RAJESH BANU, Ph.D.
Associate Professor
Department of Biotechnology,
Central University of Tamil Nadu
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Date of Birth : 18.07.1974
Gender : Male
Marital Status : Married
Nationality : Indian
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EDUCATIONAL QUALIFICATIONS

Degree	Subjects	Class	Marks %	Year of Passing	University / Institution
B.Sc.	Botany	I	72.3	April 1995	Manonmanium Sundaranar University, India
M.Sc.	Environmental Biotechnology	I	75.4	April 1998	Manonmanium Sundaranar University, India
M.Phil.	Environmental Science	I	72	March 2000	Centre for Environmental Studies Anna University, Chennai, India
Ph.D.	Environmental Biotechnology	A study on treatment of high strength industrial wastewater using high-rate anaerobic reactor		Nov. 2006	

RESEARCH AREA

- Bioenergy (Methane and Hydrogen) generation from Waste Biomass (Sludge, Algae, Plant)
- Wastewater Treatment: Nutrient Removal, Aerobic (Membrane Bioreactor) and Anaerobic (Hybrid upflow anaerobic sludge blanket).
- Bioelectricity generation via Microbial Fuel cell.

RESEARCH EXPERIENCES

- **Post-Doctoral Researcher** -Department of Civil & Environmental Engineering, Sungkyunkwan University, Korea. Aug 2006- Aug 2008.
- **Visiting Researcher** – School of Ecological and Environmental Science, East China Normal University, Shanghai, China – March, 2019.

RESEARCH HIGHLIGHTS

Total no of paper published : **350** (Scopus Author ID: 16834439700)
Patent **: 4- Granted; 5- Published;**
No of Citation : 13000 (H index: 60& i10 index:214)
Book : 5 (2 Text book; 4 Edited book)
Book Chapter : 47
E-Learning material : 5 modules for MHRD, e–PG Pathshala (Environmental science)
Research Guidance : Ph.D. Awarded– 17; Ongoing – 2; M.E/M.Tech. – 98; M.Sc. – 4

TEACHING EXPERIENCE

Period Position	Name of the Institution	Nature of duties
Associate Professor 03rd Feb2020 to Till date	Dept. of Biotechnology, Central University of Tamil Nadu Tiruvarur, India	Handled the following classes for IMSc/MSc Biotechnology • Environmental Biotechnology, Biofertilizers, Aquatic Biology, Handling Microbiology practical
Assistant Professor 1st Sep 2008 to 28th Jan 2020	Regional Campus of Anna University-Tirunelveli, Tamilnadu, India	Handled following classes for Post Graduate engineering students • Biochemical Engineering; Environmental Biotechnology; Environmental Impact Assessment; Biological wastewater treatment; Environmental Microbiology; Resource and Energy Recovery; Ecological Engineering; Environmental quality Monitoring Incharge charge of Environmental Engineering Lab • Environmental Microbiology, Environmental chemistry lab Handled classes for Undergraduate students
Lecturer 1stMar 2007 to Aug 2008	Sungkyunkwan University, Dept. of Environmental Engineering Korea	Handled classes for Master degree students and taught following subjects • Unit processes in wastewater treatment-Spring semester-2007 • Advanced wastewater treatment- Winder semester-2007 • Environmental Microbiology – 2008.
Lecturer 1stJune 2004 to May 2006	Jeppiaar Engineering college, Dept. of Biotechnology Sholinganallur, Chennai – 600119	Handled classes for under graduate students and taught following subjects • Environmental Biotechnology, Microbiology, Bioprocess Engineering. • Incharge of the microbiology lab

AWARDS AND HONOURS

- Visiting Professor - CEES, King Abdulaziz University, Saudi Arabia- 2021
- **Ranked among world's top 2% scientists** for the year (2019-20; 2020-21; 2021-22; 2022-23)
- **Ranked 30th in India** in the field of **Engineering and Technology** (https://research.com/u/j-rajesh-banu)
- **Senior Editor:** e-Prime – Elsevier – 2021 to 2024 – **Honorarium of 1000USD/year**
- Visiting Researcher – East China Normal University, Shanghai, China – March 2019.
- GIZ sponsored Fecal Sludge Management conference in Cape Town, South Africa – Feb. 2019
- Hiyoshi (Japan) – Think of Ecology Award – 25,000 Cash prize and citation – September 2018.
- Young Scientist award at conference RACEE-SSN Engineering college, Chennai – Feb. 2018
- Young Scientist award under Fast Track-DST, Govt. of India, 2010.
- Young Scientist award under RGYI-DBT, Govt. of India, 2009.
- Post-Doctoral Fellowship - Brain Korea 20 (BK-20) by Korean Ministry of Education, 2006-08.
- Best teacher award in Jeppiaar Engineering College, Tamilnadu, India, for the year 2006.

AWARDS FOR RESEARCH PAPERS

- **Best Poster** presentation of our paper "Biofuels and value added bioproducts recovery from organic food waste" in (ICPPCT) & Taiwan-India Workshop on Emerging Environment and Energy Challenges of Technology exchange from December 6th to 7th at IIIT-D, 2021, New Delhi, India.
- **Cover page image** in the journal "Cost-effective biomethanation via surfactant coupled ultrasonic liquefaction of mixed microalgal biomass harvested from open raceway pond" has been selected by Bioresource Technology to appear on the cover page, Volume 304, Article ID 123021, 2020.
- **Best Poster** presentation of our "Solar photocatalytic oxidation of oily wastewater from automobile service station" in (ICPPCT) & Taiwan-India Workshop on Emerging Environment and Energy Challenges of Technology exchange from December 6th to 7th at IIIT-D, 2021, New Delhi, India.
- **Best Poster** presentation of our paper "Recovery of VFA from marine microalgae hydrolysate using energy efficient thermo-acidic coupled ultrasonic homogenization" 8th Global conference on Glopal Warming, 22nd -25th of April, 2019, Doha, Qatar.
- **Best poster** presentation for our paper "Performance analysis of MBR coupled with combined sludge pretreatment for energy efficient sludge reduction" in ICAFE-2017, 23-24 October, Daegu, South Korea.
- **Cover page image** in the journal "Effect of deflocculation on photo-induced thin layer TiO2 disintegration of dairy waste activated sludge for cost and energy efficient methane production" has been selected by Bioresource Technology to appear on the cover page, Vol.244,2017.
- **Best paper** award at an international conference on Advances in Algal Biotechnology, VIT, Vellore, India. August 10-12, 2016.
- Top Reviewer Award – Bioresource Technology Journal 2015.

