



Karunya INSTITUTE OF TECHNOLOGY AND SCIENCES

(Declared as Deemed to be University under Sec.3 of the UGC Act, 1956)

MoE, UGC & AICTE Approved

NAAC A++ Accredited

Water Management Educational Opportunities at Karunya Institute of Technology and Sciences (KITS)

Karunya Institute of Technology and Sciences (KITS) identified four thrust areas of societal importance - Water, Food, Healthcare, and Sustainable Energy to align with national priorities and Sustainable Development Goals (SDGs). Among these, Water remains a major focus area, reflecting KITS's long-standing commitment to sustainable water management, conservation, and community education.

The Water Institute (WI)

Established in 2008, the Water Institute (WI) serves as a flagship interdisciplinary centre dedicated to advancing scientific water management and ensuring water security, particularly in semi-arid regions. The Institute draws inspiration from international milestones such as the Dublin (1992), Rio (1992), and Johannesburg (2012) Conferences, and national programs like the National Drinking Water Mission and WAR for Water. The WI brings together faculty and students from engineering, agriculture, science, and management disciplines to collaborate on research, technology development, and societal outreach.

Infrastructure for Research and Consultancy

To strengthen education and research in water management, Karunya Institute of Technology and Sciences (KITS) has established four specialized laboratories focusing on Hydrology, Water Quality Testing, Central Instrumentation, and Computational and Simulation Studies. These state-of-the-art facilities are designed to promote interdisciplinary research and practical learning in sustainable water resource management.

The laboratories are equipped with advanced analytical instruments such as Atomic Absorption Spectrophotometer (AAS), Total Organic Carbon (TOC) Analyzer, UV Spectrophotometer, Ion Chromatography, and BET Surface Area Analyzer for precise water quality assessment. Field and monitoring equipment such as Automatic Weather Stations, Electrical Resistivity Meters, and Hydrometeorological Sensors support data collection for hydrological and groundwater studies.

In addition, the iGIS and FEFLOW software platforms are utilized for groundwater flow and contaminant transport modeling, enabling simulation-based decision-making in water management. The Central Instrumentation Facility further enhances research through shared access to high-end instruments including NMR, FTIR, SEM, AFM, XRD, HPLC, and GC, supporting advanced characterization and interdisciplinary collaboration in water and environmental research.

Academic Programs and Research Opportunities

KITS provides diverse educational pathways from Undergraduate to Doctoral programs, focusing on water resources, treatment, and sustainability.

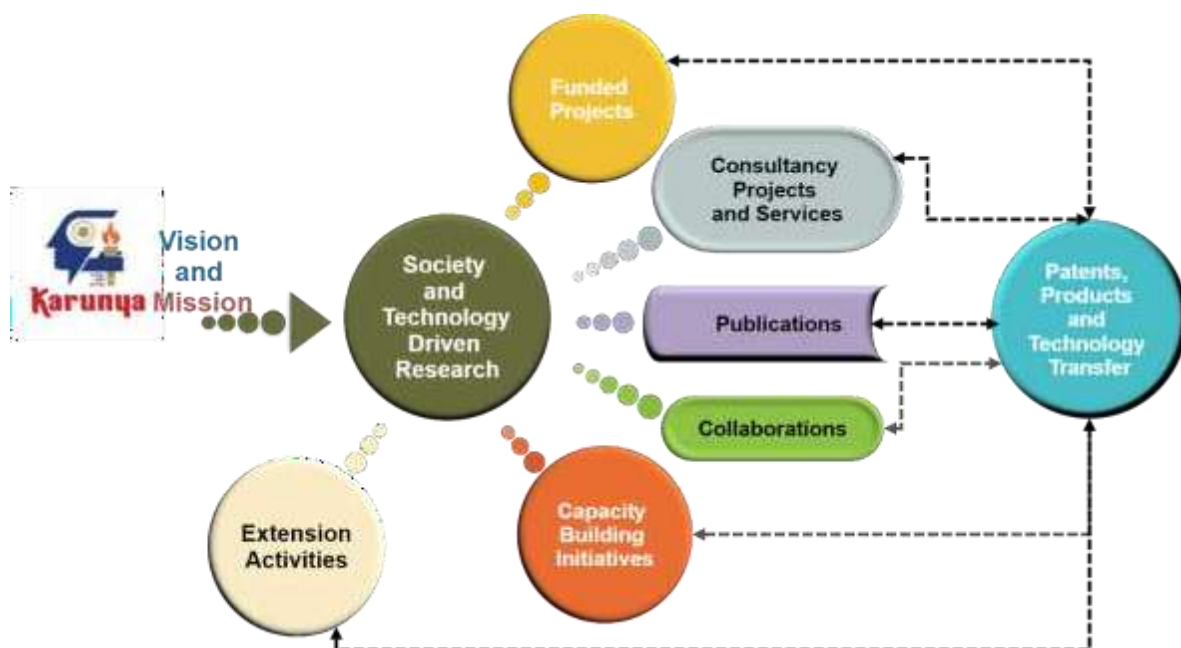
- The M.Tech. in Integrated Water Resources Management (IWRM), introduced in 2009 and later revamped as M.Tech. Environmental and Water Resources Engineering (2017), was framed using UNESCO-IHE and SaeiWATERs guidelines.
- The Ph.D. program under WI has produced over 20 doctoral theses addressing topics such as:
 - Land cover–land use impacts on hydrology
 - Groundwater recharge using isotope applications
 - Nano-membrane and electrocoagulation techniques for water treatment
 - Bioremediation and decentralized wastewater management models



