



(DEEMED TO BE UNIVERSITY)



**CATEGORY 1
UNIVERSITY**
BY MHRD, Govt. of India

**KL ACCREDITED BY
NAAC WITH A++
GRADE**

nirf
2024
NATIONAL
INSTITUTIONAL
RANKING
FRAMEWORK

RANKED 22
AMONG ALL
UNIVERSITIES

**45 YEARS OF
EDUCATIONAL
LEADERSHIP**

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING



CENTER FOR FLEXIBLE ELECTRONICS

CENTER FOR FLEXIBLE ELECTRONICS



ABOUT US

The Center for Flexible Electronics, a pioneering entity within the Electronics and Communication Engineering Department at KLEF, Academicians in the Center Pursue interdisciplinary research and education across various disciplines. The focus is on critical enabling technologies like materials, devices, and systems for electronics applications, energy-harvesting nanogenerators, photovoltaics, sensors, e-skin, and biomedical, amongst various existing crossovers. Inspired by the endless possibilities of nanotechnology and aided by the strong emphasis on sustainable next-generation IoT sensors, self-sustainable devices, flexible electronics material growth, scalable processes, and product development.



VISION

To be a globally recognized hub for pioneering research, innovation, and commercialization in the field of flexible electronics, contributing to technological advancements and sustainable development.



MISSION

- Conduct leading-edge research in flexible electronics, developing advanced materials, devices, and systems that enhance technological capabilities.
- Develop environmentally friendly and sustainable electronic solutions that address global challenges & fostering innovation and the development of new products in flexible electronics.
- Transforming promising ideas into proof-of-concept devices, facilitating the transfer of technology, and promoting the commercialization of research findings in collaboration with industry.
- Betterment of mankind and train the researchers/students to excel in flexible electronics.

OBJECTIVES

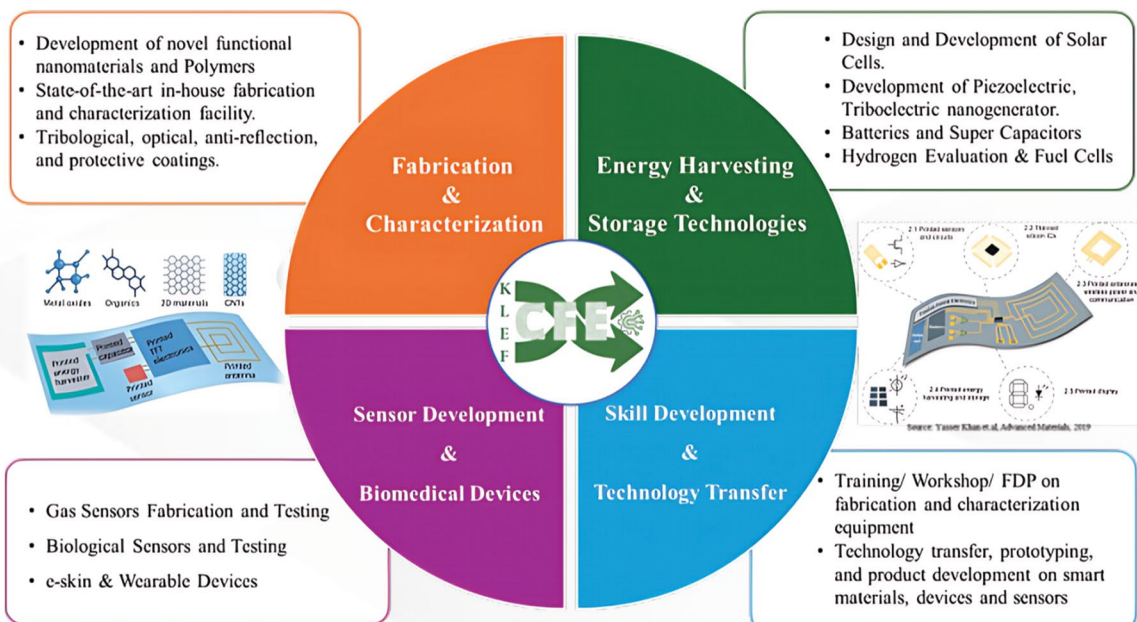
The Center for Flexible Electronics is distinguished by its inclusive and diverse collaborative research approach. Our research teams are not confined to a single department or college but are formed from faculty across multiple disciplines, fostering a rich exchange of ideas. Our faculty can achieve their research goals by leveraging the facilities of existing KLEF technology centers and KLEF central instrumentation facilities. The Department of Electronics and Communication Engineering, Physics, Chemistry, and Mechanical Engineering currently has an established research program in this area.

