Vaishakh Nair Ph.D.

Assistant Professor,
Department of Chemical Engineering, NITK Surathkal

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Professional Appointments

Assistant Professor in Chemical Engineering	Department of Chemical Engineering, NITK Surathkal, India September **2019**- **Present**
Postdoctoral Fellow Host: Prof. Juan Carlos Colmenares *Research Focus: Nanoengineering of thin layers of semiconductor photocatalysts in a microreactor environment for lignin-based model compounds valorization*	Institute of Physical Chemistry Polish Academy of Sciences Kasprzaka 44/52, PL-01 224 Warsaw, Poland March **2017**- February **2019**
Assistant Professor (on-contract) in Chemical Engineering	Department of Chemical Engineering NIT Calicut, India December **2015**-December **2016** July **2010**-December **2010**

Education

PhD in Chemical Engineering Advisor : Prof. R. Vinu *Thesis Title: Valorization of lignin and bioresidues via different techniques including catalytic fast pyrolysis, photocatalysis, functionalization and thermochemical activation*	Indian Institute of Technology Madras, July **2016**
Masters in Nanotechnology Advisor: Prof. N. Sandhyarani *Thesis Title: Conversion of commercial polyethylene into environmental form using nanotechnology*	National Institute of Technology Calicut, October **2010**
Bachelors in Chemical Engineering	Government Engineering College Calicut, June **2008**

Awards and Fellowships

Sonata-Bis project funded by National Science Centre, Poland	**2017-2019**
GE Ecomagination Excellence Award for the best Ph.D. Thesis, India	**2016**
Research Award instituted by Indian Institute of Technology, Madras, India	**2015**
Gold Medal in the 40th All India Students Design Competition instituted by the National Design and Research Forum, Institution of Engineers (India), India	**2009**
GATE Fellowship, India	**2008**

Scientific Publication

(34) Veda Prakash, **Vaishakh Nair**, Lipika Parida, Antibacterial studies of Vitamin E Encapsulated Lemongrass Oil Nanoemulsions against Gram-negative and Gram-positive Bacteria, The Canadian Journal of Chemical Engineering, 2025, DOI: 10.1002/cjce.25610

(33) Soumya Koippully Manikandan, Dharshini Jenifer. A, Nisarga K. Gowda, **Vaishakh Nair**, Rami Al-Ruzouq , Mohamed Barakat A. Gibril , Fouad Lamghari , John Klironomos, Maryam Al Hmoudi , Mohamed Sheteiwy , Ali El-Keblawy , Advancing date palm cultivation in the Arabian Peninsula and beyond: Addressing stress tolerance, genetic diversity, and sustainable practices, Agricultural Water Management, 2025, 307, 109242. DOI: 10.1016/j.agwat.2024.109242

(32) Aparna Singh, Soumya Koippully Manikandan, **Vaishakh Nair,** Mechanistic Studies on Bioremediation of Dye using Aeromonas veronii Immobilized Peanut Shell Biochar, Environmental Research, 2024, DOI: 10.1016/j.envres.2024.119908

(31) Abhayasimha K C, Chinta Sankar Rao, **Vaishakh Nair**, Combination of ensemble machine learning models in photocatalytic studies using nanoTiO_2-lignin based biochar, *Chemosphere,* 2024, 352, 141326 DOI: 10.1016/j.chemosphere.2024.141326 (I.F – 8.8)

(30) Soumya Koippully Manikandan, Ayesha Mariyam, Nisarga Gowda, Aparna Singh, **Vaishakh Nair**, Mechanistic Understanding of Biochar-Bacteria System for Enhanced Chlorpyrifos Bioremediation in Water and Soil Medium, *Chemical Engineering Journal*, 2024,483, 149119 doi.org/10.1016/j.cej.2024.149119 (I.F – 15.1)

(29) Pratyasha Pallavi, Soumya Koippully Manikandan and **Vaishakh Nair** Optimization and mechanistic study on bioremediation of Cr (VI) using microbial cell immobilized sugarcane bagasse biochar, *Journal of Water Process Engineering*, 2024, 58, 104859 doi.org/10.1016/j.jwpe.2024.104859 (I.F – 7.0)