Mission and Focus Areas

The Water Institute pursues a clear mission supported by six key strategies:

1. Participation in policy formulation
2. Academic intervention through curriculum integration
3. Research and consultancy for real-world solutions
4. National and international collaborations
5. Capacity building through workshops and training
6. Extension and outreach activities for community awareness



Curriculum Aligned with SDG 6: Clean Water and Sanitation

KITS offers 46 courses directly linked to SDG 6 across engineering, agriculture, and applied sciences. These include:

- Water and Wastewater Engineering
- Irrigation Water Management
- Hydrology and Water Resources Engineering
- Nanotechnology for Water and Wastewater Treatment
- Rainfed Agriculture and Watershed Management

Each course integrates sustainable water use, treatment technologies, and pollution prevention principles. Mapping exercises show alignment with Clean Water and Sanitation goals up to 100% for certain programs.

S.No.	Course code	Course Name
1	14CE2005	Applied Hydraulics and Hydraulic Machinery
2	14CE2008	Water and Waste water Engineering
3	14CE2011	Water Resources Engineering
4	15CE2001	Irrigation Engineering
5	14CE3036	Hydrology practicals
6	14CE3040	Water and Wastewater treatment
7	16CE3004	Elements of hydrology
8	16CE3005	Design of hydraulic and conveyance structures
9	16CE3006	Water resources planning and systems engineering
10	16CE3014	Nanotechnology for water and wastewater treatment
11	17CE2005	Applied Hydraulics and Hydraulic Machinery

12	17CE2008	Water Supply and Wastewater Engineering
13	17CE2028	Design and Drawing (Irrigation and Environmental)
14	17CE3054	Water and Wastewater treatment
15	17CE3058	Elements of hydrology
16	17CE3059	Design of hydraulic and conveyance structures
17	17CE3060	Water resources planning and systems engineering
18	17CE3061	Principles of integrated water resources management
19	17CE3062	Hydrology laboratory
20	17CE3077	Forest, Urban and Agricultural Watershed management
21	17AG1005	Irrigation Water Management
22	18CE2019	Hydraulic Engineering
23	18CE2025	Hydrology and Water Resources Engineering
24	18ME2082	Introduction to Water Technologies
25	18AT2001	Fluid Mechanics and Open Channel Hydraulics
26	18AT2009	Soil and Water Conservation Engineering
27	18AT2015	Ground water, Wells and Pumps
28	18AT2016	Water Harvesting and Soil Conservation Structures
29	18AT2018	Irrigation and Drainage Water Engineering
30	18AT2019	Micro Irrigation
31	18AT2044	Water Quality and Management Measures
32	18CE3036	Surface flow hydrology
33	18CE3038	Water resources planning and systems engineering
34	18CE3039	Water and Wastewater treatment technology
35	18CE3040	Hydrology laboratory
36	18CE3054	Principles of integrated water resources management
37	18CE3059	Impact of climate change on water resources
38	18ME2028	Hydraulics and Pneumatics
39	18ME2029	Hydraulics and Pneumatics Laboratory
40	18AG1007	Irrigation Water management
41	18AG2027	Rainfed Agriculture and Watershed Management
42	18HO1006	Irrigation and Weed Management in Horticultural Crops
43	20CE2039	Irrigation Engineering and Hydraulic Structures
44	19BT2010	Fluid Mechanics
45	19BT2011	Fluid Mechanics and Heat Transfer Lab

