes" National Journal on Chembiosis, 2014, 5.

16. Jenisha, S. Theodore David, J, **P.Priyadharsini** "Schiff base ligand its complexes and their FT-IR spectroscopy studies" International Journal on Applied Bioengineering, 2015, 9.

17. Jenisha, S. Theodore David**, J P.Priyadharsini** "Schiff Base Ligand Its Complexes And Their Analysis" National Journal on Chembiosis., 2014, 5

ABSTRACTS PUBLISHED IN CONFERENCE:

1. **Priyadharsini P,** Dawn S.S., Investigation of Hydrolysed Solid Food Waste For EnhancedBioethanol Production Using Baker's Yeast- An Ecological Waste To Energy Biofuel Technology ICASISET – 2020 **(Conference proceedings).**

2. **Priyadharsini Packiyadhas**, Sathish Kumar Ramachandran M, Sivasakthi Murugesan, A Review on Carbon Capture, Utilization And Storage (CCUS): Market Exploration And Their Impact On Achieving Sustainable Development Goals, National Conference on Waste to Energy, Carbon Capture, Utilization and Storage (NCWECCUS-2023).

3. **P. Priyadharsini**, J. Arun, Dawn S, Algae biomass derived biobutanol production: A review on current status, downstream process, cost analysis, challenges and future directions" at International Conference on Trends in Energy and Environmental Research for Sustainable Development (TEERSD-2023

DISTINCTION's:

1. "Organic Pot" selected in Confederation of Women Entrepreneurs (COWE), Tamil Nadu – one among Top 3 ideas, conducted by Anna University in association with Department of Science and Technology (DST)
2. "Patho- Controller" was selected in BEST – 2015 Top 20 Ideas conducted by ABLE India in association with Department of Biotechnology (DBT).
3. In recognition of her research publications in "HIGH IMPACT JOURNALS" For the Period July 2021 to June 2022.
4. SEED grant from Sathyabama Institute of Science and Technology (Rs.3,00,000)
5. In recognition of her research publications in "HIGH IMPACT JOURNALS" For the Period July 2022 to June 2023.
6. Best paper award for "Algae biomass derived biobutanol production: A review on current status, downstream process, cost analysis, challenges and future directions"
7. Technology transfer- Pilot scale bioethanol plant
8. Granted patent – A fuel blend and a method of synthesis thereof
9. Published patent - Bioethanol and fuel blend comprising (Application Number: 202241058319)
10. Patent filed- An Antibacterial Formulation and Method of Synthesis Thereof (Application Number is 202541008303).

AREA OF EXPERTISE:

- Bio-Ethanol Production
- Biomass and biofuel
- Energy and environment
- Waste utilization and valorization
- Wastewater treatment

WORKSHOPS AND SEMINARS:

- One-Day Training on Proximate Analysis and Characterization of Biomass for Bio ethanol Production (Convener)
- One-day Training on Biomass Fermentation and Distillation for Bioethanol Production (Convener)
- One-Day Training Cum Workshop on ATR FT-IR Spectroscopy and Interpretation for Science & Engineering Applications (Convener)
- One day Training on Biofuel Compositional Analysis and Data Interpretation Techniques using Gas Chromatography- Flame Ionization Detector &Thermal Conductivity Detector (GC- FID/TCD) (Co- Convener)
- One Day Training on Biodiesel Production and Characterization as per ASTM Standards (Co- Convener)
- Two Weeks Intensive Training on Resourceful Waste Conversion Technologies (Co- Convener)
- One day Training on Biomass Valorization using Hydrothermal Reactor (HTL).(Co- Convener)
- One day Training on Detection of Heavy Metals from Water using Atomic Absorption Spectrometer (AAS) (Co-Convener).

PERSONAL INFORMATION:

Father's Name	:	K.Packiyadhas
Date of Birth	:	30.06.1987
Marital Status	:	Married
Citizenship	:	Indian
Language Known	:	Tamil, English
Research Gate Profile	:	https://scholar.google.com/citations?user=A3c07pQAAAAJ&hl=en
ORCID ID	:	0000-0001-9020-1022

REFERENCES:

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DECLARATION:

I hereby declare that the above furnished information is true to the best of my knowledge.

Yours Truly,

(Dr. P. Priyadharsini)

Place: Chennai
Date: 16/05/2025