MEMBER

1. Expert member to review a research proposal for the executive government agency of the National Science Centre (Narodowe Centrum Nauki - NCN; http://www.ncn.gov.pl). Poland. 2017 to till date
2. Member of Syllabus Committee (B.E, M.E. Env. Engg.) Anna University, Chennai 2016, 2021, 2023
3. Member of Board of Studies for Environmental Science, M.S. University, Tirunelveli, 2016, 2021-2023
4. Member of Board of Studies for Environmental Science, Periyar University, Tamil Nadu, 2022-23
5. Member of Board of Studies for Microbiology, Central University of Tamil Nadu, India, 2022-23
6. Member of NRI scrutiny committee - Anna Univ. of Tech., Tirunelveli, India 2009.
7. Member of Board of Studies for Environmental Science - PSN college

RESEARCH FUNDING AGENCY

1. Excess sludge reduction by lysozyme secreting bacterial pretreatment. RGYIS/DBT/BT/PR/13124/GBD/27/192/2009.Department of Biotechnology, Government of India. 2009-12. (18325.05 USD).
2. Effect of sludge reduction and the recovery of solubilized nutrient from pretreated sludge Fast track-SR/FTP/ETP-0021/2010. Department of Science and Technology, Government of India. 2010-13. (6240.92 USD).
3. Pretreatment of agro-based biosolids for high rate anaerobic digestion process. SR/WOS-A/ET-34/2011-Department of Science and Technology, Government of India. 2011-14. (27533.47 USD).
4. Bioremediation of chlorinated hydrocarbon.Tamilnadu State Council for Science and Technology. 2012. (917.78 USD).
5. Zhen guangyin, Pan yang, Zhi Zhongxiang, Zheng Shaojuan, J. Rajesh banu. Combined electrochemical catalysis and anaerobic membrane bioreactor for high efficient sludge fermentation and in-situ membrane fouling control. Science & Technology Innovation Action Plan of Shanghai under the Belt and Road Initiative (17230741100), 2017.12.1~2019.09.30.(46176.47 USD)

6. Novel integrated biorefinery for conversion of lignocellulosic agro waste into value added products and bioenergy (biohydrogen and methane)" BT/PR31054 /PBD/26/763/2019. Department of Biotechnology, Government of India. 2019-21. (93379.79 USD).
7. A Study Of The Existing Co-Treatment Of Fecal Sludge And Sewage In The Sewage Treatment Plant At Ukkadam, Coimbatore & Upgradation Of Fecal Sludge Analysis Laboratory at Anna University Regional Campus, Tirunelveli. 2019-20. (80000.00Euro).
8. Bioaugmentation of electrogenic halophiles in the treatment of pharmaceutical industrial wastewater and energy production in microbial fuel cell under saline condition. IFPHI-260-980-2020, RDO (Research and Development Office), Ministry of Education, Saudi Arabia. 2020-2021. (10,000 USD)
9. Macroalgae derived biohydrogen recovery through mild biosurfactant induced energy and cost efficient dispersion pretreatment technology. IFPHI-261-980-2020, RDO (Research and Development Office), Ministry of Education, Saudi Arabia. 2020-2021. (10,000 USD)
10. Application of biochar on agro ecosystem for mitigating climate change and GHG emission. UGC - STRIDE (component 1) of CUTN. 2021-2022. (5,000 USD).
11. Development of Innovative Integrated Approaches for Sustainable Biohydrogen Production Using Predominant Macroalgal Species in Qatari Environment. NPRP14S-0401-210120. QNRF. 2023-2026 (5,39,820 USD)
12. A novel bioconversion of volatile fatty acids from waste streams to polyhydroxyalkanoates and concomitant synthesis of biopolymer-based nanoparticles. BT/PR45817/BCE/8/1782/2023. DBT, India. 2023-2026. (53,800 USD)

CONSULTANCY

1. Design of sewage treatment plant. Tamilnadu Slum Clearance Board. 2017. (4282.98 USD)
2. Flood protection plan for the year 2017. Tirunelveli Cooperation, Govt of TN. 2017. (4588.91 USD)

Ph.D. AWARDED

1  Dr. R. Uma Rani, "Enhancing sludge reduction potential of dairy waste activated sludge by various physio-chemical pretreatments" Awarded in Faculty of Civil Engineering,November – 2013.

2  Dr. J. Merlin, "Effect of extracellular polymeric substances in sludge solubilization potential of protease secreting bacteria" Awarded in Faculty of Science and Humanities, February – 2014.

3  Dr. S. Gopikumar, "Enhancement of anaerobic digestion potential in waste activated sludge by biological pretreatment" Awarded inFaculty of Civil Engineering. March – 2015.

4 Dr. S. Esakki Raj, "Effects of side-stream, low temperature phosphorus recovery on the performance of anaerobic/anoxic/oxic systems integrated with sludge pretreatment" Awarded in Faculty of Science and Humanities. July – 2015.

5  Dr. S. Kavitha,"Enhancement of anaerobic biodegradability in municipal waste activated sludge by phase separated biological disintegration" Awarded in Faculty of Science and Humanities.July-2016.

6  Dr. A. VimalaEbenezer,"Investigating the effect of deflocculation induced MW pretreatment on biodegradability and development of cost effective sludge treatment facility" Awarded in Faculty of Civil Engineering, July - 2016.

7  Dr. C. Jayashree, "Employment of dual chamber and tubular upflow microbial fuel cells for energy generation from wastewater" Awarded in Faculty of Science and Humanities, December- 2016.

8  Dr. U. Ushani, "Enhancement of anaerobic biodegradability in municipal waste activated sludge by immobilized biological disintegration" Awarded in Faculty of Science and Humanities, April-2017.

9  Dr. V. Amudha, “Sludge reduction by Fenton and modified Fenton processes through deflocculation using citric acid” Awarded in Faculty of Science and Humanities, August-2017.

10  Dr. M. Suresh Karthik Kumar, “Effect of chemo-mechanical pretreatment on sludge reduction potential of MBR treating high strength domestic wastewater” Awarded in Faculty of Civil Engineering, February-2018.

11  Dr. A. Parvathi Eswari“Evaluation of phase separated microwave disintegration of dairy waste activated biomass for methane production” Awarded in Faculty of Civil Engineering, August-2018.

12  Dr. K. Tamilarasan“Prediction of anaerobic biodegradability by MATLAB assisted models for the assessment of biofuel production in marine macroalgal biomass” Awarded in Faculty of Civil Engineering, April-2019.

13  Dr. V. Godwin Sharmila “Thin Film Advanced OxidationMediated Phase SeparatedPretreatment For Cost EfficientBiofuel And Sludge Management” Awarded in Faculty of Civil Engineering, November-2019.

14  Mr. G. Sokkanathan “Treatment of wastewaters through combined upflow anaerobic sludge blanket and solar photo Fenton Process” Awarded in Faculty of Civil Engineering, October-2020.

15  Mr. R. Yukesh Kannah “Effect of cell wall weakening onmicroalgae (*Chlorella vulgaris*) for energyand cost effective biomethaneproduction” Awarded in Faculty of Civil Engineering, November-2020.

16  Mr. M. Dinesh Kumar “Energy efficient biohydrogenproduction from a sea weed(*Ulva reticulate*)” Awarded in Faculty of Civil Engineering, February-2021.

17  Mrs. Sugitha. “Effect of soluble lignin on achieving cost effective biomethanation from aquatic macrophyte biomass through combinative pretreatment. Awarded in Faculty of Civil Engineering, February-2022.