46	19BT2030	Environmental Pollution Control Engineering
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Courses Aligned with Sustainable Development Goal 6: Water (Odd semester)

S. No	Course Code	Course Title (Odd Semester)	Mapping with SDG 6: Clean Water and Sanitation in %
1	17NT2002	Synthesis of Nanomaterials	5
2	17PH3017	Renewable Energy Sources	5
3	17PH3021	Material Characterization	20
4	18AG2015	Environmental Studies and Disaster Management	40
5	18AG2019	Crop Improvement I (Kharif crops)	70
6	18AG2020	Manures, Fertilizers and Soil Fertility Management	25
7	18AG2024	Precision Farming	50
8	18AG2029	Principles of Organic Farming	50
9	18AT2009	Soil and Water Conservation Engineering	50
10	18AT2018	Irrigation and Drainage Water Engineering	50
11	18CE2025	Hydrology and Water Resources Engineering	50
12	18CE3035	Atmospheric Environmental Pollution And Control	20
13	18CE3036	Surface Flow Hydrology	50
14	18CE3037	Environmental Chemistry and Microbiology	30
15	18CE3052	Groundwater Hydrology	30
16	18CE3057	Forest, Urban and Agricultural Watershed Management	40
17	18CE3058	Wetland Hydrology	30
18	18CE3061	Remote Sensing and Geographical Information System	10
19	18CH2001	Environmental Studies	30
20	18ME2028	Hydraulics and Pneumatics	30
21	18ME2047	Power Plant Engineering	10
22	18RO2010	Programmable Logic Controllers	10
23	18RO2011	Automation System Design	20
24	19CH3002	Waste to Energy	20
25	19ME2025	Thermodynamics	30
26	20AG2001	Rural Agricultural Work Experience (RAWE)	25
27	20AG2008	Fundamentals of Plant Breeding	50

28	20BT3031	Advanced Environmental Biotechnology	75
29	20FP3021	Green Technology in Food Processing	20
30	20ME1007	3D Printing Technology	10
31	20ME1009	Engineering Drawing and Graphics-2021 B.Tech BME A	20
32	20ME2016	Fluid Mechanics and Fluid Machines	20
33	20NT3018	Commercialization of Nanotechnology Products	10
34	20NT3020	Nanomaterial-Based Energy Devices	80
35	20RO2007	Smart Sensors for IoT Applications	10
36	20RO3017	Image Processing and Machine Vision	10
37	21AG1301	Fundamentals of Soil Science-2021 B.Sc Agri	50
38	21AG3001	Modern Concepts in Crop Production	30
39	21AG3005	Agro-Meteorology and Crop Weather Forecasting	45
40	21AG3006	Cropping Systems and Sustainable Agriculture	50
41	21AG3027	Principles of Plant Breeding	50
42	21AG3216	Soil Fertility and Fertilizer Use	25
43	21HO3127	Growth and Development of Horticultural Crops	50
44	21HO3131	Subtropical and Temperate Fruit Production	45
45	21MS3061	Spatial Data Analytics	10

Courses Aligned with Sustainable Development Goal 6: Water (Even semester)

S. No	Course Code	Course Title (Even Semester)	Mapping with SDG 6: Clean Water and Sanitation in %
1	17CH1004	Environmental Studies-2021 BBA	30
2	17EI2028	SCADA Systems Design	25
3	18AG2012	Problematic Soils and their Management	25
4	18AG2027	Rainfed Agriculture and Watershed Management	100
5	18AG2028	Practical Crop Production (Rabi crops)	30
6	18AG2032	Crop Improvement - II (Rabi crops)	70
7	18AG2034	Farm Management, Production and Resource Economics	100
8	18AG2035	Principles of Food Sciences and Nutrition	100