The process of manufacturing flexible electronics starts with the characterisation of the materials:

- ✓ Synthesis and Characterisation of Novel Materials
- ✓ Device Fabrication and Performance Analysis
- ✓ Development of Proof of Concepts & Prototypes
- ✓ Integration with Real-time Applications

KEY RESEARCH AREAS

Functional Nanomaterials & Polymers
Energy Harvesting and Storage
Wearable Electronic Devices
Sensors and Actuators
Biomedical Devices
Self -Powered Systems



FACILITY AND INFRASTRUCTURE

The Center for Flexible Electronics has state-of-the-art Indigenous materials preparation, fabrication, and characterisation facilities for material growth, thin film deposition, and device development, including vacuum-based deposition, wet chemical processing, and tribological, optical, and electrical characterisation. Along with consultancy services, the Center for Flexible Electronics aids with Ideation, prototyping, and product design.

Preparation & Fabrication Facilities



Characterisation & Testing Facilities



Prototype to Product



- Wet chemical Synthesis
- Hydro thermal Synthesis
- Chemical Vapor Deposition
- Micro Oven
- Electrospinning Unit
- Hot press
- UV Cabinet
- Glove box with Spin Coating
- RF and DC Sputtering
- Inkjet Printer

- Electrochemical Workstation
- UV-Vis Spectrophotometer
- Electrometer
- Gas Sensing Setup
- Nanofluidic Experimental Setup
- Fuel Cell Setup
- Electrolyser Setup
- Microbial Fuel Cell
- Atomic Absorption Spectrometer
- Linear Motor
- LCR Meter
- Atomic Force Microscopy
- FE-Scanning Electron Microscopy

Development of Proof-of-concept, working prototypes for energy harvesting devices such as Triboelectric Nanogenerators (TENG), Piezoelectric Nanogenerators (PENG), Solar Cells, and energy storage devices such as Supercapacitors and Batteries.



FACILITY AND INFRASTRUCTURE

EQUIPMENT	MAKE & MODEL	APPLICATIONS
Electrochemical Workstation	AMETEK	Measure and control electrical signals in electrochemical experiments
Electrometer	KEITHLEY & 6514	Flexible interfacing capabilities with current sensitivity, charge measurement
UV-Vis Spectrophotometer	LABINDIA ANALYTICAL	Measuring the number of discrete wavelengths of UV or visible light that are absorbed or transmitted
Indigenous Gas Sensing Setup	VB Ceramics	Measuring the concentration of various gases in sensing materials and devices
Nano Fluids Experimental Setup	TECH-ED	Evaluation of heat transfer coefficient, friction factors
Fuel Cell Setup	INDIGENOUS	Clean power generation for portable devices
Electrolyzer Setup	INDIGENOUS	Hydrogen production from Water and Alcohol
Microbial Fuel Cell (MFC)	INDIGENOUS	Power generation from organic wastes
Atomic Absorption Spectrometer (AAS)	PG INSTRUMENTS	Analysis of heavy and toxic metals at ppm levels from various samples
Linear Motor	LINMOT	Generating artificial linear movement setup for measuring the performance of piezoelectricity and TENG
LCR Meter	HIOKI & IM3533-01	Measure the inductance (L), capacitance (C), and resistance (R) of an electronic component.
Indigenous Vibration Generator Setup	INDIGENOUS	Testbed for investigating the output performance of a TENG and Piezoelectricity generators
Indigenous Thermoelectric Measurement Setup	INDIGENOUS	Measurement of thermoelectric performance of the thermoelectric Materials.
Electrospinning Nano Fibers Unit	E-SPIN NANOTECH	Synthesis of Nano/Hallow fibers for materials preparation & Fabrication
Chemical Vapor Deposition (CVD)	BHARTIA	Synthesis of Nano carbons, Nano metal particles & Thin film formation
Hot Press	PRISM, & HP5012-01	Fabricating dense, non-oxide monolithic ceramics and their composites
Hydrothermal	INDIGENOUS	Synthesis of Nanostructured Materials.
Micro Oven	LG	Accelerate the reaction rate, provide better yields and uniform and selective heating.
UV-Cabinet	SISCO	Chromatographic investigation utilising ultraviolet fluorescence