(28) Soumya Koippully Manikandan and **Vaishakh Nair** Developing a biocatalyst showcasing the synergistic effect of rice husk biochar and bacterial cell for the removal of heavy metals, *New Journal of Chemistry, 2024, 48, 416*, DOI: 10.1039/d3nj90180g (I.F – 3.3)

(27) Suchith Chellappan, Aparna Kallingal, Sajith Vandana, **Vaishakh Nair**, Chingakham Chinglenthoia, Methyl orange dye adsorbed biochar as a potential brønsted acid catalyst for microwave assisted biodiesel production, *Environmental Science and Pollution Research,* 2023,30, 125158–125164 DOI: 10.1007/s11356-023-28269-3 (I.F – 5.4)

(26) Soumya Koippully Manikandan and **Vaishakh Nair**, Dual-role of coconut shell biochar as a soil enhancer and catalyst support in bioremediation, *Biomass Conversion and Biorefinery*, 2023, doi.org/10.1007/s13399-023-04079-y (I.F – 4.0)

(25) Anuradha Shilli, Soumya Koippully Manikandan and **Vaishakh Nair**, Application of box-behnken design in optimization of the Okra (Abelmoschus esculentus L.) plant growth in loamy sand soil, *Journal of Soil Science and Plant Nutrition*, 2023, doi.org/10.1007/s42729-023-01219-1 (I.F – 3.9)

(24) Amit Kumar Singh, Dimitrios A. Giannakoudakis, Michael Arkas, Konstantinos S. Triantafyllidis and **Vaishakh Nair**, Composites of Lignin-based Biochar with BiOCl for photocatalytic water treatment: RSM studies for process optimization, *Nanomaterials*, 2023, 13, 735, doi.org/10.3390/nano13040735 (I.F - 5.3)

(23) Soumya Koippully Manikandan, Pratyasha Pallavi, Shetty K. B. Sujatha, Debalina Bhattacharjee, Dimitrios A. Giannakoudakis, Ioannis A. Katsoyiannis and **Vaishakh Nair**, Effective usage of biochar and microorganism for removal of heavy metal ions and pesticides, *Molecules*, 2023, doi.org/10.3390/molecules28020719 (I.F – 4.6)

(22) Soumya Koippully Manikandan and **Vaishakh Nair**, Pseudomonas stutzeri Immobilized Sawdust Biochar for

Nickel Ion Removal, *Catalysts*, 2022, 12, 1495, doi.org/10.3390/catal12121495 (I.F – 3.9)

(21) Soumya Koippully Manikandan, Dimitrios A. Giannakoudakis, Jovana R Prekodravac, **Vaishakh Nair** and Juan Carlos Colmenares, Role of Catalyst Supports in Biocatalysis, *Journal of Chemical Technology and Biotechnology*, 2022, doi.org/10.1002/jctb.7177 (I.F – 3.4)

(20) Florence Ruth Noronha, Soumya Koippully Manikandan and **Vaishakh Nair**, Role of coconut shell biochar and earthworm (Eudrilus euginea) in bioremediation and palak spinach (Spinacia oleracea L.) growth in cadmium-contaminated soil, *Journal of Environmental Management,* 2022, 302, 114057. doi.org/10.1016/j.jenvman.2021.114057 (I.F – 8.7)

(19) K Ankita Rao, T P Krishna Murthy and **Vaishakh Nair**, Remediation Analysis of Azo and Anthraquinone dye by Modified Low Sulphonated Lignin, *Research Journal of Chemistry and Environment*, 2022, 26(3); 8-16. doi.org/10.25303/2603rjce0816 (I.F – 0.24)