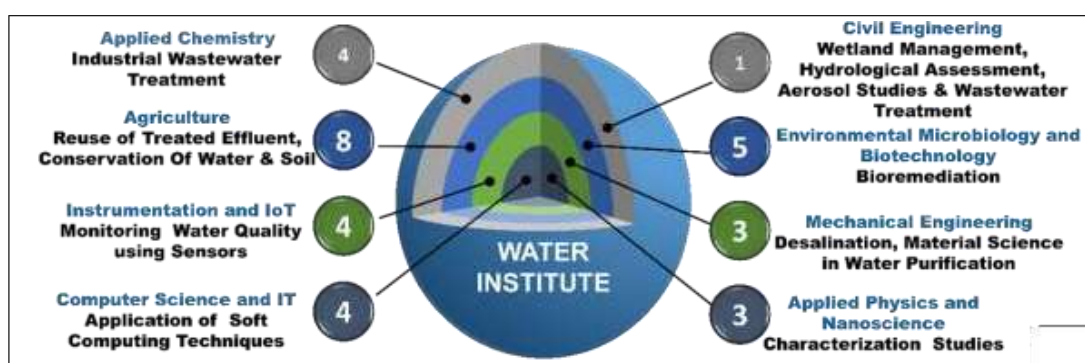
9	18AT2015	Groundwater, wells and Pumps	50
10	18AT2016	Water Harvesting and Soil Conservation Structures	50
11	18AT2019	Micro Irrigation	100
12	18BT2051	Role of Biotechnology in Environment	75
13	18CE3038	Water Resources Planning and Systems Engineering	40
14	18CE3039	Water and Wastewater Treatment Technology	40
15	18CH2001	Environmental Studies	30
16	18EI2005	Measurement and Instrumentation	30
17	18FP2020	Bakery, Beverages and Confectionery Technology	20
18	18HO2003	Precision Farming and Protected Cultivation	50
19	18HO2013	Principles of Ornamental Horticulture and Landscape Architecture	20
20	18ME2027	Fundamentals of Thermal Sciences and Fluid Mechanics	10
21	18ME2055	Computer Aided Design	10
22	18ME2058	Mechatronics systems	10
23	18RO2011	Automation System Design	20
24	19MA3030	Mathematical Modeling	10
25	19ME2020	Drone Technology-(Combined Class)	5
26	19RO1002	Engineering Practices	10
27	20AG1002	Introductory Agro-Meteorology & Climate Change	40
28	20AG2013	Principles of Seed Technology	60
29	20BC2019	Disaster Management	20
30	20BT3066	Algae Biotechnology	25
31	20CE2014	Water Resources Systems	20
32	20CH3040	Water Treatment Technologies	10
33	20RO2003	Sensors and Protocols for Instrumentation	30
34	20RO2007	Smart Sensors for IoT Applications	10
35	20RO3017	Image Processing and Machine Vision	10
36	21AG1201	Fundamentals of Genetics	20
37	21AG1302	Introductory Agro-meteorology & Climate Change	40
38	21AG1303	Agricultural Microbiology	20
39	21AG1451	Introductory Soil and Water Conservation Engineering-2021 B.Sc Agri A	50

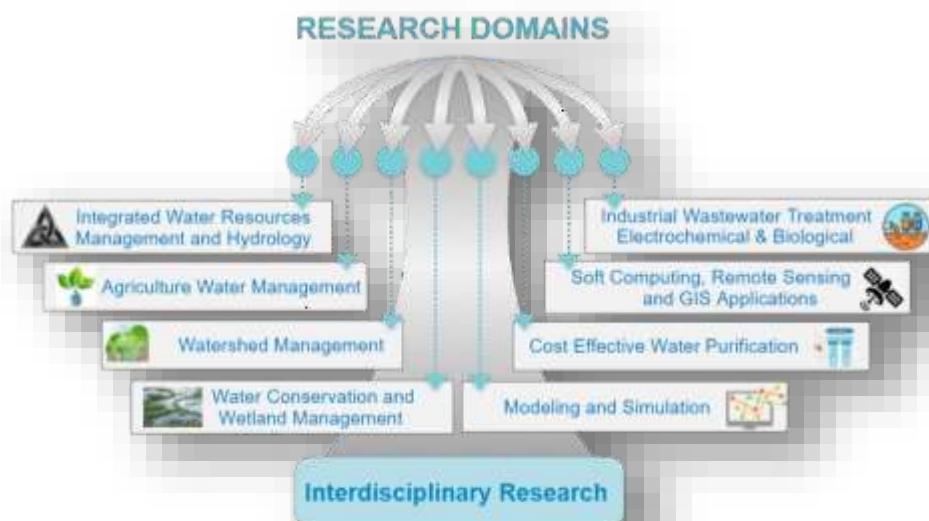
40	21AG1503	Fundamentals of Crop Physiology	15
41	21AG3004	Principles and Practices of Water Management	100
42	21AG3007	Dryland Farming and Watershed Management	50
43	21AG3010	Agronomy of Fodder and Forage Crops	20
44	21AG3218	Remote Sensing and GIS Techniques for Soil, Water and Crop Studies	75
45	21AG3226	Agricultural Research, Research Ethics and Rural Development Programs	25
46	21ME3004	Manufacturing System and Simulation	10