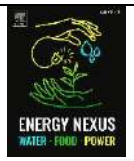
JOURNALS: EDITOR

ISSN-2673-4524
Front. in Sustainability
Associate Editor
2022-23

ISSN: 2381-8905
Austin Chem. Engg.
Editorial Board
(2022)

ISSN: 2588-9125
Water Energy Nexus
Editorial Board
(2022-23)

ISSN: 2772-6711
E-Prime
Senior Editor
(2021-2024)



ISSN: 2772-427
Energy Nexus
Editorial Board
(2022-2023)

Guest Editor:

1. Special Issue: Recent Advances in Biopolymers Production from Biomass and Waste – the Route towards a Circular Bioeconomy - Bioresource Technology (IF-11.3): (RABP-2020)
2. Special Issue: Energy Efficiency and Renewable Energy - Energy and Environment Journal. (ICAFE 2017)
3. Special Issue: Biomass, Bioenergy, and Biofuels for circular Economy – Frontiers in Energy Research (2021)
4. Special Issue: Anaerobic Digestate Management: Towards New Insight from waste to resource recovery – Biomass bioenergy (IF-5.0) (2023).
5. Special Issue: Emerging Technologies for Landfill leachate management- Journal of Environmental Management (IF-5.0) (2023)

JOURNALS: REVIEWER

Applied Energy, Bioresource Technology, Biomass and Bioenergy, Chemical Engineering Journal, Chemosphere, Solar Energy, Journal of Hazardous Materials, Waste Manganment, Ultrasonic Sonochemistry, Water Research, Fuel, Science of total environment, Journal of Environmental Management. Journal Cleaner Production

International Journal of Environment Science and Technolgy,Environmental Science and Pollution Research, Applied biochemistry and biotechnology,Waste and Biomass Valorization.

Environmental Progress & Sustainable Energy, Journal chemical technology and biotechnology.

Desalination and Water Treatment,Environmental Technology.

Energy and Fuel, Environmental Science and Technology, Industrial Engineering and Chemistry Research.

RSC Advance

PATENT –Filed/Published/Granted

S.No	Authors	Title	Agency	Information	Status
1	AdishKumar Devi **J.Rajesh banu**	A method and system for generating electricity by degradation of retreated latex wastewater using doublechamber microbial fuel cell	Australian Govt. IP Australia	Granted on 9 March 2022	Granted
2	AdishKumar Devi **J.Rajesh banu**	A system and method for degradation of a natural rubber latex processing and productionwastewater		Granted on 27 April 2022	
3	AdishKumar Devi **J.Rajesh banu** Gopalkrishnan	A method and system for removing Cr^3 from tannery wastewater		Granted on 27th April 2022	
4	Christia Rani, Adishkumar **J.Rajesh banu** Godvin Sharmila	A system and method for treatment of landfill leachate.	South African	Granted on 29th March 2023	
5	AdishKumar Selvabharathi **J.Rajesh banu**	Combined homogeneous and heterogeneous AOP for the treatment of tannery waste	INDIA	Publication date: 07/01/2022	Published
6	Preethi **J.Rajesh banu** M.Gunasekaran	Method to improve methane production in WAS by adding low Dosage of H_2O_2		Journal No. 24 17/06/2022	

7	Dinesh kumar Tamilarasan AdishKumar **J.Rajesh banu**	Method to improve biohydrogen production from sea weed		Publication date: 17/06/2022	
8	Tamilarasan Dinesh kumar AdishKumar **J.Rajesh banu**	Energetically feasible biomethane generation from macroalgae through combined approach of disperser		Publication date: 17/06/2022	

ARTICLES PUBLISHED IN JOURNALS

(***indicate corresponding author**)

2023

1. Thi Bao Dung, C-H Lay, D. Duc Nguyen, S. Woong Chang, J. Rajesh Banu, Y-Hong, J-H Park. (2023) Improving the biohydrogen production potential of macroalgal biomass through mild acid dispersion pretreatment. Fuel. Vol. 332, 125895. (**SCI/IF-8.0**).
2. Shanthi. M, M.A. Sundaramahalingam, **Rajesh Banu J**, P.Sivashanmugam. (2023). Surfactant-assisted ultrasonic fragmentation of mixed fruit and vegetable biomass: Its impact on biomethane yield and energy analysis. Fuel. Vol. 334, 126617. (**SCI/IF-8.0**).
3. Shabarish S, Tamilarasan K, **Rajesh Banu.J**, Godvin Sharmila V. (2023). Biohydrogen production from macroalgae via sonic-biosurfactant disintegration - An energy-efficient approach. Resources, Environment and Sustainability. Vol. 11, Article ID 100093.
4. Ashokkumar. V, Flora, Murugan.S., Sripriya, .H Chen, J-H Park, **Rajesh Banu.J**, Gopalakrishna Kumar. (2023). Technological advances in the production of carotenoids and their applications– A critical review. Bioresource Technology. (**SCI/IF-11.8**). Vol. 367, Article ID 12816.
5. Shashi Kant Bhatia, **Rajesh Banu.J**, Vijai Singh, Gopalakrishnan Kumar, Y-Hyang. (2023). Algal biomass to biohydrogen: Pretreatment, influencing factors, and conversion strategies. Bioresource Technology. Vol. 368. Article ID. 128332 (**SCI/IF-11.8**).
6. Preethi. **Rajesh Banu.J**, Gopalakrishnan kumar, M.Gunasekaran. (2023). Augmentation in polyhydroxybutyrate and biogas production from waste activated sludge through mild sonication induced thermo-fenton disintegration. Bioresource Technology. Vol. 369. Article ID. 128376. (**SCI/IF-11.8**).
7. Dharmaraja. J., Sutha Shobana, S. Arvindnarayan, R.R. Francis, **Rajesh Banu. J** Rijuta, G.S., V. Ashokkumar, Shashi K. B., Vinod Kumar, Gopalakrishnan. K. (2023). Lignocellulosic biomass conversion *via* greener pretreatment methods towards biorefinery applications. Bioresource Technology. Vol. 369. Article ID. 128328. (**SCI/IF-11.8**).
8. Kavitha. S, Rashmi Gondi, Yukesh Khanna, Gopalkrishnan Kumar, **Rajesh Banu. J***, A review on current advances in the energy and cost-effective pretreatments of algal biomass: enhancement in liquefaction and biofuel recovery. Bioresource Technology. Vol. 369. Article ID. 128383.(**SCI/IF-11.8**).
9. **Rajesh Banu.J***. Kavitha. S., Yukesh Khanna, Jayakodi, Gopalakrishnan Kumar, Vinay Kumar, Shashi kant Bhatia. (2023). Surfactant addition on disperser disintegration of water hyacinth: a new insight to overcome the inhibitory effect of lignin on methanogenesis energy and economic aspects. Sustainable Energy & Fuels. Vol. 7, 502-514 (**SCI/IF-6.4**).
10. Sundaramahalingam. M.A., Pavithra Vijaya chandran, **Rajesh Banu. J**, P. Sivashanmugam. (2022). Production of lipase from Priestia endophytica SSP strain and its potential application in deinking of printed paper. Biomass conversion and Biorefinery. Accepted (**SCIE/IF-4.1**). https://doi.org/10.1007/s13399-022-03556-0.
11. Phurba Tamang, Vinay Kumar.T, Neelam Gunjyal, Ali Mohammad, Rajesh Singh, Pradeep Kumar, Banafsha Ahmed, Pooja Tyagi, **Rajesh Banu**, Sunita Varjani, A.A. Kazmi. (2023) Free nitrous acid

(FNA) pretreatment enhances biomethanation of lignocellulosic agro- waste (Wheat Straw). Energy. Accepted. Vol. 264. Article ID. 126249. (**SCIE/IF-8.8**).