(18) Dimitrios A.Giannakoudakis, Abdul Qayyum, **Vaishakh Nair**, Ayesha Khan, Swaraj R. Pradhan, Jovana Prekodravac, Kyriazis Rekos, Alec P. LaGrow, Oleksandr Bondarchuk, Dariusz Łomot, Konstantinos S.Triantafyllidis and Juan C. Colmenares, Ultrasound-assisted decoration of CuO_x nanoclusters on TiO_2 nanoparticles for additives free photocatalytic hydrogen production and biomass valorization by selective oxidation, *Molecular Catalysis*, 2021, 514, 111664. doi.org/10.1016/j.mcat.2021.111664 (I.F – 5.09)

(17) Juan C. Colmenares, Swaraj R. Pradhan, **Vaishakh Nair**, Dimitrios A. Giannakoudakis and Dmytro Lisovytskiy, Design and development of TiO_2 coated microflow reactor for photocatalytic partial oxidation of benzyl alcohol, *Molecular Catalysis*, 2020, 486, 110884. doi.org/10.1016/j.mcat.2020.110884 (I.F – 5.09)

(16) Zoi Christina Kampouraki, Dimitrios A. Giannakoudakis, **Vaishakh Nair**, Ahmad Hosseini-Bandegharaei, Juan Carlos Colmenares, and Eleni A. Deliyanni, Metal Organic Frameworks as Desulfurization Adsorbents of DBT and 4,6-DMDBT from Fuels, *Molecules*, 2019, 24, 4525; doi:10.3390/molecules24244525 (I.F – 4.92)

(15) Dimitrios A. Giannakoudakis, **Vaishakh Nair**, Ayesha Khan, Eleni A. Deliyanni, Juan Carlos Colmenares, and Konstantinos S. Triantafyllidis, Additive-free photo-assisted selective partial oxidation at ambient conditions of 5-hydroxymethylfurfural by manganese (IV) oxide nanorods, *Applied Catalysis B: Environmental*, 2019, 256, 117803, doi: 10.1016/j.apcatb.2019.117803. (I.F – 24.32)

(14) **Vaishakh Nair**, Mario J. Muñoz-Batista, Marcos Fernández-García, Rafael Luque and Juan Carlos Colmenares, Thermo-photo-catalysis: environmental and energy applications, *ChemSusChem*, 2019, 12, 2098-2116. doi.org/10.1002/cssc.201900175 (I.F – 9.14)

(13) Suchith Chellappan, Chingakham Ch., **Vaishakh Nair**, Sajith.V and Aparna. K, Microwave assisted biodiesel production using a novel Brønsted acid catalyst based on nanomagnetic biocomposite, *Fuel*, 2019, 246, 268–276. doi.org/10.1016/j.fuel.2019.02.104 (I.F – 8.04)

(12) **Vaishakh Nair**, Juan Carlos Colmenares, and Dmytro Lisovytskiy, Ultrasound assisted ZnO coating in microflow based photoreactor for selective oxidation of benzyl alcohol to benzaldehyde, *Green Chemistry*, 2019,21, 1241-1246. doi.org/10.1039/C8GC03131B (I.F – 11.03)

(11) Ayesha Khan, **Vaishakh Nair**, Juan Carlos Colmenares, and Roger Gläser, Lignin-based composite materials for photocatalysis and photovoltaics, *Topics in Current Chemistry*, 2018, 364,1-31. doi.org/10.1007/s41061-018-0198-z (I.F – 8.91)

(10) Suchith Chellappan,**Vaishakh Nair**, Sajith V and Aparna K, Synthesis, optimization and characterization of biochar based catalyst from sawdust for simultaneous esterification and transesterification, *Chinese Journal of Chemical Engineering*, 2018, 26, 2654-2663. doi.org/10.1016/j.cjche.2018.02.034 (I.F – 3.89)

(9) Suchith Chellappan,**Vaishakh Nair**, Sajith V and Aparna K, Experimental validation of biochar based green Bronsted acid catalysts for simultaneous esterification and transesterification in biodiesel production, *Bioresource Technology Reports*, 2018, 2,38-44. doi.org/10.1016/j.biteb.2018.04.002 (I.F – Nil)