Interdisciplinary Research and Collaborations

An interdisciplinary team of 75 faculty and numerous students actively participate in water-related research, resulting in:

- 100+ Scopus/WoS-indexed publications
- 12 patents, including collaborations with Ben-Gurion University (Israel) and Cape Breton University (Canada)
- Participation in funded research projects on electro-dialysis, capacitive deionization, and biochar-based purification





Publications

S.No	Title	Authors	Scopus Source title
1.	Sustainable Solutions: Reviewing the Future of Textile Dye Contaminant Removal with Emerging Biological Treatments	Kusumlata Ambade, B. Kumar, A. Gautam, S.	Limnological Review
2.	A sustainable and eco-friendly approach for environmental and energy management using biopolymers chitosan, lignin and cellulose — A review	Christina, K. Subbiah, K. Arulraj, P. Krishnan, S.K. Sathishkumar, P.	International Journal of Biological Macromolecules
3.	Rational construction of MOF derived α -Fe ₂ O ₃ /g-C ₃ N ₄ composite for effective photocatalytic degradation of organic pollutants and electrocatalytic oxygen evolution reaction	Kumaravel, S. Avula, B. Chandrasatheesh, C. Niyitanga, T. Saranya, R. Hasan, I. Abisheik, T. Rai, R.S. Pandiyan, V. Balu, K.	Spectrochimica Acta - Part A: Molecular and Biomolecular Spectroscopy
4.	Influence of nickel doping and cotton stalk activated carbon loading on structural, optical, and photocatalytic properties of zinc oxide nanoparticles	Thirumoolan, D. Ragupathy, S. Renukadevi, S. Rajkumar, P. Rai, R.S. Saravana Kumar, R.M. Hasan, I. Durai, M. Ahn, Y.-H.	Journal of Photochemistry and Photobiology A: Chemistry
5.	Sustainable management of tea wastes: resource recovery and conversion techniques	Duarah, P. Haldar, D. Singhania, R.R. Dong, C.-D. Patel, A.K. Purkait, M.K.	Critical Reviews in Biotechnology
6.	IoT-Based Automatic Water Quality Monitoring System with Optimized Neural Network	Bamini, A.A.M. Chitra, R. Agarwal, S. Kim,	KSII Transactions on Internet and

		H. Stephan, P. Stephan, T.	Information Systems
7.	A coastal band spectral combination for water body extraction using Landsat 8 images	Aroma, R.J. Raimond, K. Estrela, V.V. de Jesus, M.A.	International Journal of Environmental Science and Technology
8.	Assessing variability and hydrochemical characteristics of groundwater fluoride contamination and its associated health risks in East Singhbhum district of Jharkhand, India	Ambade, B. Sethi, S.S. Patidar, K. Gautam, S. Alshehri, M.	Journal of Hazardous Materials
9.	Application of artificial intelligence tools in wastewater and waste gas treatment systems: Recent advances and prospects	Behera, S.K. Karthika, S. Mahanty, B. Meher, S.K. Zafar, M. Baskaran, D. Rajamanickam, R. Das, R. Pakshirajan, K. Bilyaminu, A.M. Rene, E.R.	Journal of Environmental Management
10.	Comprehensive assessment of microalgal-based treatment processes for dairy wastewater	Singh, P. Mohanty, S.S. Mohanty, K.	Frontiers in Bioengineering and Biotechnology
11.	IoT and ML-based automatic irrigation system for smart agriculture system	Anoop, E.G. Bala, G.J.	Agronomy Journal
12.	Optimized phenol degradation and lipid production by Rhodosporidium toruloides using response surface methodology and genetic algorithm-optimized artificial neural network	Singh, S. Mahanty, B. Gujjala, L.K.S. Dutta, K.	Chemosphere
13.	Multi-model exploration of groundwater quality and potential health risk assessment in Jajpur district, Eastern India	Sabinaya, S. Mahanty, B. Rout, P.R. Raut, S. Sahoo, S.K. Jha, V. Sahoo, N.K.	Environmental Geochemistry and Health
14.	Dynamic change analysis of water spread region and its impact assessment using spectral indices of remotely sensed data	Anand, B. Rekha, R.S. Remitha, K.R. Maniyammai, V. Ramaswamy, K. Gautam, S.	Environment, Development and Sustainability
15.	Nanozymes as Catalytic Marvels for Biomedical and Environmental Concerns: A Chemical Engineering Approach	T, S.K. BS, M.N.D. Babu, L.R. Paul, A.E. Murugan, S. Periakaruppan, R.	Journal of Cluster Science
16.	Farm-era: Precision Farming with GIS, AI Pest Management, Smart Irrigation, Data Analytics, and Optimized Crop Planning	Reddy, K.P. Roshni Thanka, M. Edwin, E.B. Ebenezer, V. Stewart Kirubakaran, S. Joy, P.	7th International Conference on Inventive Computation