TEAM MEMBERS



Dr. P. S. Srinivasa Babu

Professor - ECE,
Flexible Printed Electronics &
Supercapacitors



Dr. S. Arunmetha

Associate Professor - ECE,
Solar Energy Harvesting, Photocatalysis,
Hydrogen Evolution & CO₂ Reduction



Dr. V. Vivekananthan

Associate Professor - ECE,
Nanomaterials, Flexible TENGs & PENGs,
Wearable Energy Harvesters & Self-Powered Sensors



Dr. Sivasankara Rao Ede

Assistant Professor - Department of Chemistry,
Electrochemical Water Splitting, CO₂
Reduction, Fuel Cell and Li-ion Batteries



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Functional and Flexible Polymers, PEM Fuel Cell,
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COLLABORATORS



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RESEARCH TEAM



Dr. K. ManojKumar
Post Doctoral Fellow

Development of Novel Nanomaterials, Flexible TENGs & PENGs, Wearable Energy Harvesters & Self-Powered sensors Colloids, Metal- air batteries Electrochemistry.



Mr. N. Ravivarman
Research Scholar

Solar Energy Harvesting Photocatalysis & Photoelectrochemical Hydrogen Evolution



Mr. D. Sateesh
Research Scholar

Flexible PENGs, Wearable Energy Harvesters & Self-Powered sensors



Mr. M. Mukilan
Research Scholar

Novel Nano Materials Energy Harvester & Sensors Systems



Mr. B. V. Aravind
Research Scholar

Flexible super capacitors & Batteries



Mr. Sivakumar Ogirala
Research Scholar

Novel Materials for Environmental Applications & EMI Shielding



Mr. B. Thirukumaran
Research Scholar

Nano Materials for Environmental Applications



Mrs. M Haritha
Research Scholar

Energy harvesting devices for smart systems



Mrs. Sowjanya kesana
Research Scholar

Flexible Antennas for HAM Radio Applications



Mrs. Ch. Krishnaveni
Research Scholar

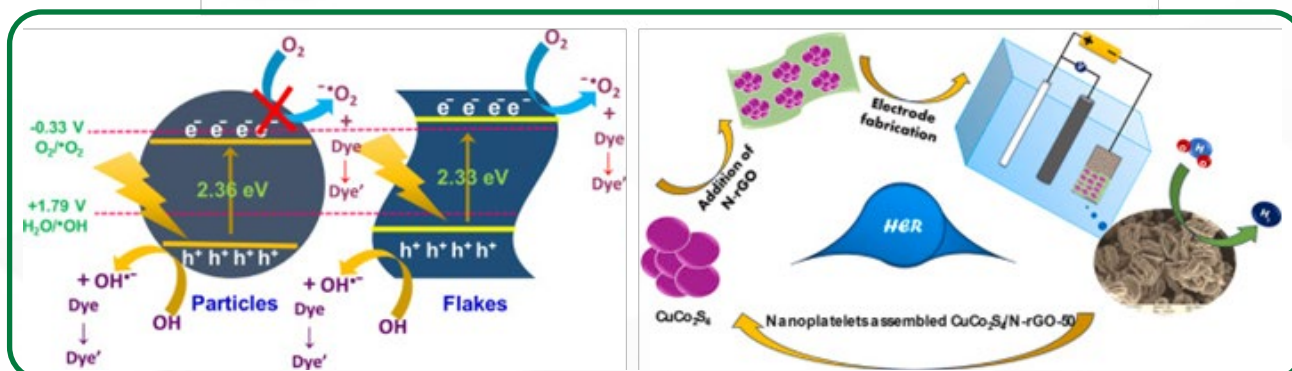
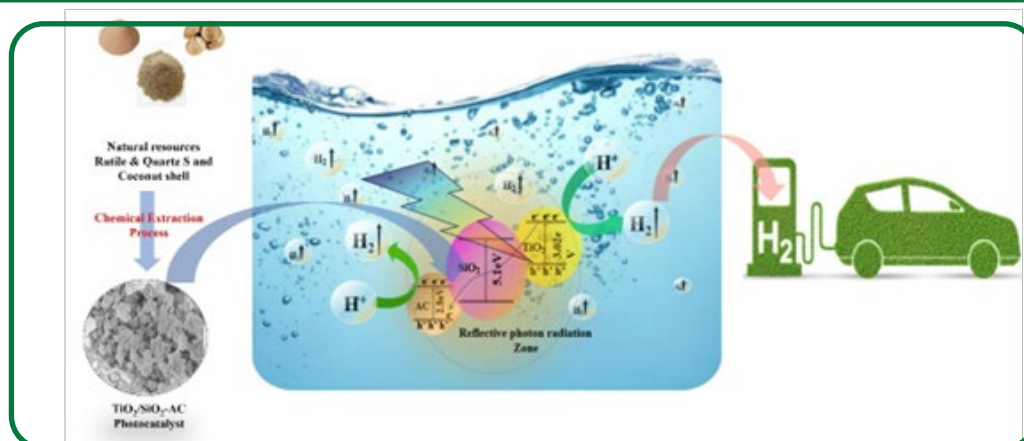
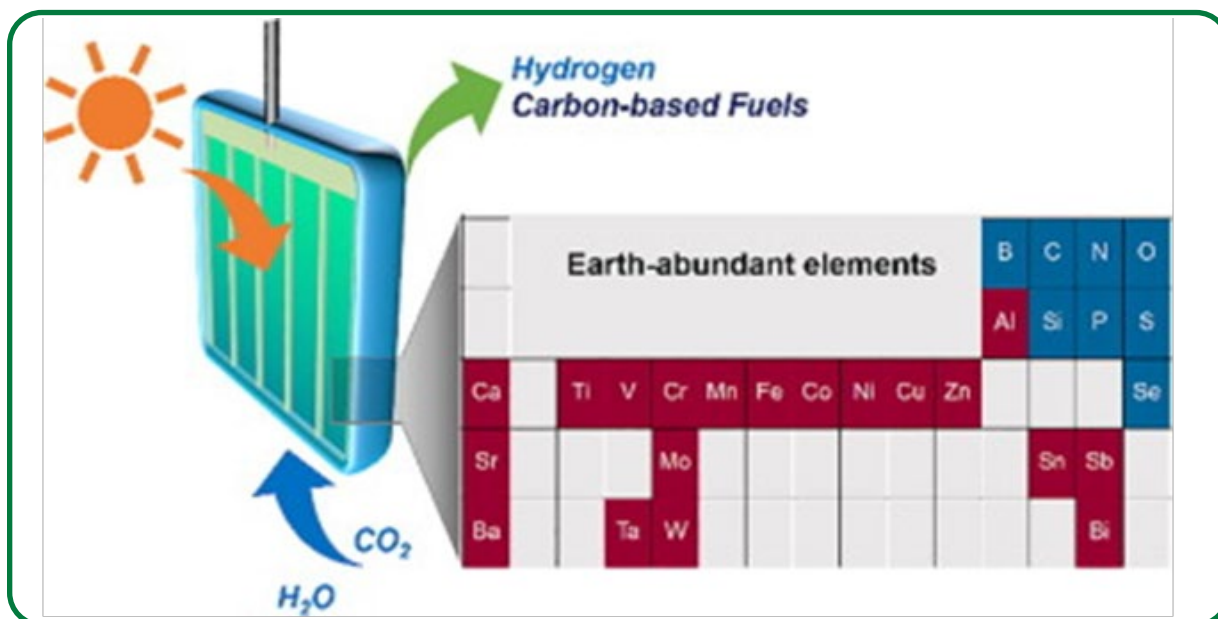
Flexible Nano Energy Harvester



