

## **IQAC – Research and Development**

# **Research Newsletter**



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## Vision

The vision of BIT in terms of research & development is to be a centre of excellence, providing world-class education that transforms individuals into intellectual, empathetic and responsible citizens. We are committed to providing top of the line infrastructure that is most conducive for learning. We engage committed faculty who will infuse subject knowledge with latest teaching pedagogies. We provide state-of-the-art facilities to faculty members and students to access and engage in diligent research. We intend to collaborate the best minds in the industries with the academia of the college thereby empowering the students to meet the global standards. Our main motive is to create an enterprising environment for a continual progress and change that respects heterogeneity. The objective of R&D cell is to have a focus on addressing social, industrial and environment challenges through extensive core and multi-disciplinary research activities.

## Specific Objectives

The specific objectives include

- Develop core group of faculty members with high research potential
- Effective utilization of existing facilities and to establish new facilities
- Integrate research and education
- Enable faculty members and students to translate the knowledge and research into new products to improve the lifestyle of the people

Ensure timely disclosure of all potential Inventions / Innovations and results of research activities by faculty members/students through patents or proper mode of publications with relevant property rights

## Recent Initiatives

The recent initiatives include establishment of central research facility comprising 13 units at Research Park. We have also established advanced computing facility for carrying out computational analysis. These facilities support a lot of researchers in carrying out significant research activities.

## Recent Achievements

Some of our achievements include 293 Scopus indexed journal publications, 309 SCI / Web of Science indexed journal publications, **Rs.37,27,562/-** sanctioned funding from 20 government and non-government agencies (IEI R&D, AICTE ISTE, DBT, Rufford Small Grant- UK SERB, Community Radio Association, TNSCST & AICTE ATAL), and 37 Ph.D. awardees during the academic year 2021-2022.

## Current Progress

As of now, 823 research articles are under review in Scopus indexed journals, 605 research articles are under review in SCI / Web of Science indexed journals and 81 project proposals worth Rs.14,95,53,119/- are under consideration with various funding agencies. There are 179 doctoral degree holders with 78 guiding full-time & part-time research scholars.

## CRF @ Research Park

### List of facilities

- Biomolecular Characterization and Instrumentation Facility
- Instrument Calibration Facility
- Fabric Surface Enhancement Facility
- Functional Macro Molecular Enhancement Facility
- Engine and Fuels Testing Facility
- Materials Processing and Testing Facility
- Electrical Power Analysis Research Facility
- Aircraft Materials Testing Facility
- Liquid Crystals Research Facility
- Quantum Computing and Phytochemistry Research Facility
- Condensed Matter Research Facility
- Advanced Materials Research Facility
- Subsonic Airflow Testing Facility

## ACF @ Research Park

### List of softwares

- MATLAB
- VLSI Design using Cadence Tools Suite
- LabVIEW
- Oracle 11g
- Ansys 18.0
- CREO
- CATIA V5
- NX CAM Express
- Solidworks 16
- Altair HyperMesh
- IPG CarMaker
- Autoware

## Faculty Publications

Authors	Article Title	Journal Name
Harikumar, B., Kokilavani, S., Sudheer Khan, S.	Magnetically separable N/S doped Fe <sub>3</sub> O <sub>4</sub> embedded on MoO <sub>3</sub> nanorods for photodegradation of cefixime, Cr(VI) reduction, and its genotoxicity study	Chemical Engineering Journal
Okla, M.K., Balasurya, S., Alaraidh, I.A., Mohebaldin, A., Al-ghamdi, A.A., Al-okla, M.A., Abdel-Maksoud, M.A., Abdelaziz, R.F., Soufan, W., Balakrishnaraja, R., Raju, L.L., Thomas, A.M., Sudheer Khan, S.	Plasma-assisted in-situ preparation of L-cystine functionalized silver nanoparticle: An intelligent multicolor nano-sensing of cadmium and paracetamol from environmental sample	Spectrochimica Acta - Part A: Molecular and Biomolecular Spectroscopy
Swedha, M., Okla, M.K., Al-amri, S.S., Alaraidh, I.A., Al-ghamdi, A.A., Mohebaldin, A., Abdel-Maksoud, M.A., Aufy, M., Studenik, C.R., Thomas, A.M., Raju, L.L., Khan, S.S.	Green synthesis of two-electron centre based ZnO/NiCo <sub>2</sub> S <sub>4</sub> QDs-OVs using Punica granatum fruit peel extract for an exceptional visible light photocatalytic degradation of doxycycline and ciprofloxacin	Chemosphere

Authors	Article Title	Journal Name
Aravind, M.K., Kappen, J., Narayanamoorthi, E., Sanjaykumar, A., Varalakshmi, P., Arockiadoss, T., John, S.A., Ashokkumar, B.	Bioengineered magnetic graphene oxide microcomposites for bioremediation of chromium in ex situ - A novel strategy for aggrandized recovery by electromagnetic gadgetry	Environmental Pollution
Subhiksha, V., Alatar, A.A., Okla, M.K., Alaraidh, I.A., Mohebaldin, A., Aufy, M., Abdel-Maksoud, M.A., Raju, L.L., Thomas, A.M., Khan, S.S.	Double Z-Scheme ZnCo2O4/MnO2/FeS2 photocatalyst with enhanced photodegradation of organic compound: Insights into mechanisms, kinetics, pathway and toxicity studies	Chemosphere
Harikumar, B., Okla, M.K., Alaraidh, I.A., Mohebaldin, A., Soufan, W., Abdel-Maksoud, M.A., Aufy, M., Thomas, A.M., Raju, L.L., Khan, S.S.	Robust visible light active CoNiO <sub>2</sub> @BiFeO <sub>3</sub> /NiS ternary nanocomposite for photo-fenton degradation of rhodamine B and methyl orange: Kinetics, degradation pathway and toxicity assessment	Journal of Environmental Management
Harini, G., Okla, M.K., Alaraidh, I.A., Mohebaldin, A., Al-ghamdi, A.A., Abdel-Maksoud, M.A., Abdelaziz, R.F., Raju, L.L., Thomas, A.M., Khan, S.S.	Sunlit expeditious visible light-mediated photo-fenton degradation of ciprofloxacin by exfoliation of NiCo2O4 and ZnO-3Fe2O4 over g-C3N4 matrix: A brief insight on degradation mechanism, degraded product toxicity, and genotoxic evaluation in Allium cepa	Chemosphere
Subhiksha, V., Okla, M.K., Alaraidh, I.A., Mohebaldin, A., Soufan, W., Abdel-Maksoud, M.A., Abdelaziz, R.F., Thomas, A.M., Raju, L.L., Khan, S.S.	A prominent dual heterojunction framed CuWO4/Bi2WO6/MnS ternary NCs for para-chlorophenol degradation, Cr(VI) reduction & toxicity studies	Chemosphere
Sathish Kumar, T.R., Jegadheeswaran, S.	Experimental Investigation on Finned Solar Still with Enhanced Thermal Energy Storage	Journal of Thermal Science and Engineering Applications
Swedha, M., Alatar, A.A., Okla, M.K., Alaraidh, I.A., Mohebaldin, A., Aufy, M., Raju, L.L., Thomas, A.M., Abdel-Maksoud, M.A., Sudheer Khan, S.	Graphitic carbon nitride embedded Ni3(VO4)2/ZnCr2O4 Z-scheme photocatalyst for efficient degradation of p-chlorophenol and 5-fluorouracil, and genotoxic evaluation in Allium cepa	Journal of Industrial and Engineering Chemistry
Harikumar, B., Sudheer Khan, S.	Hierarchical construction of ZrO2/CaCr2O4/BiOI/O3 ternary photocatalyst: Photodegradation of antibiotics, degradation pathway, toxicity assessment, and genotoxicity studies	Chemical Engineering Journal
Tharmaraj, V., Anbu Anjugam Vandarkuzhali, S., Karthikeyan, G., Pachamuthu, M.P.	Efficient and recyclable AuNPs/aminoclay nanocomposite catalyst for the reduction of organic dyes	Surfaces and Interfaces
Naveena, S., Bharathi, A.	A new design of diabetes detection and glucose level prediction using moth flame-based crow search deep learning	Biomedical Signal Processing and Control
Velayudham, M., Ramdass, A., Sathish, V., Rajagopal, S.	Structural behavior of rhenium complexes in fluoride sensing: a spectroscopic and computational study	Structural Chemistry