			Technologies, ICICT 2024
17.	Utilizing banana peduncle as an affordable bio-adsorbent for efficient removal of lead ions from water and industrial effluents	Muthusamy, P. Murugan, S. Mandal, S.K. Mishra, B. Mohanta, Y.K. Sarma, H. Narayan, M.	Sustainable Chemistry for the Environment
18.	Plant-based biopolymers for wastewater pollutants mitigation	Harshan, K. Rajan, A.P. Kingsley, D. Sheikh, R.A. Aashmi, J. Rajan, A.P.	Physical Sciences Reviews
19.	Crop water management using machine learning-based evapotranspiration estimation	Meenal, R. Jala, P.K. Samundeswari, R. Rajasekaran, E.	Journal of Applied Biology and Biotechnology
20.	Smart Waste Bins using DCNN and Internet of Things	Ande, A. Sundar, G.N. Thomas, R. Nair, V. Narmadha	2nd International Conference on Emerging Trends in Information Technology and Engineering, ic-ETITE 2024
21.	Development of biopolymers from microbes and their environmental applications	Nambiar, K. Kumari, S.P. Devaraj, D. Sevanan, M.	Physical Sciences Reviews
22.	Spatial analysis and assessment of soil erosion in the southern Western Ghats region in India	B, A. K.R, R. R, S.R. M, M.D. K, R.	Environmental Monitoring and Assessment
23.	Advanced Weather Monitoring and Disaster Mitigation System	Paul, D.J. Janani, S.P. Ancy Jenifer, J.	2024 International Conference on Cognitive Robotics and Intelligent Systems, ICC - ROBINS 2024
24.	A reversible fluorescent chemosensor based on a naphthalene dyad for Pb(II) ions: Applications in food, water, and bio-imaging	David, C.I. Prabakaran, G. Narmatha, G. Luther, J.M. Manigandan, S. Muthusamy, A. Kayalvizhi, R. Kannan, V.R. Kumar, R.S. Nandhakumar, R.	Journal of Food Composition and Analysis
25.	Modelling selenite and chemical oxygen demand removal in an inverse fluidized bed bioreactor using genetic algorithm optimized artificial neural network	Sinharoy, A. Mahanty, B. Behera, S.K. Mehta, M. Mantri, S. Das, R. Saikia, S. Rene, E.R. Pakshirajan, K.	Journal of Chemical Technology and Biotechnology
26.	Production of biochar from Keppaphycus alvarezii (macroalgae) for the removal of eosin yellow:	Elayappan, T. Jayanarayanan, B. Daniel, A.P.	Biomass Conversion and Biorefinery

	desorption, kinetic, and isotherm studies		
27.	Reuse and Recovery of Water from Industrial Textile Dyeing Effluent Using High-Performance Electrodes Continuous Flow Electrocoagulation Reactor	Jegathambal, P. Brunoc Shobina Mayilswamy, C. Parameswari, K.	Nature Environment and Pollution Technology
28.	Adsorption isotherms and kinetic studies for the defluoridation from aqueous solution using eco-friendly natural adsorbent like Terminalia Chebula	Sumathi, J. Benedict, B.A. Sheela, L.S. Bhagavathsingh, J. Manickam, V.	Sustainable Chemistry for Climate Action
29.	Facile synthesis of 3D graphite incorporated double doped ZnO nanocomposite material with enhanced photocatalytic properties: Evaluation of ecotoxicity and phytotoxicity	Kuruvilla, E. Samson Nesaraj, A. Jose, V. Jose, V. Dhanasekaran, P. Arunkumar, M.	Inorganic Chemistry Communications
30.	Fundamentals and applications of carbon nanotube-based carbocatalysts for water treatment	Kadarkarai, G. Arumugam, A. Subramanian, U.M. Mohan, R.	Woodhead Publishing Series in Composites Science and Engineering: Nanocomposites for Environmental, Energy, and Agricultural Applications
31.	Creating and analyzing Sb–TiO ₂ photocatalysts for effective UV-A light degradation of RR 120 and MO dyes	Balu, K. Abisheik, T. Michele Gomez, L.A. Durai, M. Tiffany, M. R, V. Afzal, M. Yadav, A.K. Pandiyan, V. Ahn, Y.-H.	Journal of the Indian Chemical Society
32.	A captivating approach to elevate the detection of Al ³⁺ ions incorporates the utilization of a tripodal receptor intricately embellishing the surface of zinc oxide	Tamil Selvan, G. Samson, J. Rajasingh, P. Li, X. Ravi Kumar, A. Zhu, N. Kuldeep, S.A. Mosae Selvakumar, P. Jun Tang, P. Zhang, Z.	Spectrochimica Acta - Part A: Molecular and Biomolecular Spectroscopy
33.	Production of power and fresh water using renewable energy with thermal energy storage based on fire hawk optimization	Rajesh, P. Gandla, P.K. Robinson Smart, D.S. Prayagi, S.V.	Intelligent Decision Technologies
34.	Assessing titanium vs. aluminium electrodes for wastewater remediation in the small-scale industries (SSI) textile sector	Sebastian, S.L. Kalivel, P. Subbiah, K. Murphy, M.S.A. David, J.J. Palanichamy, J.	Environmental Nanotechnology, Monitoring and Management