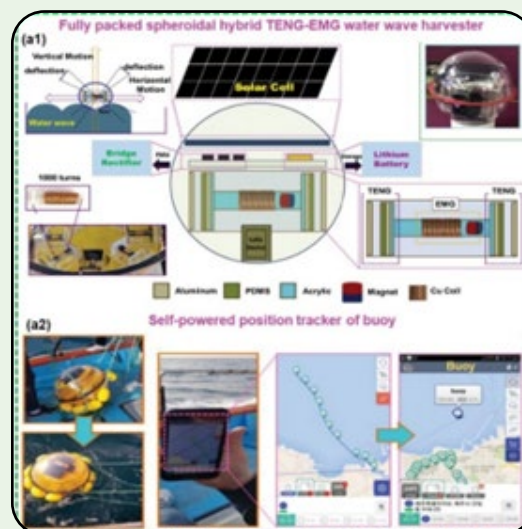
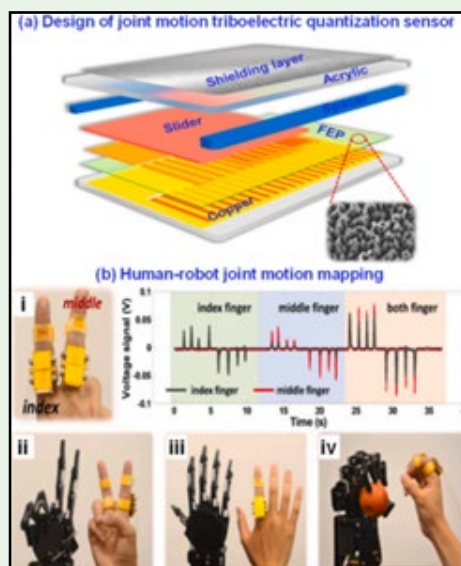
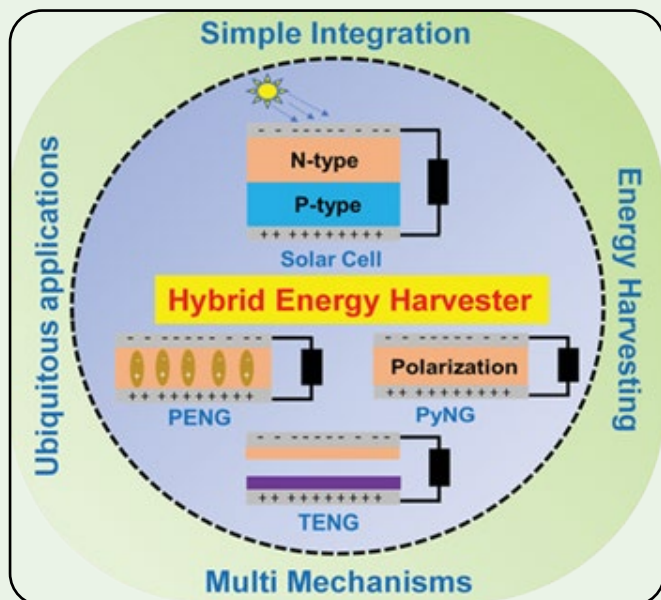
Mrs. Ch. Jaya Lakshmi
Research Scholar