Authors	Article Title	Journal Name
Dhayaneethi, S., Anburaj, J., Arivazhagan, S.	Multi-objective optimization of alloying elements to enhance the wear resistance and impact strength of HCCI produced by furan sand mold	Proceedings of the Institution of Mechanical Engineers, Part E: Journal of Process Mechanical Engineering
Kokilavani, S., Alaraidh, I.A., Okla, M.K., Chandran, P., Mohebaldin, A., Soufan, W., Al-ghamdi, A.A., Abdel-Maksoud, M.A., Abdelgawad, H., Thomas, A.M., Raju, L.L., Sudheer Khan, S.	Efficient photocatalytic degradation of methyl orange and malachite green by Ag <sub>3</sub> PO <sub>4</sub> decorated BiOBr nanoflower under visible light: Performance evaluation, mechanism insights and toxicology of the by-products	Journal of Alloys and Compounds
Krithika, S.M.U., Mani, K., Thangavelu, S.K., Bharathi, C.M., Saravanan, K., Prakash, C.	Investigation of the Physical Properties and Acoustic Performance of Composites Developed From Natural Fibres	AATCC Journal of Research
Dhanapal, V., Subhapriya, P., Sennappan, M., Govindaraju, K.M.	Controlled release characteristics of methylenebisacrylamide crosslinked superabsorbent polymer for water and fertilizer conservation in agriculture sector	Journal of Polymer Research
Usha, K.S., Sivakumar, R., Sanjeeviraja, C.	Preparation of pure NiO thin film by radio frequency magnetron sputtering technique and investigation on its properties	Journal of Materials Science: Materials in Electronics
Geetha, V.T., Ramalingam, G., Pachamuthu, M.P., Gopinath, S., Ragupathi, C., Sukantha, T.A.	Structure, Morphological, Magnetic, and Antibacterial Studies of Undoped and Ce/Mg-Doped NiO Nanoparticle Semiconductors Synthesized by Microwave Method	Journal of Superconductivity and Novel Magnetism
Karthiga, M., Santhi, V., Sountharajan, S.	Hybrid optimized convolutional neural network for efficient classification of ECG signals in healthcare monitoring	Biomedical Signal Processing and Control
Arjunraj, P., Jeyakumar, P.D., Dineshkumar, C., Bharathiraja, M.	Correction: Effects of novel intake manifold design and investigation of diesel engine operating on different alternative fuels (Journal of Thermal Analysis and Calorimetry, (2022), 147, 13, (7471-7484), 10.1007/s10973-021-10817-z)	Journal of Thermal Analysis and Calorimetry
Balamurugan, V.T., Haritha, J., ArunChendhuran, R., Srivel, S., AmalaJerrin, J.N., Kishore, S., Pachamuthu, M.P.	Classification of Groundnut Oil Using Advanced ATR-MIR Spectroscopy and Chemometrics	Food Analytical Methods
Arjunraj, P., Jeyakumar, P.D., Dineshkumar, C., Bharathiraja, M.	Effects of novel intake manifold design and investigation of diesel engine operating on different alternative fuels	Journal of Thermal Analysis and Calorimetry
Ponnudurai, V., Senthil Kumar, P., Sankar Muthuvelu, K., Velmurugan, S., Subhani, S., Arumugam, L., Rajarathinam, R.	Investigation on future perspectives of ex-situ biogenic methane generation from solid waste coal and coal washery rejects	Fuel
Elangovan, A., Ramachandran, J., Lakshmanan, D.K., Ravichandran, G., Thilagar, S.	Ethnomedical, phytochemical and pharmacological insights on an Indian medicinal plant: The balloon vine (Cardiospermum halicacabum Linn.)	Journal of Ethnopharmacology
Sivaranjani, P.R., Janani, B., Thomas, A.M., Raju, L.L., Khan, S.S.	Recent development in MoS <sub>2</sub> -based nano-photocatalyst for the degradation of pharmaceutically active compounds	Journal of Cleaner Production

Authors	Article Title	Journal Name
Prabhakar, S.K., Rajaguru, H., Kim, C., Won, D.-O.	A Fusion-Based Technique With Hybrid Swarm Algorithm and Deep Learning for Biosignal Classification	Frontiers in Human Neuroscience
Akshhayya, C., Okla, M.K., Al-Qahtani, W.H., Raaja Rajeshwari, M., Mohebaladin, A., Alwasel, Y.A., Soufan, W., Abdel-Maksoud, M.A., Abdelgawad, H., Raju, L.L., Thomas, A.M., Sudheer Khan, S.	Novel ZnFe <sub>2</sub> O <sub>4</sub> decorated on ZnO nanorod: Synergistic photocatalytic degradation of tetracycline, kinetics, degradation pathway and antifungal activity	Journal of Environmental Chemical Engineering
Balasurya, S., Okla, M.K., Alaraidh, I.A., Soufan, W., Al-ghamdi, A.A., Ahamad, S.R., Abdel-Maksoud, M.A., Abdelgawad, H., Raju, L.L., Thomas, A.M., Khan, S.S.	Photodegradation of 5-fluorouracil, carvedilol, para-chlorophenol and methimazole with 3D MnWO <sub>4</sub> nanoflower modified Ag <sub>2</sub> WO <sub>4</sub> nanorods: A non-genotoxic nanomaterial for water treatment	Chemosphere
Janani, B., Okla, M.K., Al-Amri, S.S., Mohebaladin, A., Alwasel, Y.A., Abdelgawad, H., Abdel-Maksoud, M.A., Thomas, A.M., Raju, L.L., Khan, S.S.	Designing novel MgFe <sub>2</sub> O <sub>4</sub> coupled V <sub>2</sub> O <sub>5</sub> nanorod for synergetic photodegradation of tetracycline with enhanced visible-light energy harvesting: Photoluminescence, kinetics, intrinsic mechanism and bactericidal effect	Chemosphere
Natarajan, K.S., Ramalingasekar, D., Palanisamy, S., Ashokan, M.	Effect on mechanical properties of lightweight sustainable concrete with the use of waste coconut shell as replacement for coarse aggregate	Environmental Science and Pollution Research
Paul, S., Thilagar, S., Nambirajan, G., Elangovan, A., Lakshmanan, D.K., Ravichandran, G., Arunachalam, A., Murugesan, S.	Rauwolfia serpentina: A Potential Plant to Treat Insomnia Disorder	Sleep and Vigilance
Mohanraj, A., Senthilkumar, V.	Effect of Metakaolin on the Durability Property of Superabsorbent Polymer Blended Self-Compacting Concrete	Iranian Journal of Science and Technology - Transactions of Civil Engineering
Manojkumar, P., Dheepanchakkravarthy, A., Senthil Kumar, P., Tamilsevi, S., Srinivasan, C.	Effect of physiological and morphological response of Musa acuminata under stress condition with different salinity levels using IoT	International Journal of Environmental Science and Technology
Okla, M.K., Harini, G., Dawoud, T.M., Akshhayya, C., Mohebaladin, A., Al-ghamdi, A.A., Soufan, W., Abdel-Maksoud, M.A., Abdelgawad, H., Raju, L.L., Thomas, A.M., Sudheer Khan, S.	Fabrication of MnFe <sub>2</sub> O <sub>4</sub> spheres modified CeO <sub>2</sub> nano-flakes for sustainable photodegradation of MB dye and antimicrobial activity: A brief computational investigation on reactive sites and degradation pathway	Colloids and Surfaces A: Physicochemical and Engineering Aspects
Aljafari, B., Arulmani, S., Takshi, A., Anandan, S.	Sonochemical decoration of palladium on graphene carpet for electrochemical methanol oxidation	Journal of Electroanalytical Chemistry

Authors	Article Title	Journal Name
Shankar, M.G., Babu, C.G., Rajaguru, H.	Classification of cardiac diseases from ECG signals through bio inspired classifiers with Adam and R-Adam approaches for hyperparameters updation	Measurement: Journal of the International Measurement Confederation
Kanna, P.R., Santhi, P.	Hybrid Intrusion Detection using MapReduce based Black Widow Optimized Convolutional Long Short-Term Memory Neural Networks	Expert Systems with Applications
Okla, M.K., Kokilavani, S., Mohebaldin, A., Thomas, A.M., Soufan, W., Abdel-Maksoud, M.A., Abdelgawad, H., Raju, L.L., Khan, S.S.	Ag decorated CoO NPs supported on chitosan matrix for colorimetric detection of L-cysteine, antibacterial application and photocatalytic reduction of hexavalent chromium ions	Colloids and Surfaces A: Physicochemical and Engineering Aspects
Das, S., Sneha, R.G., Hukkeri, S.M.	Value addition of silk cut cocoons	Man-Made Textiles in India
Prabhakar, S.K., Rajaguru, H., Ryu, S., Jeong, I.C., Won, D.-O.	A Holistic Strategy for Classification of Sleep Stages with EEG	Sensors
Poojitha, P., Gurumoorthi, P., Athmaselvi, K.A.	Optimization Studies on Ohmic-Assisted Extraction of Bioactive Compounds from Garlic	Asian Journal of Chemistry
Harikumar, B., Okla, M.K., Alaraidh, I.A., Mohebaldin, A., Soufan, W., AL-ghamdi, A.A., Abdel-Maksoud, M.A., Abdelgawad, H., Thomas, A.M., Raju, L.L., Das, A., Khan, S.S.	Nano Ag <sub>0</sub> decorated-silica matrix for the remediation of environmental pollutants: Visible-light driven Cr(VI) photoreduction, photodegradation of organic dye, nanomolar Hg <sup>2+</sup> detection, and antimicrobial applications	Journal of the Taiwan Institute of Chemical Engineers
Rohini, P., Madhu Mohan, M.L.N., Pongali Sathya Prabu, N.	Detection of phase transitions in liquid crystals through optical, thermal and electrical techniques	Optik
Swedha, M., Balasurya, S., Syed, A., Das, A., Sudheer Khan, S.	Continuous photocatalysis via Z-scheme based nanocatalyst system for environmental remediation of pharmaceutically active compound: Modification, reaction site, defect engineering and challenges on the nanocatalyst	Journal of Molecular Liquids
Chithra, A., Sekar, R., Senthil Kumar, P., Padmalaya, G.	A review on removal strategies of microorganisms from water environment using nanomaterials and their behavioural characteristics	Chemosphere
Krishnaveni, K., Gurusamy, S., Rajakumar, K., Sathish, V., Thanasekaran, P., Mathavan, A.	Aggregation induced emission (AIE), selective fluoride ion sensing and lysozyme interaction properties of Julolidinesulphonyl derived Schiff base	Journal of Photochemistry and Photobiology A: Chemistry
Kokilavani, S., Syed, A., Elgorban, A.M., Bahkali, A.H., AL-Shwaiman, H.A., Varma, R.S., Das, A., Khan, S.S.	Designing Z-scheme AgIO <sub>4</sub> nanorod embedded with Bi <sub>2</sub> S <sub>3</sub> nanoflakes for expeditious visible light photodegradation of congo red and rhodamine B	Chemosphere
Thiyagu, T.T., Gokilakrishnan, G., Uvaraja, V.C., Maridurai, T., Prakash, V.R.A.	Effect of SiO <sub>2</sub> /TiO <sub>2</sub> and ZnO Nanoparticle on Cardanol Oil Compatibilized PLA/PBAT Biocomposite Packaging Film	Silicon
Srinitya, G., Sharmila, D., Logeswari, S., Daniel Madan Raja, S.	Certain investigations on image segmentation algorithms on synthetic aperture radar images and classification using convolution neural network	Concurrency and Computation: Practice and Experience
Karthiga, M., Santhi, V.	A wireless sensor network for remote detection of arrhythmias using convolutional neural network	Wireless Networks