35.	Sustainable groundwater development using semi-supervised learning and community-led total forestry and pasture approach	S, U.M. Alphy, A. Deivasikamani, G. Prakash, U. Shadrach, F.D. Kumar, M.A. Manoj, S.	Groundwater for Sustainable Development
36.	Precision Cultivation for Bonsai through IoT Implemented Smart Irrigation	Daniel, V. Ramalakshmi, K. Venkatesan, R. Sundar, G.N. Nancy, G. Shirley, S.	Proceedings of the 3rd International Conference on Applied Artificial Intelligence and Computing, ICAAIC 2024
37.	Simultaneous Assessment of the Nitrates and Nitrites in the Ground Water Samples using Optical Spectrophotometry and Validating the Appropriate Wavelength of Measurement	Suguna Devakumari, M. Shahbazi, K.	Agricultural Science Digest
38.	Adaptive Water Quality Potability Prediction and Analysis Through GEM Continual Learning Algorithm for Sustainable Resource Management	Jeremy David, C. Shubin, D.	10th International Conference on Advanced Computing and Communication Systems, ICACCS 2024
39.	Investigating the efficiency of electrocoagulation using similar/dissimilar electrodes for the detoxification of Coralene Rubine dye: a cost effective approach	David, J.J. Stephen, A.M.M. Kavitha, S. Krishnan, S.K. Mariappan, S. Sebastian, S.L. Palanichamy, J. Kalivel, P. Sathishkumar, P.	Environmental Geochemistry and Health
40.	Evaluation of toxicity in real-time textile effluents post-treatment using Sorghum bicolor and Danio rerio- Potential for reuse	David, J.J. Maria Stephen, A.M. Sebastian, S.L. Krishnan, S.K. Kavitha, S. Kalivel, P. Palanichamy, J.	Desalination and Water Treatment
41.	Combined tactic of seasonal changes and ionic processes of groundwater in Tamirabarani river basin, India	Chellaiah, G. Ayyamperumal, R. Rengaraj, B. Gopalakrishnan, G. Senapathi, V. Chengjun, Z. Huang, X.	Environmental Science and Pollution Research
42.	Electrocoagulation using Ti/Ti for the remediation and reuse of aqueous Dispersive Blue-79	Sebastian, S.L. Kalivel, P. Subbiah, K. David, J.J. Stephen, A.M.M. Palanichamy, J.	Environmental Monitoring and Assessment