(8) Juan Carlos Colmenares, **Vaishakh Nair**, Ewelina Kuna and Dariusz Łomot, Development of photocatalyst coated fluoropolymer based microreactor using ultrasound for water remediation, *Ultrasonics Sonochemistry*, 2018, 41, 297-302. doi.org/10.1016/j.ultsonch.2017.09.053 (I.F – 9.34)

(7) Juan Carlos Colmenares, Rajender S. Varma and **Vaishakh Nair**, Selective photocatalysis of lignin-inspired chemicals by integrating hybrid nanocatalysis in microfluidic reactors, *Chemical Society Reviews*, 2017, 46, 6675-6686. doi.org/10.1039/C7CS00257B (*Selected for back cover image*) (I.F – 60.62)

(6) **Vaishakh Nair** and R. Vinu, Peroxide-assisted microwave activated pyrolysis biochars for the removal of dyes from wastewater, *Bioresource Technology*, 2016, 216, 511-519, doi.org/10.1016/j.biortech.2016.05.070 (I.F – 11.89)

(5) **Vaishakh Nair** and R. Vinu, Production of guaiacols via catalytic fast pyrolysis of alkali lignin using titania, zirconia and ceria, *Journal of Analytical Applied Pyrolysis*, 2016,119, 31-39, doi.org/10.1016/j.jaap.2016.03.020 (I.F – 6.44)

(4) **Vaishakh Nair**, Pyali Dhar and R. Vinu, Production of phenolics via photocatalysis of ball milled lignin-TiO_2 mixtures in aqueous suspension, *RSC Advances*, 2016, 6, 18204-18216, doi.org/10.1039/c5ra25954a (I.F – 4.04)

(3) Debalina Bhattacharjee, **Vaishakh Nair**, Jagananatham Mani, Vasanthakumar Kombamuthu, Karthiselva N Sengottaian, R. Vinu, Prathap Haridoss and Srinivasa Bhakshi, Effect of different nano-carbon reinforcements on microstructure and properties of TiO_2 composites prepared by spark plasma sintering, *Ceramics International,* 2016,42, 14266-14277, doi.org/10.1016/j.ceramint.2016.06.057 (I.F – 5.53)

(2) **Vaishakh Nair**, Ajithesh Panigrahy and R. Vinu, Development of novel chitosan-lignin composites for adsorption of dyes and metal ions from wastewater, *Chemical Engineering Journal*, 2014, 254, 491-502, doi.org/10.1016/j.cej.2014.05.045 (I.F – 16.74)

(1) Reny Thankam Thomas*, **Vaishakh Nair*** and N. Sandhyarani, TiO_2 nanoparticle assisted solid phase photocatalytic degradation of polythene film: A mechanistic investigation, *Colloids and Surfaces A: Physicochemical and Engineering Aspects*, 2013, 422, 1-9, doi.org/10.1016/j.colsurfa.2013.01.017 (* denotes equal author contribution) (I.F – 5.52)

Book Chapter

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(9) Vaishakh Nair, Aparna Singh, Nisarga K. Gowda, Bioprocesses for Sustainable Management of Mine Waste in Contaminated Environmental Matrices, Sustainable Management of Mining Waste and Tailings A Circular Economy Approach, 2024, Taylor and Franics CRC Press, 33, doi.org/10.1201/9781003442455

(8) Pratyasha Pallavi, Soumya Koippully Manikandan, **Vaishakh Nair**, Biocatalytic Remediation of Industrial Pollutants, *Green Technologies for Industrial Waste Remediation*, 2023, Springer, 247-270, doi.org/10.1007/978-3-031-46858-2

(7) K. Ankita Rao, **Vaishakh Nair**, G.Divyashri, T. P.Krishna Murthy, Priyadrashini Dey, K. Samrat, M. N.Chandraprabha, R. Hari Krishna, Role of Lignocellulosic Waste in Biochar Production for Adsorptive Removal of Pollutants from Wastewater, *Advanced and Innovative Approaches of Environmental Biotechnology in Industrial Wastewater Treatment,* 2023*,* Springer, 221-238, doi.org/10.1007/978-981-99-2598-8_11

(6) Jovana Prekodravac, Dimitrios A Giannakoudakis, Juan Carlos Colmenares, **Vaishakh Nair**, Bojana Vasiljević, Dejan Kepić, Black titania: Turning the surface chemistry toward visible-light absorption, (photo) remediation of hazardous organics and H_2 production, *Novel Materials for Environmental Remediation Applications*, 2023, Elsevier, 361-398, doi.org/10.1016/B978-0-323-91894-7.00010-4.