Authors	Article Title	Journal Name
Ananth, A.D., Palanisamy, C.	Extended and optimized deep convolutional neural network-based lung tumor identification in big data	International Journal of Imaging Systems and Technology
Raja Sekar, K., Jegadheeswaran, S., Kannan, R., Manigandan, P.	Perforated Wall in Controlling the Separation Bubble Due to Shock Wave -Boundary Layer Interaction	International Journal of Turbo and Jet Engines
Harini, G., Balasurya, S., Khan, S.S.	Recent advances on gadolinium-based nano-photocatalysts for environmental remediation and clean energy production: Properties, fabrication, defect engineering and toxicity	Journal of Cleaner Production
Balasurya, S., Okla, M.K., Mohebaldin, A., AL-ghamdi, A.A., Abdel-Maksoud, M.A., Almunqedhi, B., Abdelgawad, H., Thomas, A.M., Raju, L.L., Khan, S.S.	Self-assembling of 3D layered flower architecture of BiOI modified MgCr <sub>2</sub> O <sub>4</sub> nanosphere for wider spectrum visible-light photocatalytic degradation of rhodamine B and malachite green: Mechanism, pathway, reactive sites and toxicity prediction	Journal of Environmental Management
Vivek, S., Srinivasan, K., Sharmila, B., Dharshan, Y., Panchal, H., Suresh, M., Ashokkumar, R., Sadasivuni, K.K., Elkelawy, M., Shrimali, N.	An Improved Quality Inspection of Engine Bearings Using Machine Vision Systems	Smart and Sustainable Manufacturing Systems
Al-Qahtani, W.H., Balasurya, S., Okla, M.K., Abdel-maksoud, M.A., Abdelgawad, H., Al-ghamdi, A.A., Thomas, A.M., Raju, L.L., Sudheer Khan, S.	Synthesis and application of CdS nanoparticles-decorated core-shell Ag@Ni nanohybrids for visible-light spectrophotometric assay of sulfide in aqueous sample	Spectrochimica Acta - Part A: Molecular and Biomolecular Spectroscopy
Charulatha, S., Dharrunya, H.V., Dhanamurugan, R., Devadharshini, R., Paul, D., Sinduja, M.E., Bindhu, J.	Evaluation of Antioxidant and Antimicrobial Potential of Green Synthesized Ag Nanoparticles from Ethanolic Leaf Extract of Thespesia populnea	Journal of Natural Remedies
Subramanian, K., Somachandran, R.S.	Synthesis of Castor Oil based Pristine and Silver Nanoparticle Embedded Polyurethanes and their Characterization by Thermal and Antibacterial Activity Analysis for Biomedical Applications	Asian Journal of Chemistry
Balasamy, K., Krishnaraj, N., Vijayalakshmi, K.	Improving the security of medical image through neuro-fuzzy based ROI selection for reliable transmission	Multimedia Tools and Applications
Janani, B., Al-amri, S.S., Okla, M.K., Mohebaldin, A., Soufan, W., Almunqedhi, B., Abdel-Maksoud, M.A., Abdelgawad, H., Thomas, A.M., Raju, L.L., Khan, S.S.	High performing p-n system of CaFe <sub>2</sub> O <sub>4</sub> coupled ZnO for synergetic degradation of Rhodamine B with white-light photocatalysis and bactericidal action	Journal of the Taiwan Institute of Chemical Engineers
Deepa, R., Devi, M.P., Vignesh, N.A., Kanithan, S.	Implementation and Performance Evaluation of Ferroelectric Negative Capacitance FET	Silicon
Akshhayya, C., Okla, M.K., Mohebaldin, A., AL-ghamdi, A.A., Thomas, A.M., Raju, L.L., Abdelgawad, H., Abdel-Maksoud, M.A., Khan, S.S.	Synthesis of novel p-n heterojunction by the decoration of CuFe <sub>2</sub> O <sub>4</sub> on ZnO nanorod: Characterization, enhanced visible light driven photocatalytic activity and intrinsic mechanism	Surfaces and Interfaces
Natarajan, N., Vasudevan, M., Dineshkumar, S.K., Nandhini, S.S., Balaganesh, P.	Effects of air pollution on monumental buildings in India: An overview	Environmental Science and Pollution Research

Authors	Article Title	Journal Name
Sujatha, G., Mohankumar, N., Poornachandran, R., Kumar, R.S., Mishra, G.S., Mahesh, V., Arunkumar, M.	Correction to: Noise Characterization of InAs Based Composite Channel DG -MOSHEMT with Different Gate Dielectrics (Silicon, (2022), 14, 5, (1925-1933), 10.1007/s12633-021-00954-3)	Silicon
Sujatha, G., Mohankumar, N., Poornachandran, R., Kumar, R.S., Mishra, G.S., Mahesh, V., Arunkumar, M.	Noise Characterization of InAs Based Composite Channel DG -MOSHEMT with Different Gate Dielectrics	Silicon
Davamani, V., Poornima, R., Arulmani, S., Parameswari, E., John, J.E., Deepasri, M.	Mitigation of nitrous oxide emission through fertigation and $\text{N}^{\text{a}}$ inhibitors A sustainable climatic crop cultivation in tomato	Science of the Total Environment
Janani, B., Okla, M.K., Abdel-Maksoud, M.A., AbdElgawad, H., Thomas, A.M., Raju, L.L., Al-Qahtani, W.H., Khan, S.S.	CuO loaded ZnS nanoflower entrapped on PVA-chitosan matrix for boosted visible light photocatalysis for tetracycline degradation and anti-bacterial application	Journal of Environmental Management
Janani, B., Syed, A., Raju, L.L., Bahkali, A.H., Al-Rashed, S., Elgorban, A.M., Ahmed, B., Thomas, A.M., Khan, S.S.	Designing intimate porous $\text{Al}_2\text{O}_3$ decorated 2D CdO nano-heterojunction as enhanced white light driven photocatalyst and antibacterial agent	Journal of Alloys and Compounds
Das, S., Sneha, R.G., Hukkeri, S.M.	Handcrafting of silk cut cocoons	Asian Textile Journal
Das, S., Natarajan, S.	Antibacterial activity of chitosan in textiles A review	Man-Made Textiles in India
Packiam, K.K., Imdhiyas, M., Sabarivasan, K., Madhankumar, D.	Studies on Antioxidants, Antibacterial activities and Phytochemistry of <i>Mimusops elengi</i> . Linn	Research Journal of Biotechnology
Paul, S., Vidusha, K., Thilagar, S., Lakshmanan, D.K., Ravichandran, G., Arunachalam, A.	Advancement in the contemporary clinical diagnosis and treatment strategies of insomnia disorder	Sleep Medicine
Hariprasad, V., Megalingam, A.	Mechanical and tribological behavior of friction stir processed AZ61/egg shell powder/ $\text{WS}_2$ Hybrid surface composite	Surface Topography: Metrology and Properties
Jayamurugan, P., Deivanayagi, S., Ashokan, S., Krishnan, V.G., Rao, N.V.S.S.S., Chandrasekaran, J., Massoud, E.E.S.	Impact of $\text{MnO}_2$ on the optical electrical and antibacterial characteristics of Graphite/Polyaniline Ternary composites	Journal of Materials Science: Materials in Electronics
AL-Shwaiman, H.A., Akshhayya, C., Syed, A., Bahkali, A.H., Elgorban, A.M., Das, A., Varma, R.S., Khan, S.S.	Fabrication of intimately coupled $\text{CeO}_2/\text{ZnFe}_2\text{O}_4$ nano-heterojunction for visible-light photocatalysis and bactericidal application	Materials Chemistry and Physics
Subhiksha, V., Kokilavani, S., Sudheer Khan, S.	Recent advances in degradation of organic pollutant in aqueous solutions using bismuth based photocatalysts: A review	Chemosphere
Ravichandran, G., Lakshmanan, D.K., Arunachalam, A., Thilagar, S.	Food obesogens as emerging metabolic disruptors; A toxicological insight	Journal of Steroid Biochemistry and Molecular Biology
Gurusamy, S., Sankarganesh, M., Sathish, V., Thanasekaran, P., Mathavan, A.	A novel colorimetric, selective fluorescent $\text{turn-off}$ chemosensor and biomolecules binding studies based on iodosalicylimine schiff-base derivative	Journal of Photochemistry and Photobiology A: Chemistry
Kulanthaivel, P., Selvakumar, S., Soundara, B., Kayalvizhi, V.S., Bhuvaneshwari, S.	Combined effect of nano-silica and randomly distributed fibers on the strength behavior of clay soil	Nanotechnology for Environmental Engineering