12. Vijetha, Geethu K, Rashmi Gondi, Preethi M, Kavitha S, Gopalakrishnan Kumar Poornachandar Gugulothu and **Rajesh Banu. J***. (2023). Amelioration in biogas production from waste-activated sludge through surfactant-coupled mechanical disintegration. Fermentation. Vol. 9 (57), (**SCIE/IF-5.1**).
13. Rinsha. P.V Rabia B, Dinesh Kumar. M, Rashmi Gondi, Kavitha S, Meganathan Kannan, Gopalakrishnan Kumar, Siham Y. **Rajesh Banu. J***. (2023). Synergistic Effect of Surfactant on Disperser Energy and liquefaction potential of macro algae (Ulva Intestinalis) for biofuel production. Fermentation. Vol. *9*(1), 55. (**SCIE/IF-5.1**).
14. M.A. Sundaramahalingam, C. Amrutha, **Rajesh Banu J,** K. Thirukumaran, S. Manibalan, M. Ashokkumar, P. Sivashanmugam. (2023) In-silico approach for enhancing innate lipid content of Yarrowia lipolytica, by blocking the Acyl CoA oxidase 1 enzyme, using various analogous compounds of lipids. Journal of Biomolecular Structure and Dynamics (TBSD). Vol. 41(2), 511-524. (**SCI/IF-5.2**).
15. Preethi, Gunasekaran, **Rajesh Banu. J***. (2023). Indexing energy and cost of the pretreatment for economically efficient bioenergy generation. Frontiers in Energy Research. DOI 10.3389/fenrg.2022.1060599. (**SCIE/IF-4.2**).
16. Suba, **Rajesh Banu. J**. (2023). Effect of organic loading on bioelectricity generation potential of dual chamber microbial fuel cell treating chocolaterie wastewater. Journal Environmental Progress and Sustainable Energy. https://doi.org/10.1002/ep.14081. (**SCIE/IF-2.8**).
17. Parvathy Eswari, Yukesh Kannah, Kavitha S, **Rajesh Banu J***. (2023). Recent insight into anaerobic digestion of lignocellulosic biomass for cost effective bioenergy generation. Eprime. Vol. 3, Article ID 100119
18. Shabarish, **Rajesh Banu J,** Sarmila V. Dinesh, Tamilarasan. (2023). Anaerobic fermentation of seaweed for enhanced biohydrogen production through combined sonic surfactant disintegration. Process optimization and Energy assessment. Biomass Conversion and Biorefinery. Accepted.
19. Subhisha, Amrutha S, Arathi S, Swathi V, Aiswarya. S, Anurup. G, **Rajesh Banu J,** Sunita.V, PoornaChandar.G, Amit. K.B. (2023). Renewable biofuels from microalgae: technical advances, limitations and economics. Environmental Technology Reviews. Vol. (12) 1, 18–36.
20. Preethi M, Gunasekaran M, **Rajesh Banu J***. (2023). Efficacious utilization of food waste for bioenergy generation through anaerobic digestion method. Processes. Vol. 11. 702. https://doi.org/10.3390/pr11030702
21. Ginni G, **Rajesh Banu J**, Adishkumar. (2023). Challenges and Emerging Trends in Advanced Oxidation Technologies and Integration of advanced oxidation processes with Biological Processes for Wastewater Treatment. Sustainability. Vol. 15, 4235
22. Kavitha S, Yukesh Kannah, Indranil Chattopadhyay, Siva shanmugam, Vinod Kumar, Gopalakrishnan Kumar, **Rajesh Banu J***. Development of integrated biorefinery system for bioconversion of lignocellulosic biomass to polyhydroxyalkanoates and biohydrogen. Sustainable Chemistry & Engineering. https://doi.org/10.1021/acssuschemeng.2c06350.
23. Snehya, Sundaramahalingam, **Rajesh banu J**. Sivashanmugam. (2023). Surfactant combined ultrasonic pre-treatment for the disintegration of Sargassum tennerimum (Marine macroalgae) and evaluation of its efficiency for the generation of biohydrogen. Bioenergy Research. https://doi.org/10.1007/s12155-023-10582-x
24. **Rajesh Banu.J** and Godwin S. (2023) A systematic review on plastic waste conversion for a circular economy: Recent trends and emerging technologies. Catalysis Science & Technology. Vol. 13, 2291.
25. Yogalakshmi, Mohamed Usman T.M, Kavitha. S, Saloni, Shivani, Adish Kumar and Rajesh Banu J. (2023). Lignocellulosic Biorefinery Technologies: A Perception into Recent Advances in Biomass Fractionation, Biorefineries, Economic Hurdles and Market Outlook. Fermentation. Vol. *9*(1), 238 (**SCIE/IF-5.1**).

26. **Rajesh Banu. J,** S. Kavitha, Yukesh Kannah, Vinay Kumar. T, Gopalakrishnan Kumar. (2023). Combined sodium citrate and ultrasonic pretreatment of waste activated sludge for cost effective production of biogas. Bioresource Technology. Vol. 376, Article ID 128857. (**SCI/IF-11.8**).
27. Anu.M, Merrylin J, **Rajesh Banu. J,** S.K Bhatia, Vinod Kumar, G. Piechota, Gopalakrishnan Kumar. (2023). A review on the pollution assessment of hazardous materials and the resultant biorefinery products in Palm oil mill effluent. Environmental Pollution. Vol. 328, Article ID. 121525.
28. Godvin Sharmila, Surya Prakash. S, Vinay Kumar.T, **Rajesh Banu J*** (2023). Microplastics as emergent contaminants in landfill leachate: Source, potential impact and remediation. Journal Environmental Management. Vol. 343, Article ID. 118240
29. Christiarani, Adishkumar. S **Rajesh Banu. J.** (2023). Sanitary landfill leachate treatment by aerated electrochemical Fenton process. Journal Environmental Management. Vol. 343, Article ID. 117698.
30. Rashmi. G, Akilla, Kavitha.S, Yukesh, Dinakar, Gopalakrishnan Kumar, **Rajesh Banu J*** (2023). Cost-effective bio-methanation via oxalic acid coupled sonication pretreatment of Gracilaria Salicornia. Biomass Bioenergy. Vol.175, August 2023, Article ID. 106876.
31. Sharmila.G and **Rajesh Banu J.** (2023). Review on food waste valorisation for bioplastic production towards a circular economy: sustainable approaches and biodegradability assessment. Sustainable Energy & Fuels. Accepted.
32. Sivaraman, **Rajesh Banu J.** Gopalakrishnan. (2023) Effect of thermal-CaO2 mediated exopolymer release on disperser pre-treatment for efficient anaerobic digestion. Environmental Research. Vol.235, June 2023, Article ID. 116635.
33. Arulazhagan P, Mamdoh T. J. and Rajesh **Banu J***. (2023) Biohydrogen production through energy efficient surfactant induced microwave pretreatment of macroalgae Ulva reticulata. Environmental Research. Vol.236, July 2023, Article ID. 116709.
34. Godvin.S, Vinay Kumar. T., Sunita.V and **Rajesh Banu J***. (2023). A review on the lignocellulosic derived biochar-based catalyst in wastewater remediation: Advanced treatment technologies and machine learning tools. Accepted in Bioresource Technology.
35. Rashmi.G, Akila, Kavitha.S., Yukesh.K, Goaplakrishnan, Siham and **Rajesh Banu J*.** (2023). Surfactant mediated sonic hydrolysis of marine macroalgae Ulva fasciata delile for biohydrogen production. Accepted in International Journal of Hydrogen Energy.
36. Rituja.D.S, Vinoth. P., Grzegorz. P., Bartłomiej. I., S. Shobana, J-H. Park, Ganesh,D.S, H-S. Shin, J. **Rajesh Banu J,** Vinod Kumar, Gopalakrishnan Kumar. (2023). Green chemical and hybrid enzymatic pretreatments for lignocellulosic biorefineries: Mechanism and challenges. Accepted in Bioresource Technology.