(5) Ioannis Anastopoulos, Georgios Giannopoulos, Azharul Islam, Joshua O. Ighalo, Felicitas U. Iwuchukwu, Ioannis Pashalidis, Dimirios Kalderis, Dimitrios A. Giannakoudakis, **Vaishakh Nair** and Eder C. Lima, Potential environmental applications of *Hellianthus annuum* (sunflower) residue - based adsorbents for dye removal in (waste)waters, *Biomass-Derived Materials for Environmental Applications*, 2022, Elsevier, 307-318.

doi.org/10.1016/B978-0-323-91914-2.00008-8

(4) Soumya Koippully Manikandan, Anuradha, Florence Ruth Noronha and **Vaishakh Nair**, Soil Toxicity and Remediation Techniques, *Pesticides Remediation Technologies from Water and Wastewater*, 2022, Elsevier, 411-429. doi.org/10.1016/B978-0-323-90893-1.00019-2

(3) Jovana R. Prekodravac, **Vaishakh Nair**, Dimitrios A. Giannakoudakis, Hsien-Yi Hsu, Juan C. Colmenares, Homogeneous photocatalysts immobilized on polymeric supports: Environmental and chemical synthesis applications, *Materials Science in Photocatalysis*, 2021, Elsevier, 575-588, doi.org/10.1016/B978-0-12-821859-4.00002-7

(2) Jananisree Ganesan, Madhangi Priyadharshini Gandhi, Maheswari Nagendran, Bin Li, **Vaishakh Nair**, and Padmanaban Velayudhaperumal Chellam, Functional Properties of Nanoporous Membranes for the Desalination of Water, *Environmental Nanotechnology Volume 4*, 2020, Springer, doi.org/10.1007/978-3-030-26668-4_4

(1) R. Vinu, D.K.Ojha and **Vaishakh Nair**, Polymer pyrolysis for resource recovery. *Elsevier Reference Module in Chemistry, Molecular Sciences and Chemical Engineering,* 2016, Elsevier, http://dx.doi.org/10.1016/B978-0-12-409547-2.11641-5.

Conference

(21) Kannake Tejaswini Yadao, Ramesh Potnuri, Chinta Sankar Rao and **Vaishakh Nair**, Catalytic Microwave-assisted Pyrolysis of Polyethylene in Presence of Lignin based Biochar', International Indo-Japan workshop on Frontiers in Analytical and Applied Pyrolysis for Energy and Environment (FAAPEE) 2024, February 26-27, 2024, IIT Madras, Chennai, Tamil Nadu, India.

(20) Soumya Koippully Manikandan and Vaishakh Nair, "A sustainable approach to heavy metal wastewater remediation through biochar-bacteria synergy", International Conference on Desalination, Environment and Sustainability IDEAS 2024, January 22-23, 2024, Abu Dhabi, UAE.

(19) Aparna Singh, Soumya Koippully Manikandan and Vaishakh Nair, "Harnessing Microbial cell -Biochar Synergy for Eco-Friendly Wastewater Treatment", The International Conference on Desalination, Environment and Sustainability IDEAS 2024, January 22-23, 2024, Abu Dhabi, UAE.

(18) Aparna Singh, Soumya Koippully Manikandan and Vaishakh Nair, "Harnessing Microbial cell -Biochar Synergy for Eco-Friendly Wastewater Treatment", International Conference on Separation and Purification Technologies ICSPT 2023, December 07-08, 2023, IIT Patna, India.