Authors	Article Title	Journal Name
Raaja Rajeshwari, M., Kokilavani, S., Sudheer Khan, S.	Recent developments in architecturing the g-C <sub>3</sub> N <sub>4</sub> based nanostructured photocatalysts: Synthesis, modifications and applications in water treatment	Chemosphere
Palanivel, V., Govindasamy, K., Arunachalam, G.K.	Optimization and prediction of pulsating heat pipe compound parabolic solar collector performances by hybrid deep belief network based bald eagle search optimizer	Environmental Progress and Sustainable Energy
Kishor, M.H., Madhu Mohan, M.L.N.	Calorimetric study of smectic x* and validation of dynamic memory in ferroelectric binary complexes	Journal of Thermal Analysis and Calorimetry
Subramanian, M., Sathanandam, S., Solomon, J.M., Sathyamurthy, R., Dhanraj, J.A., Kalisadan, B., Thakur, A.K., Said, Z.	Numerical and Experimental Investigation on Enhancing Thermal Conductivity of Paraffin Wax with Expanded Graphene in Battery Thermal Management System	International Journal of Environmental Research
Kannappan, P., Falcão, B.P., Asokan, K., Leitão, J.P., Dhanasekaran, R.	Insights into recombination channels in a CVT grown ZnSe single crystal	Applied Physics A: Materials Science and Processing
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Ajje, S.B., Sobhana, S., Sowmeeya, S.R., Nair, A.R., Raju, M.	Scalogram Based Heart Disease Classification using Hybrid CNN-Naive Bayes Classifier	2022 International Conference on Wireless Communications, Signal Processing and Networking, WiSPNET 2022
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<b>Palanisamy, A.M., Nataraj, R.V.</b>	A Novel Methodology to Ensure Data Integrity in Enterprise Information Systems Using Blockchain Technology	2022 1st International Conference on Electrical, Electronics, Information and Communication Technologies, ICEEICT 2022
<b>Nithya, R., Priya, V., Sathiya Kumar, C., Dheeba, J., Chandrababha, K.</b>	A Smart Parking System: An IoT Based Computer Vision Approach for Free Parking Spot Detection Using Faster R-CNN with YOLOv3 Method	Wireless Personal Communications
<b>Haldorai, A., Ramu, A.</b>	The Impact of Big Data Analytics and Challenges to Cyber Security	Research Anthology on Big Data Analytics, Architectures, and Applications
<b>Sangavi, N., Kiruthika, V.R., Premalatha, K.</b>	Impact of Classification Algorithms on Cervical Cancer Dataset	International Conference on Sustainable Computing and Data Communication Systems, ICSCDS 2022 - Proceedings
<b>Adaickalam, V., Manikandan, S.P., Kanagavalli, N., Dinesh, P.S.</b>	A Vibrant Multiple Object Detection Using Machine Learning Techniques	1st IEEE International Conference on Smart Technologies and Systems for Next Generation Computing, ICSTSN 2022
<b>Rohini, D., Sasikumar, C., Samiyappan, P., Dakshinamurthy, B., Koppula, N.</b>	Design & analysis of solid rocket using open rocket software	Materials Today: Proceedings
<b>Velmurugan, S., Sivakumar, K., Ramabalan, S.</b>	Impact of mixed tolerance combination on the geometric position and torques of a four-bar kinematic chain using genetic algorithm	Materials Today: Proceedings
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<b>Reji, A.K., Kumaresan, G., Kaushik, N., Navin Karthi, V.S., Naveen, M.K.</b>	Thermal analysis of grooved heat pipe with eco-friendly refrigerant for low heat loads in comparison to an ordinary thermosyphon	Materials Today: Proceedings
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<b>Gunasekaran, K., Boopathi, S., Sureshkumar, M.</b>	ANALYSIS OF A CRYOGENICALLY COOLED NEAR-DRY WEDM PROCESS USING DIFFERENT DIELECTRICS [ANALIZA KRIOGENSKO OHLAJENEGA SKORAJ POPOLNO SUHEGA PROCESA EROZIJE Z UPORABO RAZLIČENIH DIELEKTRIKOV]	Materiali in Tehnologije
<b>Moses, M.L., Ramkumarraja, M.</b>	An integrated AHP-ELECTRE and deep reinforcement learning methods for handover performance optimization in an LTE-A networks	Transactions on Emerging Telecommunications Technologies
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<b>Vadivel, Subramaniyan, C., Muthukumar, K., Bharani, T.</b>	Ergonomics hazards and risk assessment for the saw mill operations	Materials Today: Proceedings
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<b>Mahendiran, B., Azeez, N.A., Muthusamy, S., Krishnakumar, G.S.</b>	Polymer-based bionanomaterials for targeted drug delivery	Fundamentals of Bionanomaterials
<b>Mathan Kumar, P., Sivakumar, K., Vinu Kumar, S.M.</b>	EXPERIMENTAL INVESTIGATION OF ELECTRICAL DISCHARGE MACHINING OF INCONEL 718 USING A TiB <sub>2</sub> -Cu SINTERED COMPOSITE ELECTRODE [EKSPERIMENTALNE RAZISKAVE EROZIJSKE OBDELAVE SUPERZLITINE INCONEL 718 Z UPORABO SINTRANE KOMPOZITNE ELEKTRODE TiB <sub>2</sub> -Cu]	Materiali in Tehnologije
<b>Aswath, S., Bharanidharan, N., Valarmathi, R.S., Rajaguru, H.</b>	Modified Spotted Hyena Optimizer Based Leukemia Microscopic Images Classification	IFMBE Proceedings
<b>Sannasi Chakravarthy, S.R., Bharanidharan, N., Rajaguru, H.</b>	Fusion of Deep Features for Classification of Breast Cancer Using Multi-Deep CNNs	IFMBE Proceedings
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<b>Kathiresan, V., Karthik, S., Divya, P., Rajan, D.P.</b>	A Comparative Study of Diverse Intrusion Detection Methods using Machine Learning Techniques	2022 International Conference on Computer Communication and Informatics, ICCCI 2022
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<b>Selvakumar, M., Vijayakumar, T., Janani, R., Varatharajan, N., Kalaivani, P.</b>	Hybridization of a Novel Rheumatoid Arthritis prediction Model using Classifier and Optimizer Approach	2022 International Conference on Computer Communication and Informatics, ICCCI 2022
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Ramdass, A., Sathish, V., Thanasekaran, P.	AIE or AIE(P)E-active transition metal complexes for highly sensitive detection of nitroaromatic explosives	Results in Chemistry
Baranidharan, V., Hariprasath, N., Tamilselvi, K., Vignesh, S., Chandru, P., Srinigha, A., Yashwanthi, V.	Modified Gaussian Mixture Distribution-Based Deep Learning Technique for BeamSpace Channel Estimation in mmWave Massive MIMO Systems	Lecture Notes in Electrical Engineering
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Deepika, J., Rajan, C., Senthil, T.	Improved CAPSNET model with modified loss function for medical image classification	Signal, Image and Video Processing

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<b>Soundarya, B., Parkavi, K., Sharmila, A., Kokiladevi, R., Dharani, M., Krishnaraj, R.</b>	CNN Based Smart Bin for Waste Management	Proceedings - 4th International Conference on Smart Systems and Inventive Technology, ICSSIT 2022
<b>Sharmila, A., Dhivya Priya, E.L., Anand, K.R.G., Sujin, J.S., Soundarya, B., Krishnaraj, R.</b>	Fruit Recognition Approach by Incorporating Multilayer Convolution Neural Network	Proceedings - 4th International Conference on Smart Systems and Inventive Technology, ICSSIT 2022
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<b>Baranidharan, V., Subburajulu, D., Niveditha, S., Arun Prasad, V.S., Sutar, M., Manoj Kumar, S., Ramya, R.</b>	Modified Geometric Mean Decomposition and Orthogonal Matching Pursuit Based Hybrid Precoding for Millimeter-Wave Massive MIMO Systems	Lecture Notes on Data Engineering and Communications Technologies
<b>Prabhu, A., Sudha, V., Pachamuthu, M.P., Sundaravel, B., Bellucci, S.</b>	Ultrasonic Synthesis of Al-SBA-15 Nanoporous Catalyst for t- Butylation of Ethylbenzene	Journal of Nanomaterials
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<b>Malathi, L., Bharathi, A., Jayanthi, A.N., Narmatha, C.N.</b>	FPGA Implementation of Adaptive NMLS Algorithm: Timbre Based Filtering from Multiple Harmonics using FIR Filters	Proceedings of 2022 2nd International Conference on Computing and Information Technology, ICCIT 2022
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<b>Thirumurugan, V., Shreelaleitha, G., Ashok Kumar, A., Alagusadasivam, M., Karthikeyan, R., Kavin, M.</b>	A review on silk with soy fibre yarn	Asian Textile Journal