2022

37. Yogalakshmi, Poornima, Kavitha.S, Yukesh Khanna, Adish Kumar, Sivashanmugam, Gopalkrishnan Kumar, **Rajesh Banu J***. (2022) Lignocellulosic biomass-based pyrolysis: A comprehensive review. Chemosphere. Vol. 286, 131824 (**SCI/IF-8.9**).
38. **Rajesh Banu J***, Godwin Sharmila, Kanimozhli, Yukesh Khanna, Gunasekaran, Adish Kumar, Gopalkrishnan Kumar. (2022). Impact of novel deflocculant ZnO/Chitosan nanocomposite film in disperser pretreatment enhancing energy efficient anaerobic digestion: parameter assessment and cost exploration. Chemosphere. Volume 286 (3) 131835 (**SCI/IF-8.9**).
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1		**Rajesh Banu J** Kaliappan S Kavitha, S.	Bioenergy: Process, Technology and Viability	Lambert Academic publishing, (2019) Mauritius-71504,	9786139863297
2		Kaliappan S **Rajesh Banu J**	Biofuel Production using Anaerobic Digestion.	Springer, Singapore. (2022)	9789811937422

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1		**Rajesh Banu J** Kavitha, S. Yukesh Khanna	Cellulose-Fundamentals and Conversion into Biofuel and Useful Chemicals. 2023	IntechOpen, London SE1 9SG, United Kingdom	9781803552187
2		**Rajesh Banu J** Kavitha, S. Yukesh Khanna	Hazardous waste Management, 2022	IntechOpen, London SE1 9SG, United Kingdom	9781838818500
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1. M-02-Waste source and generation rates
2. M-11-Waste processing: Size reduction
3. M-12-Waste processing - Volume reduction
4. M-14- Recycling: Definition, types, collecting, sorting, rinsing, processing, recycling symbols & benefits
5. M-22- Biomedical Waste: Definition, Sources, classification, collection, Segregation, Treatment and disposal.

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3. **Rajesh Banu J*.** Bioenergy and biochemical production via integrated lignocellulose biorefinery. (2021). International conference on "3rd Virtual (Online) mode conference International Conference on Renewable Energy, Sustainable Environmental and Agricultural Technologies" organized by Maejo University, Chiang Mai, Thailand, 22th – 23th, December 2021
4. **Rajesh Banu J*.** Marine biorefinery. (2021). International conference on "Emerging Innovations and Entrepreneurship in Biotechnology (EIEBT-2021)" organized by the Department of Biotechnology, Manonmaniam Sundaranar University, Tirunelveli, 21st and 22nd December, 2021.

5. **Rajesh Banu J*.** Biofuel and bioenergy via circular econmy. (2021). 1st International Conference on Pollution Prevention and Clean Technologies (ICPPCT) & Taiwan-India Workshop on Emerging Environment and Energy Challenges of Technology Exchange. IIIT-D, New Delhi, India. December 6th to 7th, 2021.
6. **Rajesh Banu J*.** Bioenergy. (2021). Bioenergy. One Day Virtual Conference on Sustainable Environment, Organized by Department of Biotechnology, Faculty of Applied Sciences, AIMST University, 08100 Semeling, Kedah Darul Aman, Malaysia, 5th June 2021.
7. **Rajesh Banu J*.** Impact of disperser coupled surfactant pretreatment on lignocellulosic biomass for effective biofuel production: Energy and economic assessment. (2019). The 11th International Exergy, Energy and Environment symposium, SRM institute of Science and Technology, Chennai, 14th to 18th July, 2019.
8. **Rajesh Banu J*.** Dispersion aided surfactant disintegration of sea grass towards methanation, energy exploration and evaluation. 2019. International conference on smart city and green solutions. Francis Xavier Engineering college, Tirunelveli, March 30th 2019
9. **Rajesh Banu J*.** Application of enzyme secreting bacterial pretreatment for enhancing substrate hydrolysis and profitable biofuel generation. 2018. International conference on biotechnological research and innovation for sustainable development. BioSD, CSIR-IICT, Hyderabad.November 22nd - 25th 2018
10. **Rajesh Banu J*.** Effect of size reduction on parameters affection anaerobic biodegradability in high organic biomass. 2018. International conference on recent trends in multi-disciplinary engineering (ICRTMDR-2018). V.O.Chidambaram college, Tuticorin. April 19th &20th .2018
11. Dinesh Kumar and **Rajesh Banu J***. 2018. Bioelectricity Production in dual chambered MFC treating dye wastewater. International conference on Recent innovation in Civil Engineering and Management. Loyola Institute of Technology, Chennai, 22nd March, 2018.
12. Sokkanathan and **Rajesh Banu J***. 2018. A combined treatment approach for synthetic wastewater using hybrid upflow anaerobic reactor and solar photo Fenton process. International conference on Recent advancements in chemical, environmental and energy engineering (RACEE), SSN college of Engineering, Chennai, February, 15-16, 2018.
13. Yukesh Khanna and **Rajesh Banu J***. 2018. Ultrasonic mediated bioenergy recovery from microalgal biomass-energy balance analysis and biodegradability modelling. International conference on bioengineering on health and environment. Sathyabama Institute of Science and Technology, Chennai. January, 8-10, 2018.
14. K. Tamilarasan, M. Dinesh Kumar, P. Arulazhagan, &**Rajesh Banu J***, 2017. Surfactant assisted sonic pretreatment of waste activated sludge for methane production: anaerobic biodegradability studies, kinetics and cost analysis. International Conference on Emerging Trends in Biotechnology for Waste Conversion (ETBWC-2017) XIV Convention of the Biotech Research Society, CSIR-National Environmental Engineering Research Institute, Nagpur, India, October 8-10, 2017.
15. Tamilarasan K, Yukesh Kannah R, Rakesh M, &**Rajesh Banu J***, 2016 Energy generation from algal biomass through combinative pretreatment', International conference on advances in algal biotechnology. School of biosciences and technology, VIT university, Vellore, Tamil Nadu, India, August 10th -12th , 2016.
16. Kavitha S, Yukesh Kannah R&**Rajesh Banu J***, 2016,' Enhancement of biomethane production from microalgae by biological disintegration' International conference on advances in algal biotechnology. School of biosciences and technology, VIT University, Vellore, Tamil Nadu, India, August 10th -12th, 2016. (**Achieved best poster award**).
17. **Rajesh Banu J***, Gunasekaran, Tamilarasan. 2016. Energy efficient generation of biogas from waste sludge. IEEE sponsored international conference on Science, Technology, Engineering and Management (ICINSTEM-2016), Jeppiaar Engineering college, Tamilnadu, India, March 30-31st 2016.