Flexible Energy Harvesting Systems

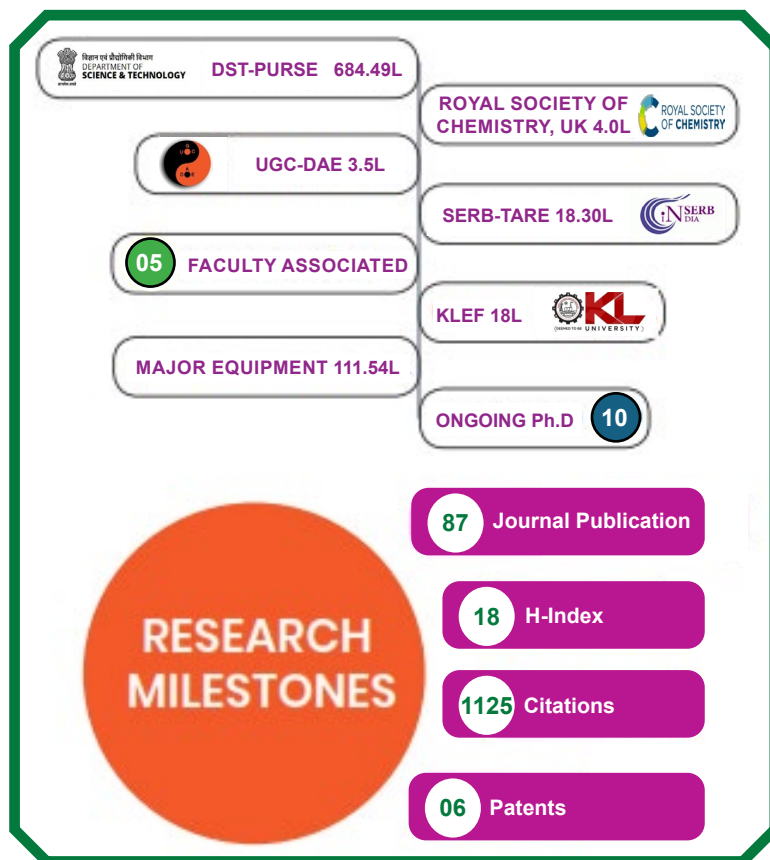
HIGHLIGHTS OF RESEARCH CENTER WORKS



HIGHLIGHTS OF RESEARCH CENTER WORKS



PUBLICATIONS ANALYTICS- INCLUDING SDG



We Achieved 11 SDG Goals In 87 Publications



PROJECTS-SPONSORED, AGENCIES

PI & Co-PI	Title of the project	Funding Agency With File No.	Grant Sanctioned in INR (Lakh)
Dr. BTP Madhav Dr. V. Vivekananthan Dr. S. Arunmetha Dr. P. S. Srinivasa Babu Dr. K Swapna Dr. Sk Mahamuda	Novel Low-Dimensional Materials and Flexible Dielectrics for Optoelectronic and Microwave Devices	DST-PURSE (2023-2027) SR/PURSE/2023/196(C)	684.49
Dr. S. Arunmetha Dr. M. Sathish (Colloborator)	Development of Heterostructured Materials for an Efficient Photocatalytic and Photoelectrochemical Water Splitting towards Green Energy Harvesting	SERB-TARE (2021-2024) DST NO: TAR/2021/ 000240	18.30
Dr. V. Vivekananthan	Development of Piezoelectric and Triboelectric Array-based Self-powered Sensors for Rehabilitation Applications	RSC, UK (2022-2024) R22-7381975972	4.0 (£ 3700)
Dr. S. Arunmetha Dr. Shamima Hussain (Colloborator)	Develop Nanostructured materials for Efficient Solar Energy Conversion Applications	UGC-DAE (2022-2025) CRS/2021- 22/04/643	3.5
Dr. V. Vivekananthan	Triboelectric Nanogenerator based E-Textiles for Energy Harvesting and Self-Powered Sensing	KLEF SEED GRAND (2022-2025) KLEF/IFP/2022-23/ECE/007	10
Dr. S. Arunmetha	Development of Nanostructured Materials for Energy Conversion Applications	KLEF SEED GRAND (2021-2023) KLEF/RO/R&D/2020-21	3.5
Dr. S. Arunmetha	Design and Development of TENG for Energy Harvesting Systems	KLEF SEED GRAND (2021-2023) KLEF/RO/R&D/2020-21	2.5
Dr. K. Rambabu	Poly(ionic liquid)- Grafted Silica Nanocomposites of Polybenzimidazoles for the Fabrications of Flexible Supercapacitors	KLEF SEED GRAND KLEF/IFP/2022-23/ Chemistry/003	4.5

COLLABRATIVE PUBLICATIONS

1. **P. S. Srinivasa Babu et.al.**, 'Designed Construction of Hierarchical Cobalt Sulfide Nanonetwork as a High-Capacity and Binder-Free Cathode for Hybrid Supercapacitors' **American Chemical Society (ACS) Energy & Fuels** 2023, 37, 17535–17544. **Impact Factor: 5.3 – Q1**