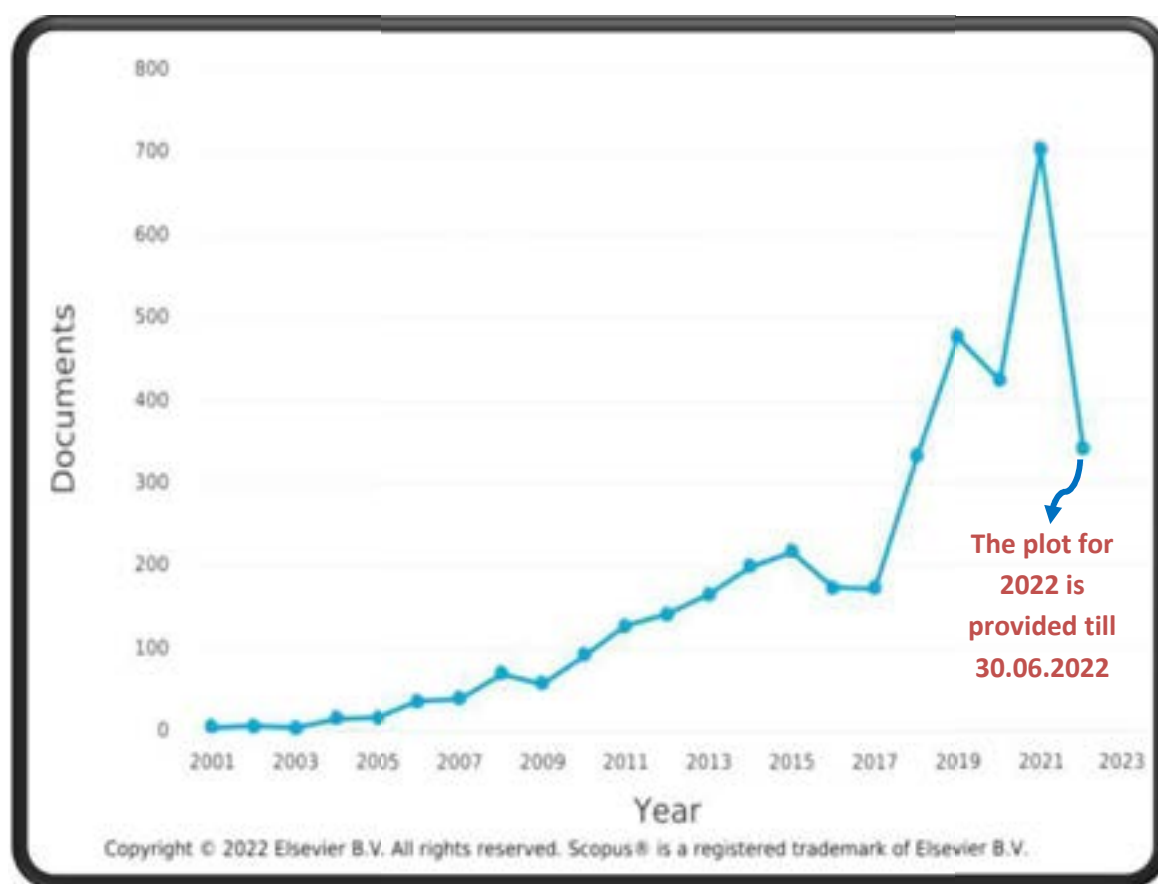
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Balaganesh, P., Vasudevan, M., Natarajan, N.	Evaluating sewage sludge contribution during co-composting using cause-evidence-impact analysis based on morphological characterization	Environmental Science and Pollution Research
Sureshkumar, S., Krishnan, S.S., Rubesh Anand, P.M., Prajapati, A., Chaudhari, L.	Orthogonally crossed triangular monopole antenna for octave band frequencies	International Journal of Electronics Letters
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<b>Babu, N., Megalingam, A.</b>	Microstructural, mechanical and tribological characterization of ZrB <sub>2</sub> reinforced AZ31B surface coatings made by friction stir processing	Journal of Adhesion Science and Technology
<b>Rajaguru, H., Sannasi Chakravarthy, S.R.</b>	Performance Comparison of Machine Learning Algorithms in Identifying Dry and Wet Spells of Indian Monsoon	Lecture Notes in Networks and Systems
<b>Vasudevan, M., Natarajan, N.</b>	Towards achieving sustainable bioplastics production and nutrient recovery from wastewater—a comprehensive overview on polyhydroxybutyrate	Biomass Conversion and Biorefinery
<b>Sakthiya Ram, S., Kumar, C., Ramesh Kumar, A., Rajesh, T.</b>	Hybrid optimization techniques based automatic artificial respiration system for corona patient	Automatika
<b>Sannasi Chakravarthy, S.R., Rajaguru, H.</b>	Ensemble-Based Weighted Voting Approach for the Early Diagnosis of Diabetes Mellitus	Lecture Notes on Data Engineering and Communications Technologies
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<b>Karthikamani, R., Rajaguru, H.</b>	Detection of Liver Cirrhosis in Ultrasonic Images from GLCM Features and Classifiers	IFMBE Proceedings
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<b>Chakravarthy, S.R.S., Rajaguru, H.</b>	Voting Based CAD Model for Breast Cancer Classification	IFMBE Proceedings
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Authors	Article Title	Journal Name
Saravanan, K., Ramesh, K., Hema, V.S.V., Viganesh, S.	An Exploratory Study of Disaster Risk Management Mobile Applications in Pandemic Periods	Studies in Computational Intelligence
Subasri, R., Meenakumari, R., Panchal, H., Suresh, M., Priya, V., Ashokkumar, R., Sadasivuni, K.K.	Comparison of BPN, RBFN and wavelet neural network in induction motor modelling for speed estimation	International Journal of Ambient Energy
Das, S., Wahi, A., Kumar, S.M., Mishra, R.S., Sundaramurthy, S.	Moment-Based Features of Knitted Cotton Fabric Defect Classification by Artificial Neural Networks	Journal of Natural Fibers
Amutha, K., Sudha, A., Saravanan, D.	Characterization of Natural Fibers Extracted from Banana Inflorescence Bracts	Journal of Natural Fibers
Hemanth, G.R., Charles Raja, S., Jeslin Drusila Nesamalar, J., Senthil Kumar, J.	Cost effective energy consumption in a residential building by implementing demand side management in the presence of different classes of power loads	Advances in Building Energy Research

### BIT's Publication Journey



## Ph.D. Awarded Research Scholars

Name of the Scholar	FT/PT	Date of Viva Voce	Name of the Supervisor
Jeya Prakash R	PT	04.01.2022	Dr Soundara B
Sathish D	PT	07.01.2022	Dr Jegadheeswaran S
Subhasri P	FT	07.01.2022	Dr Vijayakumar V N
Ramya A	FT	07.01.2022	Dr Vijayakumar V N
Ramya P	PT	07.01.2022	Dr Valarmathi R S
Manooj Kumaar S B	PT	11.01.2022	Dr Poongodi C
Balaganesh P	FT	11.01.2022	Dr Vasudevan M
Jayaraman A	PT	11.01.2022	Dr Senthilkumar V
Bhuvaneswari S	PT	19.01.2022	Dr Sivaraman P
Purusothaman P	PT	21.01.2022	Dr Gunasekaran M
Velmurugan S	PT	30.03.2022	Dr Sivakumar K
Aratrika Sarkar	FT	30.03.2022	Dr R Ravikumar
Sathish Kumar G	PT	27.04.2022	Dr Premalatha K
Sathish Kumar T R	PT	07.06.2022	Dr Jegadheeswaran S
Mohanraj A	PT	08.06.2022	Dr Senthilkumar V
Tajdeen A	PT	15.06.2022	Dr Megalingam A
Sundar Raju G	PT	24.06.2022	Dr Sivakumar K
Sivaraj G	PT	02.02.2022	Dr Parammasivam K M
Rajesh Kanna P	PT	21.04.2022	Dr Santhi P
Suresh Kumar M	PT	26.04.2022	Dr Boopathi S
Sajan P Philip	PT	18.05.2022	Dr Sampath P
Deepika J	PT	30.05.2022	Dr Rajan C
Shankar N	PT	30.06.2022	Dr Saravanakumar N

## Completed Funded Projects

### 1. GANESH BABU C, PROFESSOR,EIE

Proposal

**UNICEF SPONSORED YOUNG WARRIORS - ENGAGING COMMUNITIES FOR PREVENTION OF COVID-19 AND PROMOTION OF COVID VACCINATION INCLUDING HESITANCY AND EAGERNESS**

Objective(s) of Proposal

**PREVENTION OF COVID-19 PROGRAMME IN BACR THROUGH COMMUNITY RADIO ASSOCIATION**

Sanctioned Amount (in Rs.) :**36000**

Duration :**3 MONTHS**



### 2. TAMILSELVI S - BT

Proposal

**NUTRACEUTICALS BASICS AND BEYOND**

Sanctioned Amount (in Rs.) :**93000**

FUNDING AGENCY : **AICTE ATAL**



### 3. NIRMALADEVI J - ISE

Proposal

**BEHAVIOURAL SIGNAL PROCESSING TOOLS AND TECHNIQUES FOR THE EMOTIONAL ANALYSIS IN AUTISM CHILDREN**

Sanctioned Amount (in Rs.) :**150000**

FUNDING AGENCY : **KARYASHALA**

Scope of Proposal

**THIS COURSE WILL BE CONDUCTED UNDER ACCELERATE VIGYAN SCHEME INTENDED TOWARDS ABHYAAS MISSION TO UNDERSTAND THE NEED AND IMPORTANCE TO UNDERSTAND BEHAVIOURAL SIGNAL PROCESSING TOOLS AND TECHNIQUES FOR THE EMOTIONAL ANALYSIS IN AUTISM CHILDREN FOR THE YOUNG AND ASPIRANT RESEARCHERS TO HAVE THE OPPORTUNITY TO KNOW THE CURRENT RESEARCH ISSUES AND THE TOOLS TO ANALYSE THE BEHAVIOUR OF AUTISM CHILDREN.**



### 4. JEGADHEESWARAN S – AE

Proposal

**PEDAGOGY AND ASSESSMENT THROUGH DIGITAL LEARNING PLATFORM**

Sanctioned Amount (in Rs.) :**93000**

FUNDING AGENCY :**AICTE –ISTE**



#### 5. RAJALASHMI K - EEE

Proposal

**ENTREPRENEURSHIP DEVELOPMENT TRAINING ON VALUE ADDED AGRIPRODUCT SOLAR DRYER FOR THE EMPOWERMENT OF THE TRIBAL WOMEN IN KADAMBUR HILLS, SATHYAMANGALAM**