18. **Rajesh Banu J***, Gunasekaran, Sokanathan 2016. Treatment of phenol rich retting pond wastewater in HUASB. IEEE sponsored international conference on Science, Technology, Engineering and Management (ICINSTEM-2016), Jeppiaar Engineering college, Tamilnadu, India, March 30-31st 2016.
19. Sokkanathan, Gunasekaran M, **Rajesh Banu J***, 2016, A combined treatment process of HUASB and AOP for phenol rich retting pond wastewater. 'International Conference on recent trends in structural and environmental engineering, University College of Engineering, Dindigul, Tamil Nadu, India, May 23th, 2016.
20. **Rajesh Banu J***2016, New approach to treat waste water- MBR, 'International Conference on recent trends in structural and environmental engineering, University College of Engineering, Dindigul, Tamil Nadu, India, May 23th, 2016.
21. Gopikumar, Ick-Tae Yeom, Adish Kumar &**Rajesh Banu J***(2013), Biologiclal pretreatment on solubilisation of waste activated sludge, International conference on Biotechnology for Innovative application. August, 10th-14th, 2013, Amritapuri, Kerala, India.
22. Uma Rani R, Adish Kumar S, Kaliappan. S. &**Rajesh Banu J***. (2011), Low temperature thermochemical pretreatment of dairy WAS for anaerobic digestion process, International conference on Thermal energy and environment,Kalasalingam university, Krishnankoil, Tamilnadu.March 24-26th 2011.
23. Merline, **Rajesh Banu J***, Adish Kumar, & Kaliappan. S. (2011), Enhancement of WAS reduction by lyzoyme secreting bacterium, International conference on Thermal energy and environment, International conference on Thermal energy and environment, Kalasalingam university, Krishnankoil, Tamilnadu. March 24-26th 2011.
24. Khac-Uan Do, **Rajesh Banu J***& Ick T. Yeom. (2011) Insights into the biological nitrogen removal from low strength domestic wastewater using a combined anoxic-aerobic membrane bioreactor. 3rd Regional Conference in Biotechnology, Hanoi, Vietnam.
25. **Rajesh Banu J**., Do Khac Uan., Gopi Kumar S., Vijay Prakash M., Lakshmi Anand Menon., kaliappan S., Ick-Tae Yeom (2011) "Nutrients Removal and Sludge Reduction from Domestic Wastewater Treatment in a Lab-Scale Hybrid System of Anaerobic Filter-Anoxic – Oxic and Sludge Disintegration (Afao-Sd)" IWA conference, 'Microbes in Wastewater And Waste Treatment, Bioremediation and Energy Production'. BITS, Goa, India, January, 24-27th 2011.
26. Gopi Kumar S., **Rajesh Banu J***, Kaliappan S & Ick-Tae Yeom.(2011)"Excess Sludge Reduction by Lysozyme Secreting Bacterial Pretreatment" IWA conference, 'Microbes in Wastewater And Waste Treatment, Bioremediation and Energy Production'. BITS, Goa, India January, 24-27th 2011.
27. **Rajesh Banu J**, Khac-Uan Do & Ick-Tae Yeom. Enhanced phosphorous recovery from EBPR sludge in the presence of condensed phosphate. IWA conference, GIST, Korea, December 2008
28. **Rajesh Banu J**, Khac-Uan Do & Ick-Tae Yeom. Effect of thermochemical sludge pretreatment on the performance of the partial sludge recycling A2/O- membrane bioreactor. IWA conference, GIST, Korea, December 2008.
29. Do Khac Uan, **Rajesh Banu J**, Ick-Tae Yeom, & Dang Kim Chi (2008) Evaluation of Simultaneous Phosphorus Removal Using Alum on Nitrification Rate in an AO Configuration. Workshop 13"Promoting the Environmental Industry Development in Vietnam", Hanoi University of Tech., No., 1 Dai Co Viet Rd., 15Hanoi, Vietnam, September 4-5th 2008.
30. **Rajesh Banu J**, Khac-Uan Do & Ick-Tae Yeom. Effect of alum on nitrification during simultaneous phosphorous removal in A/O Reactor, 1st International Conference on Technologies & Strategic Management of Sustainable Biosystems. July 6 – 9th, 2008, Perth, Western Australia.
31. **Rajesh Banu J**, Khac-Uan Do & Ick-Tae Yeom. Nutrient Removal In An A_2/O –MBR Reactor With Sludge Recycling. 1st International Conference on Technologies & Strategic Management of Sustainable Biosystems. July 6 – 9th, 2008, Perth, Western Australia

32. **Rajesh Banu J**, Khac-Uan Do & Ick-Tae Yeom. (2008) Municipal sludge reduction and management using sodium hydroxide and Lime Treatment, IWA conference, KCT College, Coimbatore, Tamil nadu, India, Febuary, 5-9th, 2008.
33. **Rajesh Banu J**, Kaliappan S, & Yeom Ick-Tae (2007) Effective utilisation of temperature and solar energy for the treatment of domestic waster in India, Proceedings of the 4th specialist conference on efficient use and management of urban water supply, Jeju island, Korea, May 21-23th 2007, pp. 1269-70

NATIONAL

1. Yukesh Khanna and**Rajesh Banu J***. 2018. Combined pretreatment of biosolids for improving the biodegradability and cost profitability. 3rdNational conference on Advances in Civil Engineering, VV college of Engineering, Tirunelveli, March, 3, 2018
2. Kavitha S &**Rajesh Banu J***,2016, Effect of chemo induced biological pretreatment of waste activated sludge on biogas production', National conferences on Environmental Rejuvenating Trends NCERT-2016, Anna University, Regional Campus, Tirunelveli, Tamil Nadu, India, April 19th, 2016.
3. Yukesh Kannah R&**Rajesh Banu J*,**2016, Effect of combinative disintegration of biomass for cost effective biofuel production', National conferences on Environmental Rejuvenating Trends NCERT-2016, Anna University, Regional Campus, Tirunelveli, Tamil Nadu, India, April 19th , 2016.
4. Tamilarasan K &**Rajesh Banu J*,**2016, Generation of energy using air cathode microbial fuel cells', National conferences on Environmental Rejuvenating Trends NCERT-2016, Anna University, Regional Campus, Tirunelveli, Tamil Nadu, India, April 19th , 2016.
5. Rajalakshmi R &**Rajesh Banu J***, Gunasekaran M, Ushani U, 2016. Excess sludge reduction by chemo-biological disintegration. National Conferences on advances in Civil Engineering. VV College of Engineering, Tisayanvilai, Tamil Nadu, India, April 1th, 2016.
6. Preethi M &**Rajesh Banu J***, Gunasekaran M, Kavitha S, 2016. Energy generation from waste activated sludge through biological pretreatment. National Conferences on advances in Civil Engineering, VV College of Engineering, Tisayanvilai, Tamil Nadu, India, April 1, 2016.
7. **Rajesh Banu J*** & Gunasekaran, 2016. Activated sludge disintegration- a review. National conference on advances in Civil engineering, VV College of Engineering, Tirunelveli, March, 22nd,2016.
8. **Rajesh Banu J*** & Gunasekaran, 2016. Energy generation from waste activated sludge through biological pretreatment. National conference on advances in Civil engineering, VV College of Engineering, Tirunelveli, March, 22nd, 2016.
9. Vinoth Kumar J, Vimala Ebenezer A, Kavitha S &**Rajesh Banu J***, 2015. Effect of disperser induced deflocculation on microwave disintegration waste activated sludge for biofuel production. National conference on modern trends in Civil engineering, Dr. Sivanthi Aditanar college of Engineering, Tiruchendur, Tamilnadu, India, April 24, 2015.
10. Jessin Brindha GM, Kavitha S & **Rajesh Banu J***, 2015,'Enhancement of aerobic biodegradability through ultrasonic mediated bacterial pretreatment', National conference on modern trends in Civil engineering, Dr. Sivanthi Aditanar college of Engineering, Tiruchendur, Tamilnadu, India, April 24th , 2015.
11. Kavitha S &**Rajesh Banu J***, 2015, 'Sludge reduction and biogas production by phase separated bacterial pretreatment', National conference on impact of climate change on environment and biodiversity, Sri Paramakalyani centre for excellence in environmental sciences, Manonmaniam Sundaranar University, Alwarkurichi, Tamilnadu, India, March 26th -27th , 2015.
12. Uma Rani, Adish Kumar, &**Rajesh Banu J***(2010) "Excess sludge solubilisation by low temperature thermochemical pretreatment". National conference on bioinformatics, biotechnology and bioengineering, Dharmapuri, December 17-18th 2010.