(17) Soumya Koippully Manikandan and **Vaishakh Nair**, "Biodegradation of chlorpyrifos by *Aeromonas veronii* immobilized rice husk biochar," 4th International Conference on Bioresource Technology for Bioenergy, Bioproducts & Environmental Sustainability, May 14–17, 2023, Lake Garda, Italy.

(16) Krishna Subhash and **Vaishakh Nair**, " Sunlight assisted Photocatalytic Degradation of Polyethylene Incorporated TiO_2- biochar based Photocatalyst", International Hybrid Conference on Nano Structured Materials and Polymers (ICNP 2023) , May 12-14, 2023, Mahatma Gandhi University ,Kerala, India.

(15) Anuj Kumar and **Vaishakh Nair**, "Photocatalytic degradation of dye and waste engine oil contaminated water", International Hybrid Conference on Nanostructured Materials and Polymers (ICNP 2023), May 12-14, 2023, Mahatma Gandhi University ,Kottayam, Kerala, India

(14) Abhayasimha K C and **Vaishakh Nair**, "Machine learning aided photocatalytic dye degradation using biochar based photocatalyst", CHEMCON 2022, December 27-30,2022, Harcourt Butler Technical University, Kanpur, India.

(13) Krishna Sreekumar, Soumya Koippully Manikandan and **Vaishakh Nair**, "A novel approach on Low density polythene degradation using microbes immobilised on biochar", International conference on Biotechnology, Sustainable Bioresources and Bioeconomy (BSBB-2022), December 7 - 11, 2022, Department of Bioscience and Biotech engineering, IIT Guwahati.

(12) Soumya Koippully Manikandan and **Vaishakh Nair**, "Optimization and mechanistic study of cadmium removal using novel *Pseudomonas* immobilized sawdust biochar," International Conference on Biotechnology for Sustainable Bioresources and Bioeconomy (BSBB-2022), December 07–11, 2022, Department of Biosciences and Bioengineering, IIT Guwahati, India.

(11) Bansi Gandhi and **Vaishakh Nair**, "Preparation and application of lignin based activated carbon in energy storage", International Conference on Chemical Engineering: Enabiing Transition Towards Sustainable Future,

September 08-10,2022, Department of Chemical Engineering, IIT Roorkee, India.

(10) Soumya Koippully Manikandan and **Vaishakh Nair**, "Effect of coconut shell biochar on tomato (Solanum lycopersicum L.) growth in lateritic loam and clay soil", International Conference on Chemical Engineering: Enabiing Transition Towards Sustainable Future, September 08-10,2022, Department of Chemical Engineering, IIT Roorkee, India.

(9) K Ankita Rao, T P Krishna Murthy and **Vaishakh Nair**, "Docking and Experimental Studies for Removal of Anthraquinone dye by Modified Low Sulphonated Lignin", International Conference on Green Chemistry and Engineering towards Sustainable Development – An Industrial Perspective, June 16-18, 2021, SVNIT Surat, India.

(8) Anuradha and **Vaishakh Nair**, "Effect of weed biochar and natural fertilizer on the growth of okra (Abelmoschus esculentus l.) Plant", International Conference on Recent Technologies and Advanced Materials for Green Energy and Sustainable Environment (RTAMGESE-Online), March 12-13, 2021, NIT Trichy, India.

(7) Florence Ruth Noronha and **Vaishakh Nair**, "Role of Coconut Shell Biochar and Earthworms (Eudrilus euginea) in Palak Spinach (Spinacia oleracea) Growth Studies in Cadmium Contaminated Soil", International Conference on Recent Technologies and Advanced Materials for Green Energy and Sustainable Environment (RTAMGESE-Online), March 12-13, 2021, NIT Trichy, India.

(6) Juan Carlos Colmenares, **Vaishakh Nair** and Tomasz Danko, High value chemicals from lignin model compounds in a photocatalytic microfluidic reactor: TiO_2 vs. ZnO, *4th Iberoamerican Congress on Biorefineries,* 24-26 Oct. 2018, Jaén, Spain.