Sanctioned Amount (in Rs.) : **50000**

FUNDING AGENCY : **TNSCST**



#### 6. SUBRAMANIAN K - BT

Proposal

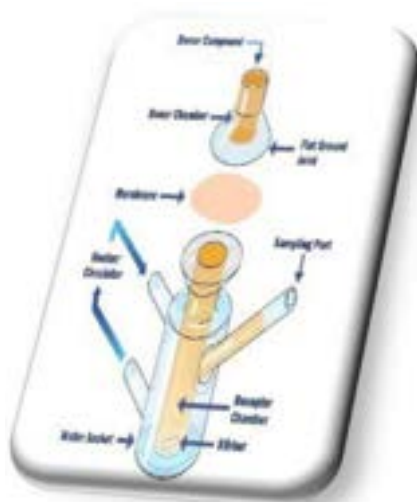
**(SYNTHESIS AND CHARACTERIZATION OF THERMOREVERSIBLE HYDROGEL FOR CONTROLLED DELIVERY DRUGS)**

Objective(s) of Proposal

**POLYMER HYDROGEL WITH LCST IN THE TEMPERATURE RANGE 30 DEGREE CENTIGRADE TO 37 DEGREE CENTIGRADE FOR CONTROLLED AND TARGETTED DRUG DELIVERY**

Sanctioned Amount (in Rs.): **7500**

FUNDING AGENCY : **TNSCST**



**7. SUBRAMANIYAN C - ME**

Proposal

**AUTOMATIC MULTI CROPS HARVESTING MACHINE FOR ROOT VEGETABLES (CARROT, BEETROOT, ONION, AND GARLIC), FLOWER VEGETABLES (CABBAGE, CAULIFLOWER) FOR SMALL SCALE AND MEDIUM SCALE FARMERS IN TAMILNADU**

Sanctioned Amount (in Rs.): **7500**

FUNDING AGENCY : **TNSCST**



**8. ASHWIN RAJ S - BT**

Proposal

**A NOVEL INTENSIFIED TECHNOLOGY FOR PRODUCTION OF BIOBUTANOL FROM WASTE MUSHROOM SPENT BY BIOLOGICAL TREATMENT**

Sanctioned Amount (in Rs.): **7500**

FUNDING AGENCY : **TNSCST**



#### 9. RAJU C – EC

Proposal

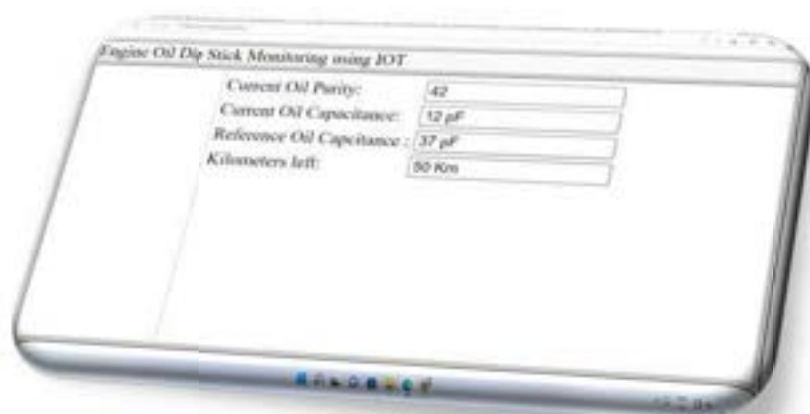
##### **A PORTABLE IOT BASED DIPSTICK TYPE ENGINE OIL LEVEL AND IMPURITIES MONITORING SYSTEM**

Sanctioned Amount (in Rs.): **7500**

FUNDING AGENCY : **TNSCST**

Scope of Proposal

**THE PRESENT INVENTION GENERALLY RELATES TO A SYSTEM AND METHOD FOR DESIGN AND DEVELOPMENT OF AN IOT BASED OIL IMPURITIES AND LEVEL MONITORING DEVICE AND ITS OPERATIONAL METHODOLOGY. ENGINE OIL AND LUBRICATING OIL IN INTERNAL COMBUSTION ENGINES ARE EXPOSED TO VARYING STRAINS DEPENDING ON THE OPERATING CONDITIONS AND THE FUEL QUALITY THEREFORE IT IS ESSENTIAL TO MAINTAIN THE QUALITY OF ENGINE OIL AND LUBRICATING OIL SO AS TO MINIMIZE THE FRICTION WITHIN THE ENGINE**



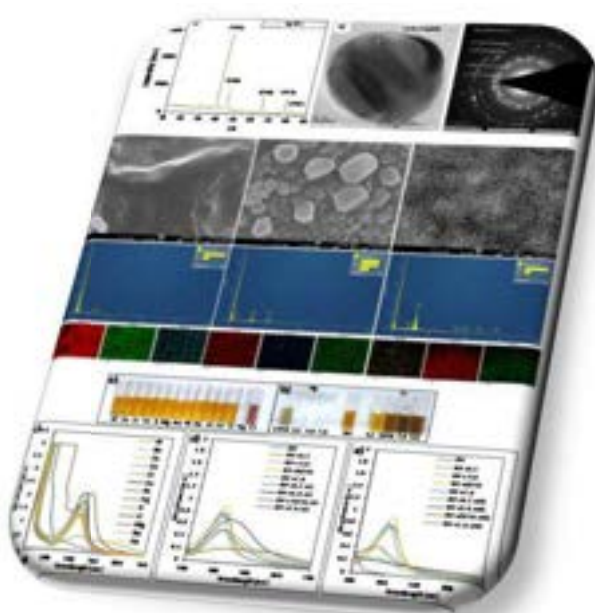
#### 10. SUDHEER KHAN S - BT

Proposal

##### **DETECTION OF HEAVY METALS BY USING SILVER BASED NANOMATERAILS**

Sanctioned Amount (in Rs.): **7500**

FUNDING AGENCY : **TNSCST**



11. VINOTHINI BT  
Proposal  
**SOLIDER STRAP**  
Sanctioned Amount (in Rs.): **7500**  
FUNDING AGENCY : **TNSCST**

12. Archana J  
Proposal  
**CO<sub>2</sub> ENRICHMENT PLANTS FROM FACTORY EMISSIONS**  
Sanctioned Amount (in Rs.): **7500**  
FUNDING AGENCY : **TNSCST**

13. **NIMKAR AMEY SANJAY** Agriculture Engineering  
Proposal  
**DESIGN DEVELOPMENT OF AGRIBOT WEEDER**  
Sanctioned Amount (in Rs.): **7500**  
FUNDING AGENCY : **TNSCST**

14. **JAYANTHI V** Civil Engineering  
Proposal  
**INNOVATIVE UTILIZATION OF AGRO WASTES IN EXPANSIVE SOIL STABILIZATION**  
Sanctioned Amount (in Rs.): **7500**  
FUNDING AGENCY : **TNSCST**

## Sanctioned Funded Projects

**1. SANJOY DEB-ECE**  
Proposal  
**Design and Field Installation of Multiple Road kill Prevention System Units under a Large Scale Wildlife Safety Initiative**  
Objective(s) of Proposal  
**TO DESIGN, DEVELOP AND VALIDATE ROADKILL PREVENTION SYSTEM**  
Sanctioned Amount (in Rs.) : **8,53,704**  
Duration : **3 YEARS**  
AGENCY : **RUFFORD SMALL GRANT, UK**

**2. SIVARAMAN P – EEE**  
Proposal  
**DEVELOPMENT OF INTEGRATED 6- PHASE ELECTRIC DRIVE SYSTEM FOR HYBRID/ELECTRIC VEHICLES AND TO PROMOTE SUSTAINABLE AGRICULTURE IN RURAL AREAS**  
Sanctioned Amount (in Rs.) : **1374333**  
Duration : **3 YEARS**  
AGENCY : **AICTE RPS**  
Scope of Proposal  
**The rural people are highly dependent on public transportation that is not available during the pandemic situation.**

In future, with the proposed system the reduced size and cost of the electric vehicle making it feasible for rural people to be connected with towns for emergency. Also, it reduces the impact of co2 emission caused by internal combustion engines resulting replacement of fossil fuel with battery-operated vehicles. The proposed system offers an integrated inverter along with the motor resulting in reduced which is very compatible with 2&3 wheeler, small cars, public & last-mile transportation for rural people.



## Ongoing Funded Projects

1. **Autonomous robotic manipulator for order picking task integrated with visula servoing, impedance control schemes and ASRS**

**Investigator :** Dr K L Senthil Kumar, Professor, Dept. of MTRS and Head - Academics

**Grant :** Rs.8,51,769/-

**Funding agency :** AICTE

This project integrates different sensors like vision, force to automate the order picking or retrieving task appropriately based on the order, for packaging or dispatching in a warehouse.