43.	Exploring chitosan nanocomposites for wastewater treatment via solid phase extraction biorefinery	Gowri Lakshmi, S. Gomez, L.A. Shepherd, R. Chandrapragasam, V. Vijay, V. Thathapudi, J.J.	Bio Refinery of Wastewater Treatment: Way to Generate Waste to Value
44.	Avenues and opportunities of detoxification of micropollutants from industrial effluent using advanced biological treatment techniques	Kandasamy, S. Babu, S.A. Dwaraka, S.J.B. Naveenkumar, M. Nandakumar, N.P. Subbiah, K.	Emerging Innovative Trends in the Application of Biological Processes for Industrial Wastewater Treatment
45.	Fate of Micro/Nano Plastic Pollutants in the Marine Ecosystem	Thathapudi, J.J. Gomez, L.A. Vijay, V. Chandrapragasam, V. Shepherd, R. Paul, S. Lee, M.-J. Somu, P.	Remediation of Plastic and Microplastic Waste
46.	Desalination Performance of Multi-Walled Carbon Nanotubes Added Polymeric Nanocomposite Membrane	Megha, M. Elangovan, Y. Pramada, S.K. Jegathambal, P. Nidheesh, P.V.	Water, Air, and Soil Pollution
47.	Treatment of acidic electroplating effluent from small scale industries using batch and continuous flow adsorption reactor	Anand, A.M. Jegathambal, P. Jannet, S. Mayilswami, C.	Engineering Research Express
48.	Impact of Indoor Environment and Biological Processes on Bioaerosol Levels in a University Wastewater Treatment Lab	Upadhyay, R. Przysaś, W. Gautam, S.	Water, Air, and Soil Pollution
49.	Securing and Preserving the Support of the Community for the Implementation of the Continuous Water Supply System in India	Jayaseelan, D. Chellaiah, G. Neogi, A. Bockhoff, N. Sivan, P.P. Sunilkumar, A. Thankachan, A.	Water Resources Development and Management
50.	Rainfall Prediction using Machine Learning Algorithms	Sai, P.S. Thiyaagu, T.M. Soumya, P.G.	Proceedings of the 3rd International Conference on Applied Artificial Intelligence and Computing, ICAAIC 2024
51.	An Investigation on the Treatment of Wastewater Disperse Dye by Electrocoagulation and Examine the Use of the Treated Dye for Flora and Fauna	Asath Murphy, M.S. Jovitha, J.D. Robin, R.S. Sahaya, L.S. Palanichamy, J. Parameswari, K.	Iranian Journal of Chemistry and Chemical Engineering
52.	Ecology and diversity of microbial communities involved in the removal of priority contaminants and	Shepherd, R. Vijay, V. Nair, A. Rai, R.S. Chandrapragasam, V.	Trends in Biological Processes in

	micropollutants in wastewater treatment systems	Gomez, L.A. Thathapudi, J.J.	Industrial Wastewater Treatment
53.	Monsoon Shifts and Their Impact on Air Quality and Weather: A Case Study of the Amaravathi River Basin, India	Kumar, R.P. Brema, J. Gautam, S. Catherina, G.	Aerosol Optical Depth and Precipitation: Measuring Particle Concentration, Health Risks and Environmental Impacts
54.	Variability of ground water quality in quaternary aquifers of the cauvery and vennar sub-basins within the Cauvery Delta, Southern India	Kokkat, A. Mondal, N.C. SajilKumar, P.J. James, E.J.	Sustainability of Natural Resources: Planning, Development, and Management
55.	IoT Based Water body & Canal Management system using Cloud Technology	Shyaam Sankar, M. Janani, S.P. Ancy Jenifer, J. Stewart Kirubakaran, S.	Proceedings - 2024 4th International Conference on Pervasive Computing and Social Networking, ICPCSN 2024
56.	Microbial immobilization as an adept bioremediation tool for dye degradation	Krishnan, S.K. Subbiah, K. Subramanian, K. Kandasamy, S.	Emerging Innovative Trends in the Application of Biological Processes for Industrial Wastewater Treatment
57.	A study on the assessment of pollution and strategies for rejuvenation of Bharathapuzha river in Kerala, India	Anto, C.A. Verghese, V. Kurian, P.K. Cyriac, M.G. Archana, S.	International Journal of Water
58.	Optimizing Pyramid Solar Still Performance using Response Surface Methodology and Artificial Neural Networks	Immanuel, D.G. Isaac, S. Kaur, A. Pearlin, E. Bohidar, S.K. Manikandan, R.	Journal of Environmental Nanotechnology
59.	Identifying Drought-Tolerant Rice Genotypes using Drought Response Indices and Machine Learning	Daniels, D.A. Binodh, A.K. Raimond, K. Thankappan, S.	2024 International Conference on Cognitive Robotics and Intelligent Systems, ICC - ROBINS 2024

Extension and Community Outreach

KITS extends its water management knowledge beyond campus through:

- Awareness programs on water conservation and pollution control for local communities.
- Demonstrations on rainwater harvesting, greywater reuse, and precision irrigation at the university farm.
- Student-led initiatives such as clean-up drives in nearby streams and check dams under the Nature Club and NSS.
- Capacity-building workshops under the Karunya Technology Mission on Water and Desalination, promoting community participation in sustainable water use.