2. **P.S. Srinivasa Babu et.al.**, 'Well-integrated bismuth trioxide nanotriangles on carbon cloth as a flexible faradic electrode for supercapacitor applications', **Elsevier Diamond & Related Materials** 139 (2023) 110406. **Impact Factor: 4.1 – Q1**
3. **Satya Srinivasa Babu et.al.**, 'Metal organic framework derived MnO@carbon composites for highly durable Li-ion batteries and hybrid electrochemical cells', **Elsevier Journal of Power Sources**, Volume 549, 30 November 2022, 232113 **Impact Factor: 9.1 – Q1**
4. **Vivekananthan V et. al.**, "Revolutionizing self-powered robotic systems with triboelectric nanogenerators". **Nano Energy**. 2023 Oct 1;115:108729. **Impact Factor- 17.5 – Q1**
5. **Vivekananthan V et. al.**, "Roadmap on Energy Harvesting Materials". **Journal of Physics: Materials**. 2023 Mar 17. **Impact Factor- 4.69 – Q1**
6. **Vivekananthan V et. al.**, "Contact-electrification enabled water-resistant triboelectric nanogenerators as demonstrator educational appliances". **Journal of Physics: Energy**. 2024. **Impact Factor- 6.5 – Q1**
7. **Arunmetha S et. al.**, "Improving Electrochemical Performance in Three-Electrode Measurements with Ferroelectric Bimetallic Co-Fe-MgO/CNT Composite". **Electrochimica Acta**. 2024 Jun 3:144528. **Impact Factor 5.5 - Q1.**
8. **Arunmetha S et. al.**, "Synthesis of surfactant assisted Cu₂ZnSnS₄ (CZTS) photocatalysts for removal of dyes from wastewater". **Sustainable Energy Technologies and Assessments**. 2024 May 1;65:103778. **Impact Factor: 7.1-Q1.**
9. K Sakthipandi, K Venkatesan, R Sivakumar, G Rajkumar, B Ganesh Babu, **S Arunmetha**, Aslam Hossain, M Srinidhi Raghavan, V Rajendran Exploring the impact of rare-earth (La³⁺) ions doping on structural, magnetic, and dielectric properties of Co_{0.50}Ni_{0.50}LaxFe_{2-x}O₄ nano-spinel ferrite, **Journal of Alloys and Compounds**, 981, 173708 (2024). **Impact Factor: 6.0-Q1**
10. **Arunmetha S et. al.**, "Bayberry-like Cu₃BiS₃ with 2D layered nanosheets of rGO and g-C₃N₄ for effective electrochemical HER activity", **International Journal of Hydrogen Energy**, 49, 295-308 (2024) **Impact Factor: 8.1-Q1.**