2. **Technological interventions for enhancing productivity, scalability and value addition to obtain fiber from a local plant (*Urtica dioica*) for tribals in Nagaland**

**Investigator :** Dr R Deepa, Assistant Professor (Level III), Department of EIE

**Funding agency :** DST - SEED

**Grant :** Rs. 68,82,120/-



3. **Design and Development of Wireless Automatic quality domestic water Distribution and wastage reduction management system with PLC controller and IOT implementation, for Athiyappagoundan Pudur Village, Sathyamangalam, Erode district, Tamil Nadu**

**Investigator :** Dr.C.Ganeshbabu, Professor , Department of EIE

**Funding agency :** AICTE – RPS

**Grant :** Rs. 3,65,898/-

4. **Design, Development and Validation of Thermocycler and Real-Time Cycler**

**Investigator :** Dr K S Vairavel, Assistant Professor (Level III), Department of EIE

**Funding agency :** DST - Instrumentation Development Programme (IDP)

**Grant :** Rs.34,46,000/-



## Funding Proposals Submitted

Faculty Name	Name of the Project	Amount (in Rs.)
<b>Abdul Azeez N</b>	Transdermal drug delivery across the lipid deprived dry skin using optimized metal organic framework	2437500
<b>Anandha Moorthy A</b>	Natural polymer material for bone replacement	1000000
<b>Arulmurugan L</b>	Smart agriculture using AI & IOT	1686000
<b>Ashwin Raj S</b>	A novel intensified technology for production of biobutanol from waste mushroom spent by biological treatment	7500
<b>Balakrishnaraja R</b>	Nutraceuticals and nutritional supplements	400000
<b>Bazila Banu A</b>	An international conference on "artificial intelligence and blockchain" icab 22	1381293
<b>Bazila Banu A</b>	An international conference on "artificial intelligence and blockchain" icab 22	1200000
<b>Bharathi A</b>	Smart communication assisting device for hearing disorder humans	5860000
<b>Bharathiraja M</b>	Studies, development and testing of pem fuel cell for electric two wheeler application	6356802
<b>Daniel Madan Raja S</b>	Detecting spam and malicious bots with emotional analysis on twitter data streams	300000
<b>Deepa D</b>	A scalable image quality transfer approach for differential diagnosis of dementia using mr oximetry at low field strengths	3576000
<b>Deepa D</b>	Personalizing health care treatment for diagnosis and prognosis of breast cancer on big data platform	2990000
<b>Deepankumar S</b>	Hudrogen combustion	500000
<b>Dhinesh S K</b>	Hi-tech drone for mining applications	937000
<b>Dinesh D</b>	Ronotics and automation in industry 4.0	300000
<b>Dinesh Kumar L</b>	Profiling and development of exosome based novel anti	2050000
<b>Eswaramoorthy V</b>	Development of artificial intelligent based mobile application for prediction of water quality using iot	1270000
<b>Ganesh Babu C</b>	Programme for bridging the gap in research funding for research scholars in colleges	300000

Faculty Name	Name of the Project	Amount (in Rs.)
<b>Goldvin Dhas Sugirtha</b>	Lyapunov theory based performance analysis of pv system with second order sliding mode controlled ultra lift Luo converter	1139500
<b>Gomathi R</b>	Tools and techniques used for traffic prediction using machine learning	1476000
<b>Gomathi R</b>	Automated disease diagnosis and prediction using machine learning models	500000
<b>Gowthami S</b>	Personalizing health care treatment for diagnosis and prognosis of breast cancer on big data platform	2965000
<b>Indirani C</b>	On intuitionistic fuzzy semi supra open set and semi supra continuous functions	50000
<b>Kamatchi Kannan V</b>	Advanced solar panel laminating machine with testing features and online data acquisition	5572000
<b>Kumaresan G</b>	Development of indigenous evacuated tube solar still for potable water productivity enhancement during off sun light hours	2940825
<b>Logeswari S</b>	Tools in robotic process automation for business automation	500000
<b>Manojkumar P</b>	Sensing and analyzing of fish farming using iot	1763500
<b>Murali Krishnan M</b>	Naphthalocyanine dyad as photosensitizer for photodynamic therapy: a computational approach	1372800
<b>Nandagopal M</b>	Improvements of casting quality and working environment in advanced green sand moulding process	3000000
<b>Nirmaladevi J</b>	Behavioural signal processing tools and techniques for the emotional analysis in autism children	150000
<b>Padmashree A</b>	Detection and mitigation of attacks on internet of things using deep learning	500000
<b>Pavithra MKS</b>	Development of immunochromatographic assay using merozoite surface proteins for serological diagnosis of plasmodium infection	3572000
<b>Perarasi T</b>	Smart chair	2946217
<b>Poongodi C</b>	Smart antenna design for bmw applications	300000

Faculty Name	Name of the Project	Amount (in Rs.)
<b>Prakash K B</b>	3d Printable Hyperelastic Bone For The Medical Industry Applications	2374000
<b>Premalatha K</b>	Bioinformatics	30000
<b>Premalatha K</b>	Deep learning techniques for speech and image processing	300000
<b>Pushpavalli M</b>	Smart agriculture using ai & iot	1686000
<b>Rajalashmi K</b>	Optimization and cybersecurity challenges in smart power grids	300000
<b>Rajalashmi K</b>	Portable environment friendly low cost automated cow dung paper making machine	240000
<b>Raju C</b>	A portable iot based dipstick type engine oil level and impurities monitoring system	7500
<b>Ramya P</b>	Design development field trial of aquatic electric field generator	300000
<b>Ramya P</b>	Design development field trial of aquatic electric field generator	1803425
<b>Ravi Kumar M</b>	Southern india tropical optimized energy consumption based solar panel cleaning system with augmentation of various techniques.	6363000
<b>Sadasivam K</b>	Efficacy analysis of flavonoids against dengue virus docking, admet and dft investigations	1049000
<b>Saran Kumar A</b>	Traffic sign recognition system	7500
<b>Shoukath Ali K</b>	Smart chair	2946217
<b>Srinivasan M</b>	Energy management and conservation system in mines using iot	8976770
<b>Subrata Das</b>	Sustainable processing	1463000
<b>Sudheer Khan S</b>	Detection of heavy metals by using silver based nanomaterials	7500
<b>Sudheer Khan S</b>	Pcod detection kit	3256000
<b>Tamilselvan S</b>	Iot based waste management system	1000000
<b>Tamilselvan S</b>	Iot based waste management system	1000000
<b>Vijay Franklin J</b>	Design and development of epilepsy seizure prediction system	322416

## Student Publications

Student Name	Article Title	Journal Name
<b>ABISHREE M</b>	DEVELOPMENT AND OPTIMIZATION OF ICE CREAM BY INCORPORATING THE LEAVES OF AMARANTHUS CRUENTUS	INTERNATIONAL JOURNAL OF ADVANCES IN ENGINEERING AND MANAGEMENT
<b>AGILESH R</b>	IOT BASED SMART AGRICULTURE	JOURNAL OF MANUFACTURING ENGINEERING
<b>AHAMED HUSSAIN A</b>	OPTIMIZATION OF AXIAL FLUX PERMANENT MAGNET GENERATOR FOR LOW “SPEED WIND TURBINE APPLICATIONS USING GENETIC ALGORITHM	THE INTERNATIONAL JOURNAL OF ELECTRICAL ENGINEERING AND TECHNOLOGY (IJEET)
<b>AKILAN M</b>	ARTIFICIAL INTELLIGENCE BASED CCTV ACCIDENT DETECTION AND NEARBY PATROL ALERT SYSTEM	INTERNATIONAL RESEARCH JOURNAL OF ENGINEERING AND TECHNOLOGY (IRJET)
<b>AMBIKA K</b>	IMPLEMENTATION OF MULTI-INPUT ZCS BASED MULTI LEVEL INVERTOR FOR RENEWABLE ENERGY SOURCES	IEEE-STCR 2021
<b>AROCKIA JOSHWA J</b>	PREDICT LOAN ELIGIBILITY USING MACHINE LEARNING	INTERNATIONAL JOURNAL OF INNOVATIVE SCIENCE,ENGINEERING AND TECHNOLOGY(IJISSET)
<b>ASRATH J</b>	IOT BASED AGRICULTURE	JOURNAL OF MANUFACTURING ENGINEERING
<b>BHUVAN R</b>	FACE MASK AND TEMPERATURE DETECTION	INTERNATIONAL JOURNAL OF INNOVATIVE SCIENCE AND TECHNOLOGY
<b>BHUVAN R</b>	HASSLE FREE TAX CALCULATION WITH BARCODE USING ANDROID APP	INTERNATIONAL JOURNAL FOR ENGINEERING AND TECHNOLOGY
<b>CHERAN K</b>	"OPTIMIZATION OF AXIAL FLUX PERMANENT MAGNET GENERATOR FOR LOW“SPEED WIND TURBINE APPLICATIONS USING GENETIC ALGORITHM"	INTERNATIONAL JOURNAL OF ELECTRICAL ENGINEERING AND TECHNOLOGY
<b>CHITHRA A</b>	A REVIEW ON REMOVAL STRATEGIES OF MICROORGANISMS FROM WATER ENVIRONMENT USING NANOMATERIALS AND THEIR BEHAVIOURAL CHARACTERISTICS	CHEMOSPHERE

Student Name	Article Title	Journal Name
CHITHRA A	AN APODICTIC REVIEW ON RECENT APPROACHES IN ENZYME TECHNOLOGY	BIOINTRFACE RESEARCH IN APPLIED CHEMISTRY
DEEPAK KUMAR S	SANITIZATION USING HEXACOPTER AUTONOMOUS DRONE	SCI INDEX
DHANUSHREE S	AI ALGORITHM BASED JACKET EJECTION FOR AUTOMATIC SECURITY SYSTEM IN WATER BODIES	TURKISH JOURNAL OF COMPUTER AND MATHEMATICS EDUCATION
DHARSHINI S	HASSLE FREE TAX CALCULATION USING ANDROID APP WITH BARCODE	INTERNATIONAL RESEARCH JOURNAL OF ENGINEERING AND TECHNOLOGY
DHARSHINI V S	ARTIFICIAL INTELLIGENCE IN ROBOTICS	ARTIFICIAL INTELLIGENCE IN ROBOTICS
DHYANESH H	HEALTH CARE INSURANCE APPLICATION	HEALTH CARE INSURANCE APPLICATION
GEETHAPRIYA B	DEVICE DISCOVERY IN D2D COMMUNICATION: A SURVEY	INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH IN SCIENCE AND ENGINEERING
GNANADESIGAN R	PERFORMANCE ANALYSIS OF THE CLASSIFICATION OF BREAST CANCER	2021 THIRD INTERNATIONAL CONFERENCE ON INVENTIVE RESEARCH IN COMPUTING APPLICATIONS (ICIRCA)
GOKUL E	WOMEN SAFETY PRECAUTION USING IMAGE PROCESSING	INTERNATIONAL CONFERENCE ON SOFT COMPUTING AND INTELLIGENT TECHNOLOGIES [ICSCITâ€ 2021] CHERAN COLLEGE OF ENGINEERING
GOKUL RAJ R	SMART GLOVES FOR DISABLED PEOPLE	INTERNATIONAL JOURNAL FOR SCIENCE AND ADVANCE RESEARCH IN TECHNOLOGY
HARIHARAN K	EDGE CLOUD COMPUTING FOR IOT DATA ANALYTICS: EMBEDDING INTELLIGENCE IN THE EDGE WITH MACHINE LEARNING	INTERNATIONAL RESEARCH JOURNAL OF ENGINEERING AND TECHNOLOGY (IRJET)