13. Sujatha, Uma Rani, Adish Kumar, &**Rajesh Banu J***(2010) "Effect of extra cellular polymerase substances on sludge solublising potential of lysozyme secreting bacteria" National conference on bioinformatics, biotechnology and bioengineering, Dharmapuri, December 17-18th 2010.
14. Nancy, Meryline, Adish Kumar, &**Rajesh Banu J*** (2010) "Excess sludge solubilisation by microwave pretreatment technology". National conference on bioinformatics, biotechnology and bioengineering, Dharmapuri, December 17-18th 2010.
15. Gopikumar S, Merrylin J, **Rajesh Banu J***& Kaliappan S (2010), "Excess Sludge Solubilisation Using Lysozyme Secreting Bacteria", National Symposium on Recent Developments in Environmental Science and Technology, Organised by SPK Centre of Excellence in Environmental Sciences, Manonmaniam Sundaranar University, Tamilnadu, August 19-20th 2010.
16. Logakanthi S, **Rajesh Banu J** & Manoharan. (1997), 'Factors affecting biodiversity of a semi -arid grazing land at the foothills of Western Ghats, Tamilnadu'. 17th Annual Sesison of Academy of Environmental Biology, Rohtak, India, November 1997.

TRAINING COURSES AD CONFERENCE/SEMINAR/WORKSHOP/

Sl. No.	Programme	Duration	Time Line
1	ISTE WORKSHOP – Aakash for Education	2 days	10 -11 Nov. 2012
2	ISTE WORKSHOP – Data Base management systems	2 Weeks	21-31 May 2013
3	QIP- advances in geotechnical and Geo-environmental Engineering-IIT-Bombay	1 week	24-28 June 2013.
4	ISTE WORKSHOP – Engineering Mechanics	2 Weeks	26 Nov-06 Dec. 2013.
5	QIP- Hydro climatic modelling and climate change impacts assessment-IIT-Bombay	1 week	30 June -04 July 2014
6	Training programme on understanding EIA: from screening to decision making, CSE, New Delhi	1 Week	January 27-31, 2015.
7	ISTE-STEEP On Pedagogy for effective use of ICT in Engineering Education	2 weeks	03 Aug.-Sep. 2017
8	Use of ICT in Education for Online and Blended Learning	4 Week	14 Sep. -12 Oct. 2017
9	Two days national workshop on environmental pollution and Assessment. Manonmanium Sundaranar University, Alwarkurichi.	2 days	01-02 Jan. 2017.
10	One day national level workshop on Open Geospatial Consortium	1 day	7 March, 2018
11	One week Faculty Development Workshop on Design of biological treatment systems, NIT Warangal,	1 Week	9-13 April 2018
12	One month faculty induction programme, Coimbatore Institute of Technology, Tamilnadu.	1 month	22 April-19 May,2019
13	Basic Training in Fecal Sludge and Septage Management (FSSM). Anil Agarwal Environment Training Institute, Nimli, Rajasthan	1 Week	22-26 July 2019.

INVITED LECTURES/WORKSHOPS/SYMPOSIA

2023

1. Invited talk on the topic "Phase separated pretreatment A way to achieve economically feasible sludge reduction in WWTP" In: Dr. A.L. Mudaliar Endowment Lecture and International seminar on sludge pretreatment technologies, Organized by Center for Environmental Studies, Anna University, Chennai 600025, 18th May 2023.
2. Invited talk on the topic "Advanced wastewater treatment" In: one day national seminar at Department of Environmental Science, Periyar University, Salem, Tamilnadu, 23rd March 2023.
3. Invited lecturer on the topic "bioremediation of environmental pollutant" organized by Department of Microbiology & PG Department of Applied Microbiology, Dr. MGR - Janaki college of Arts and Science for Women, R A Puram, Chennai, Tamil Nadu, 8th February, 2023

2022

4. Invited talk on the topic "biomass to bioenergy" In: National seminar on synthetic biological approaches for environment sustainability" Organized by Department of botany, Holy cross college, Nagercovil, Tamilnadu on 11-11-2022.
5. Invited talk on the topic "Application of Nanotechnology in Solving Environmental Problems.", In: UGC-HRDC sponsored Online Refresher Course (from 11.10.2022 to 24.10.2022) in Nanobiochemistry and Bioinformatics organized by the (Academic Staff College), Osmania University, Hyderabad. on 18th October 2022.
6. Invited talk on the topic "Solid waste management", In: RUSA 2.0 Sponsored, two days national workshop on emerging technologies and best practices in solid waste management" Organized by Department of Civil Engineering, Annamalai University, Tamil Nadu. 17th August 2022.
7. Invited lecturer for PG students belongs to M.E Environmental, Structural and Infrastructure Engineering on the topic of "How to write a scientific paper" in Department of Civil Engineering, Thyagarajar College of Engineering, Madurai on 3rd June 2022.
8. Resource Person and delivered lecture on the topic "Bioenergy from waste" In: UGC refreshed course in botany" Organized by UGC-HRDC, Bharathiyar University, Coimbatore, Tamil Nadu. 08th June 2022.
9. Invited talk on the topic "Algal biorefinery" In: SICI sponsored online workshop on "**Next Gen Fuels: A** Sustainable Approach (16-20 March)" Organized by Department of Chemical Engineering, NIT Tiruchirappalli, 18th March 2022.
10. Resource person and delivered lecturer on the topic "Sustainable biofuel production", In: UGC-Sponsored Online Refresher Course in Environment & Sustainable Development (Multidisciplinary), organized by UGC-HRDC, Bharathiyar University, Coimbatore, Tamil Nadu. 05th February 2022.

2021

11. Resource person and delivered lecture on the topic "Recent advances in nutrient removal of domestic wastewater treatment systems" In: Tools and techniques in environmental quality analysis – Under SDC – RUSA phase II" organized by Department of Environmental Science, Bharathiyar University, Coimbatore, Tamil Nadu. 07th February 2021.
12. Resource person and delivered lecture on the topic "Bioenergy from waste biomass" In: webinar on "Awareness on Energy conservation" Organized by Department of Electrical Engineering, Francis Xavier Engineering college, Tirunelveli, Tamil Nadu. 11th February 2021.
13. Resource Person and delived lecture on the topic "Bioenergy", In: UGC-Sponsored Online Refresher Course in Environmental Sciences (Multidisciplinary), conducted by the UGC-Human Resource Development Centre, Bharathidasan University, Tiruchirappalli for University and College Teachers on Google Meet platform. 04th March 2021.
14. Resource Person and delivered lecture on the topic "biomass to bioenergy", In: National seminar on bioenergy and biodiversity conservation for sustainable future, Organized by Department of

Biotechnology, Karpaga vinayaga college of Engineering and Technology, Padalam 603308, Tamil Nadu on 23rd March 2021.