(5) **Vaishakh Nair**, Juan Carlos Colmenares and Tomasz Danko, Selective photooxidation of lignin model compound- benzyl alcohol in a ZnO coated microfluidic reactor, *4th International Conference on Bioinspired and biobased Chemistry and Materials*, 14 – 17 Oct. 2018, Nice, France.

(4) Suchith Chellappan, Chingakham Ch., **Vaishakh Nair**, Sajith.V and Aparna. K, Microwave assisted biodiesel production using a novel catalyst based on nanomagnetic biocomposite, *1st International Conference on Energy and Environmental Global Challenges (ICEE-2018),* 9-10 Mar. 2018, National Institute of Technology Calicut, Calicut, India.

(3) Juan Carlos Colmenares, **Vaishakh Nair**, Agnieszka Lewalska-Graczyk and Sauco Cano Navarro, Selective oxidation via photocatalysis for lignin valorisation in continuous flow microreactors, *2nd International Conference on the Sustainable Energy and Environmental Development (SEED)*, 14 – 17 Nov. 2017, Krakow, Poland.

(2) **Vaishakh Nair** and R. Vinu. In-situ catalytic fast pyrolysis of lignin for the production of phenols using oxide catalysts, *249th ACS National Meeting*, 22-26 Mar. 2015, Denver, Colorado, USA.

(1) **Vaishakh Nair** and R. Vinu. Novel chitosan-alkali lignin composites for adsorption of industrial effluents from wastewater, *National Conference on Application of the Derivatives of Chitin and Chitosan* (ADCC)-2014, 22-23 Aug. 2014, The Gandhigram Rural Institute, Gandhigram, Tamil Nadu, India.

Patents

(1) **Vaishakh Nair**, Soumya Koippully Manikandan and Keyur Raval, **Method of Developing Pseudomonas Stutzeri Immobilized Rice Husk Biochar (OMS.0065.000917), Patent application No.:202341079318**

Invited Talk

(6) **International Conference Series II on "Smart Materials for Biotechnology and Mechanical Applications" (IC-SGMat) 2025 Hybrid mode** (10^{th}-11^{th} March 2025) at Department of Biotechnology and Biochemical Engineering, Sree Buddha College of Engineering, Pattoor, Alappuzha, Kerala, India

(5) **FDP on "Advances and Recent Trends in Environmental and Energy Applications of Nanomaterials**" (04 – 07

December 2024, MIT, Manipal

(4) **Indo-Japan workshop on Frontiers in Analytical and Applied Pyrolysis for Energy and Environment (FAAPEE) 2024** (26^{th} -27^{th} February 2024) at IIT Madras, Chennai, Tamil Nadu.

(3) **First International Online Conference on Blends, Composites, Bio-Composites and Nanocomposites (ICNC–2020** (9^{th} -11^{th} October 2020) at Mahatma Gandhi University, Kottayam, Kerala, India.

(2) **TEQIP-III Sponsored Online Faculty Development Programme On Recent Advances in Nanotechnology, Catalysis and Biochemical Engineering (RANCBE- 2020**) (16^{th} – 20^{th} September 2020) Department of Chemical Engineering, Veer Surendra Sai University of Technology, Burla, Sambalpur, Odisha, India.

(1) **e-Workshop on "Emerging Applications in Nanotechnology"** (10^{th} -14^{th} August 2020) Department of Biotechnology and Department of Chemistry, Ramaiah Institute of Technology, Bengaluru, Karnataka, India.

Research Guidance

Ph.D. Scholar
Guided: 1 ; On-Going : 1
M.Tech (Research) Scholar
Guided: 1
M.Tech Scholar
Guided: 15 ; On-Going : 2
B.Tech Scholar
Guided: 4 ; On-Going : 1

Courses Handled

UG Courses: Heat Transfer, Process Instrumentation, Introduction to Design Thinking
UG Labs: Momentum Transfer Lab, Heat Transfer Lab, Mass Transfer Lab, Chemical Reaction Engineering and Process Control Lab
PG Courses: Solid Waste Management, Environmental Biotechnology, Bioremediation Technique, Advanced Separation Techniques, Bioprocess Engineering
PG Labs: Environment Quality Analysis Lab