Student Name	Article Title	Journal Name
HARIHARAN S	IOT ENABLED HEAVY DUTY ELECTRICAL VEHICLES ON TRANSPORTATION AND LOGISTICS INDUSTRY	GIS SCIENCE JOURNAL
HARIHARAN S	REVIEW ON ELECTRIC TWO WHEELER CHARGES AND INTERNATIONAL STANDARDS	INNOVATION IN POWER AND ADVANCED COMPUTING TECHNOLOGIES
HARIHARASUTHAN N	E-AGRICULTURE AND RURAL DEVELOPMENT IN INDIA	INTERNATIONAL JOURNAL OF RESEARCH PUBLICATION AND REVIEWS
HARIKUMAR B	CHITOSAN CAPPED AG/NIS NANOCOMPOSITE:A NOVEL COLERIMETRIC DETECTION OF L-CYSTEINE AT NANOMOLAR AND ITS ANTIMICROBIAL ACTIVITY	INTERNATINOL JOURNAL OF BIOLOGICAL MACROMOLECULES
HARIKUMAR B	NANO AGO DECORATED-SILICA MATRIX FOR THE REMEDIATION OF ENVIRONMENTAL POLLUTANTS: VISIBLE-LIGHT DRIVEN CR(VI) PHOTOREDUCTION, PHOTODEGRADATION OF ORGANIC DYE, NANOMOLAR HG2+ DETECTION, AND ANTIMICROBIAL APPLICATIONS	JOURNAL OF THE TAIWAN INSTITUTE OF CHEMICAL ENGINEERS
HARINI G	FABRICATION OF MNFE2O4 SPHERES MODIFIED CEO2 NANO-FLAKES FOR SUSTAINABLE PHOTODEGRADATION OF MB DYE AND ANTIMICROBIAL ACTIVITY: A BRIEF COMPUTATIONAL INVESTIGATION ON REACTIVE SITES AND DEGRADATION PATHWAY	COLLOIDS AND SURFACES A: PHYSICOCHEMICAL AND ENGINEERING ASPECTS
HARINI G	RECENT ADVANCES ON GADOLINIUM-BASED NANOPHOTOCATALYSTS FOR ENVIRONMENTAL REMEDIATION AND CLEAN ENERGY PRODUCTION: PROPERTIES, FABRICATION, DEFECT ENGINEERING AND TOXICITY	JOURNAL OF CLEANER PRODUCTION
HARINI G	SUNLIT EXPEDITIOUS VISIBLE LIGHT MEDIATED PHOTO-FENTON DEGRADATION OF CIPROFLOXACIN BY EXFOLIATION OF NICO2O4 AND ZN0.3FE2.7O4 OVER G-C3N4 MATRIX: A BRIEF INSIGHT ON DEGRADATION MECHANISM, DEGRADED PRODUCT TOXICITY AND GENOTOXIC EVALUATION IN ALLIUM CEPA	CHEMOSPHERE
HARISH G	AIR QUALITY MONITORING SYSTEM FOR GAS LEAKAGE USING IOT WITH VERY LOW COST	INTERNATIONAL RESEARCH JOURNAL OF ENGINEERING AND TECHNOLOGY (IRJET)

Student Name	Article Title	Journal Name
HARRINI V	IMPLEMENTATION OF MULTI-INPUT ZCS BASED MULTI LEVEL INVERTER FOR RENEWABLE ENERGY SOURCES	IEEE-STCR 2021
HARSHINI M	PHARMACEUTICAL APPLICATIONS OF BIOMEDICAL PRODUCTS TO PREVENT WOUND CAUSING BACTERIAL INFECTIONS	IJRAR
HIRTHICK GUHAN E K	STABILITY ANALYSIS OF BALL AND BEAM SYSTEM USING PID CONTROLLER	STABILITY ANALYSIS OF BALL AND BEAM SYSTEM USING PID CONTROLLER
JANANI B	DESIGNING INTIMATE POROUS AL <sub>2</sub> O <sub>3</sub> DECORATED 2D CDO NANO-HETEROJUNCTION AS ENHANCED WHITE LIGHT DRIVEN PHOTOCATALYST AND ANTIBACTERIAL AGENT	JOURNAL OF ALLOYS AND COMPOUNDS
JANANI B	FACILE CONSTRUCTION OF 3D CDS-AG <sub>2</sub> S NANOSPHERES: A COMBINED STUDY OF VISIBLE LIGHT RESPONSIVE PHTOTOCATALYSIS, ANTIBACTERIAL AND ANTI-BIOFILM ACTIVITY	COLLOIDS AND SURFACES A: PHYSICOCHEMICAL AND ENGINEERING ASPECTS
JANANI M	DESIGN AND OPTIMIZATION OF PLC BASED AUTOMATIC ROVING MACHINE FLYER SPEED CONTROL USING VFD	SCOPUS
JANANI R	PHARMACEUTICAL APPLICATION OF BIOMEDICAL PRODUCTS TO PREVENT WOUND CAUSING BACTERIAL INFECTION	INTERNATIONAL JOURNAL OF RESEARCH AND ANALYTICAL REVIEW
JAYA MURUGAN R	MODIFIED COMPRESSIVE SENSING AND DIFFERENTIAL OPERATION BASED CHANNEL FEEDBACK SCHEME FOR MASSIVE MIMO SYSTEMS FOR 5G APPLICATIONS	SMART INNOVATION SYSTEM ANFD TECHNOLOGIES
JAYADARSHAN N S	REVIEW ON ELECTRIC TWO WHEELER CHARGERS AND INTERNATIONAL STANDARDS	IEEE XPLORE
JEGADEESWARI J S	SOCIAL DISTANCE REMAINDER	INTERNATIONAL JOURNAL OF ADVANCED ENGINEERING SCIENCE AND INFORMATION TECHNOLOGY (IJAESIT)
JIDESH T	HOME CARE SMART BED FOR POST CHILDHOOD PEOPLE	INTERNATIONAL JOURNAL OF ELECTRICAL ENGINEERING AND TECHNOLOGY (IJEET)

Student Name	Article Title	Journal Name
JOSHUA ROBERT J	FUZZY CONTROL OF ACTIVE SUSPENSION SYSTEM BASED ON QUARTER CAR MODEL	ELSEVIER
JOSHUA ROBERT J	RECENT TRENDS IN ADDITIVE MANUFACTURING OF ELECTRONICS DEVICES	ELSEVIER
KARTHIKAA K S, NANDHINI C PRASANTH S	A HIGH-EFFICIENT JOINT CLOUD-EDGE AWARE STRATEGY FOR TASK DEPLOYMENT AND LOAD BALANCING	INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH IN SCIENCE AND ENGINEERING
KAVIN KARTHIKEYAN KAVIN M	M, R, ANALYSE THE DIMENSIONAL PROPERTIES OF THE SILK WITH SOY FIBRE YARN FABRIC	IRJET
KAVIYARASU S	MODELLING AND CONTROL OF A BIDIRECTIONAL DC -DC CONVERTER FED DRIVE FOR ELECTRIC VEHICLE SYSTEM	INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH IN SCIENCE, ENGINEERING AND TECHNOLOGY
KEERTHANA N	FINGERPRINT INTEGRATED E-HEALTH MONITORING SYSTEM USING IOT	MICROELECTRONIC DEVICES, CIRCUITS AND SYSTEMS
KISHORE S	CLASSIFICATION OF GROUNDNUT OIL USING ADVANCED ATR-MIR SPECTROSCOPY AND CHEMOMETRICS	FOOD METHODS ANALYTICAL
KOUSHIKA K S	DEVICE DISCOVERY IN D2D COMMUNICATION: A SURVEY	INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH IN SCIENCE AND ENGINEERING
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MATHAN A	INVESTIGATION ON THE EFFECT OF STACKING SEQUENCE ON MECHANICAL PROPERTIES OF A BASALT AND CARBON FIBER HYBRID COMPOSITE	JOURNAL OF ENGINEERING RESEARCH

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NAVEEN A T	HASSLE-FREE TAX CALCULATION WITH BARCODE USING ANDROID APP	INTERNATIONAL RESEARCH JOURNAL OF ENGINEERING AND TECHNOLOGY(IRJET)
NIKESH S	ASTHMA INHALING AND ANALYZING DEVICE INTERFERING WITH APPLICATION SOFTWARE	INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH IN ELECTRICAL, ELECTRONICS, INSTRUMENTATION AND CONTROL ENGINEERING
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SARAN S	SHOCK ABSORBER POWER GENERATION	INTERNATIONAL INSTITUTE OF RESEARCH IN MULTIDISCIPLINARY - SKILL DEVELOPMENT TRUST, CHIRALA, ANDHRA PRADESH, INDIA
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<b>SNEHA S K</b>	EXPLORING MACHINE LEARNING ALGORITHMS TO FIND THE BEST FEATURES FOR PREDICTING THE MODE OF CHILDBIRTH	INTERNATIONAL JOURNAL OF ADVANCE RESEARCH IN SCIENCE AND ENGINEERING
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