15. Resource person - 26.04.2021 an on AICTE sponsored online STTP program (Phase - I) on "A Beeline for Circular Economy through Sustainable Waste Management (Phase-I)" organized by Department of Civil Engineering, K. S. R. College of Engineering Tiruchengode during April 24 - May 1, 2021.
16. Resource Person and handled the session titled ' Role of Alternative Energy Resources in Combating Climate Change ' on 04.05.2021 in the UGC STRIDE Virtual 10 days FDP (26th April to 6th May 2021) on MITIGATING CLIMATECHANGE organized by the Central University of Tamil Nadu, Thiruvarur under the UGC STRIDE project.
17. Invited talk through online "Reclamation of retting pond water through combinative treatment" In: First 1st International Workshop on Eco-Smart Water Management, Organized by Department of Civil and Environmental Engineering, Sungkyunkwan University, South Kora. December 6th 2021.
18. Invited talk at the One Day Virtual Conference on Sustainable Environment in Conjunction with World Environment Day 2021 held on 5 June 2021 (Saturday), Organized by Department of Biotechnology, Faculty of Applied Sciences, AIMST University, 08100 Semeling, Kedah Darul Aman, Malaysia.
19. Invited talk on in the International conference on "Emerging Innovations and Entrepreneurship in Biotechnology (EIEBT-2021)" organized by the Department of Biotechnology, Manonmaniam Sundaranar University, Tirunelveli on 21st and 22nd December, 2021.
20. Invited lecture on the topic, "BIOFUELS AND BIOREFINERY" on 28thOctober,2021(Thursday)in the five-day workshop (online) on "Bioremediation: Photo & Electrochemical Bioreactors"from October 25th-29th, 2021, organized by Department of Biotechnology, National Institute of Technology-Andhra Pradesh.
21. Invited lecture on the topic, "Bioenergy from waste" In: UGC-HRDC-Refresher course on Environmental Science and Technology" November 15th-30th, 2021, organized by JNV University, Jodhpur, Rajasthan. 18th November 2021.

2020

22. Invited talk on "Innovation in environmental technology for greener environment" In: Refresher course in Life Sciences, Organized by UGC–HRDC, Osmania University, Hyderabad. 7th October 2020
23. Delivered webinar on "Role of biotechnology in solving environmental problems" organized by International consortium of water researchers, on 22nd August 2020.
24. Delivered Invited talk on "Recent Advances in Anaerobic Digestion of Organic Wastes " In: One Week Virtual Short Term Training Program on "Practical Aspects of Civil Engineering", from 3rd August 2020 to 8th August 2020, organized by the Department of Civil Engineering, Sethu Institute of Technology, Virudhunagar, Tamil Nadu, in association with ISTE, New Delhi. 7th August 2020.
25. Delivered Invited talk on "Role of Biotechnology in solving environmental problems" for Seven days online National Level Faculty Development Program (3 - 9 August 2020) on "Innovations in Biotechnology as Life saving Prospectives" Organized by KARPAGAM ACADEMY OF HIGHER EDUCATION (Deemed to be University) Coimbatore – 21.
26. Invited talk on the topic of "biofuel generation from waste biomass" In one day online seminar, organized by Department of Civil Engineering, University college of Engineering – Nagercovil, Tamilnadu, India on 29th July 2020.
27. Delivered a Technical lecture on "Membrane bioreactor: An Advanced wastewater Treatment System" In: Six days national level webinar series, Organized by Department of Civil Engineering, Government college of Engineering, Tirunelveli, Tamilnadu on 25th July, 2020.
28. Delivered Invited lecture on "Biotransformation of solid waste from wastewater treatment plant into biofuel" In: AICTE sponsored online one week STTP series-1 on Industrial and municipal solid waste management for Green India, Organized by PSR Engineering college, Sivakasi, 626140, Tamilnadu on 24th July 2020.

29. Invited lecture on "Recent advances in nutrient removal of domestic wastewater treatment systems" In: Two Day National Webinar on Recent Advances in Wastewater Treatment (21stand 22ndJuly 2020) organized by Department of Environmental Sciences, Bharathiar University, Coimbatore -641046. 22nd July 2020.

2019

30. Resource person in one day seminar on "3rd generation waste biomass degradation and solid waste management using GIS". Dept. Civil Engineering, Vel Tech Rangarajan Dr. Sagunthala R&D Institute of Science and Technology, Avadi, Chennai, 10th October, 2019.
31. Resource person in Workshop on Bioenergy, biofuel and biorefining. National Institute of Technology, Trichirappali, 15thJune 2019.
32. Chairperson for International conference on Recent Trends in Mechanical and Civil Engineering (ICRTMC,18). PET Engineering College, vallioor, Tamilnadu. 4th April, 2018.
33. Delivered invited talk on "Advances in biological wastewater treatment" National conference, Manonanium Sundaranar University, Tirunelveli, January, 19, 2018.
34. Delivered an invited talk on "Advanced wastewater treatment" Bharathiyar University, Coimbatore – October, 30th 2017.
35. Delivered an invited talk on "Bio mining – An Integrated approach Two days national conference on Biotechnology and sustainable development. Annai Velankanni College, tholayavattam, Kanyakumari – October, 14th 2017.
36. Delivered an invited talk on "ADVANCED WASTEWATER TREATMENT – NUTRIENT REMOVAL".One week TEQIP sponsored workshop on current research scenarios in energy, Environment and Chemical Engineering, NIT, Tiruchi – February, 01st 2017.
37. Acted as Chairperson for Two days national workshop on environmental pollution and Assessment. SPKCES, Manonmanium Sundaranar University, Alwarkurichi – January 01st, 2017.
38. Delivered an invited talk on "ENERGY FROM BIOMASS". One day workshop on an insight into the solar and bioenergy application under TEQIP – NIT, Trichy – November, 2016.
39. Acted as Chief Guest and Judge for National level Technical symposium, Thamirabharani Engineering College, Tirunelveli – September 12th, 2016.
40. Acted as Resource person for International conference on innovative trends in Mechanical and Civil Engineering, PET Engineering College, Vallioor. – June 10th, 2016.
41. Delivered an invited talk on "Current development in microbial fuel cell". One day carrier oriented seminar on advances in environmental Sciences – SPKCES, Manonmanium Sundaranar University– March 18th, 2016.
42. Acted as Chief Guest and delivered an invited talk on "Recent updates in wastewater treatment system". Two days workshop on Research based project in civil engineering. Kalasalingam University, Krishnankovil. March 04th, 2016.
43. Acted as Chairperson for National conference on impact of climate change on Environment and biodiversity, Manonmanium Sundaranar University, Alwarkurichi – March26th, 2015.
44. Delivered an invited talk on "An overview of anaerobic digestion ". NCETC – April 18th, 2012
45. Delivered an invited talk on "Bioenergy from solid waste "National seminar on innovative journey towards conservation of environment – September 27th, 2012.