PATENTS

1. **P. S. Srinivasa Babu** et. al., 'Fabrication of Flexible Electrodes for Supercapacitor using Bio-Degradable Materials' Application No.: 202341069372
2. **Vivekananthan V**, "A Self-powered Rehabilitation System using Flexible Piezoelectric Sensor made of KNN based Perovskite Solid System"
3. **P. S. Srinivasa Babu** et al., 'Wideband antennas for radio applications', Indian Design Patent. Patent No. 400487-001, Issued Date: 25.01.2024, Issued by The Patents Office, Govt of India
4. **Arunmetha S** et.al., Portable Triboelectric Nanogenerators with IoT Interface, 202241040111 A, July 2022-Published, Issued by The Patents Office, Govt of India
5. **Arunmetha S** et.al., Automation Device for Health Care Application, 202341045561A, Sep 2023-Published, Issued by The Patents Office, Govt of India
6. **Arunmetha S** et.al., An Automatic Object Disinfection Device for Healthcare applications, 202341045909 A, Sep 2023-Published, Issued by The Patents Office, Govt of India

TOP 10 PUBLICATIONS

1. **Vivekananthan V** et. al., Synergistic Integration of Nanogenerators and Solar Cells: Advanced Hybrid Structures and Applications. *Advanced Energy Materials*. 2024 Feb 26:2400025. **Impact Factor- 27.8 – Q1**
2. **Vivekananthan V** et. al., Smart maracas: An innovative triboelectric nanogenerator for earthquake detection and energy harvesting. *Nano Energy*. 2024 May 1;123:109379. **Impact Factor- 16.6 – Q1**
3. **Vivekananthan V** et. al., A biocompatible triboelectric nanogenerator-based edible electronic skin for morse code transmitters and smart healthcare applications. *Nano Energy*. 2024 Jun 17:109899. **Impact Factor- 16.6 – Q1**
4. **Vivekananthan V** et. al., “Crystalline Porous Material-Based Nanogenerators: Recent Progress, Applications, Challenges, and Opportunities”. *Small*. 2023:2306209. **Impact Factor- 13.3 – Q1**
5. **Vivekananthan V** et. al., Hybrid nanogenerator for self-powered object recognition. *Journal of Science: Advanced Materials and Devices*. 2024 Jun 1;9(2):100693. **Impact Factor- 8.0 – Q1**
6. **Vivekananthan V** et. al., “Carbohydrate–protein interaction-based detection of pathogenic bacteria using a biodegradable self-powered biosensor”, *J. Mater. Chem. B*, 2023, 11, 10147-10157. **Impact Factor- 7.0 – Q1**
7. **Arunmetha S** et. al., “Nanoplatelets assembled CuCo₂S₄/N doped rGO nanocomposites for hydrogen evolution reaction”, *International Journal of Hydrogen Energy* 65, 704-716 (2024) **Impact Factor: 8.1-Q1.**
8. **Arunmetha S** et. al., “Bismuth ferrite (BiFeO₃) 2D-nanoflakes for the photocatalytic degradation of chromogenic dyes under solar irradiation, *Surfaces and Interfaces*, 41, 103240 (2023). **Impact Factor: 6.2-Q1**
9. **P. S. Srinivasa Babu** et.al., Strategic Way of Synthesizing Heteroatom-Doped Carbon Nano-onions Using Waste Chicken Fat Oil for Energy Storage Devices. *ACS Applied Materials & Interfaces*. 2024 Apr 24;16(18):23334-43. **Impact Factor: 8.3 – Q1**
10. **P.S. Srinivasa Babu** et.al., ‘Rational design of Cu-doped Co₃O₄@carbon nanocomposite and agriculture crop-waste derived activated carbon for high-performance hybrid supercapacitors’, *Elsevier Journal of Industrial and Engineering Chemistry*, 2022, 116, 428-437. **Impact Factor: 6.1 – Q1**

LIST OF PUBLICATIONS

1. **P. S. Srinivasa Babu** et.al., Flexible Supercapacitors with Improved Energy Density Using OPBI-Coated Polyaniline-Carbon Nanotube Blends. *IEEE Transactions on Electron Devices*. 2024 Jun 25. **Impact Factor: 2.9 – Q2**
2. **Satya Srinivasa Babu Patcha**, et.al., 'Char of Tagetes erecta (African marigold) flower as a potential electrode material for supercapacitors', *J. Electrochem. Sci. Eng.* 12(4)(2022) 787-797; **Impact Factor: 2.2 – Q3**
3. **Satya Srinivasa Babu Patcha**, Subhakaran Singh Rajaputra, 'Rice husk char as a potential electrode material for supercapacitors', *J. Electrochem. Sci. Eng.* 12(3)(2022) 451-462. **Impact Factor: 2.2– Q3**
4. **Vivekananthan V** et. al., Triboelectric Nanogenerators for Brake Pattern Recognition. *Macromolecular Rapid Communications*. **Impact Factor- 4.2 – Q1**
5. **Vivekananthan V** et. al., Metal organic Frameworks for self-powered sensors and systems . *Advanced Sustainable Systems*. Impact Factor- 6.5 – Q1
6. **Vivekananthan V** et. al., Innovative Synthesis of Zeolitic Imidazolate Framework by a Stovetop Kitchen Pressure Cook Pot for Triboelectric Nanogenerator. *Energy Technology*. 2024 Mar 16:2400099. **Impact Factor- 3.5 – Q3**
7. **Vivekananthan V** et. al., A. Touch–Enabled Self–Powered Elastomeric Keypad for Mapping Human Input and an Emergency Alert via Triboelectric Effect. *Energy Technology*. 2024 Mar;12(3):2300831. **Impact Factor- 3.5 – Q3**
8. **Vivekananthan V** et. al., Contact-electrification enabled water-resistant triboelectric nanogenerators as demonstrator educational appliances. *Journal of Physics: Energy*. 2023 Nov 3;6(1):015003.
9. **Vivekananthan V** et. al., "A review on the next generation of healing: exploring the use of triboelectric nanogenerators in wound care". *Chemical Physics Letters*. 2023 Jun 9:140648. **Impact Factor- 2.8 -Q2**
10. **Vivekananthan V** et. al., "Electrochemical and photochemical characteristics of organic dyes and biological molecules at conducting polymer-modified electrodes of indium oxide-polypyrrole nanohybrids", *Materials Science and Engineering: B*. 2023 Nov 1;297:116761. **Impact Factor- 3.8 – Q2**
11. **Vivekananthan V** et. al., "Investigation on structural, morphological and magnetic properties of Barium Cobaltite (BaCoO₃) nanoparticle", *Materials Science and Engineering: B*. 2023 Nov 1;296:116669. **Impact Factor- 3.8 – Q2**

LIST OF PUBLICATIONS

12. **Vivekananthan V** et. al., "Spent Catalyst-Derived Mo-MOF: Triboelectric Nanogenerators and Energy Harvesting". *Energy Technology*. 2023:2300498. **Impact Factor- 3.5 – Q3**
13. **Vivekananthan V** et. al., "A comprehensive review on triboelectric nanogenerators based on Real-Time applications in energy harvesting and Self-Powered sensing", *Materials Science and Engineering: B*. 2023 Nov 1;297:116762. **Impact Factor- 3.8 – Q2**
14. **Arunmetha S** et. al., " α -Fe₂O₃/MoS₂ heterostructured nanomaterial for enhanced visible-light photocatalytic performance under sunlight irradiation". *Journal of Materials Science: Materials in Electronics*. 2024 Jun;35(16):1-9. **Impact Factor: 2.8 -Q2.**
15. **Arunmetha S** et. al., "Microwave synthesis of magnesium phosphate-rGO as an effective electrode for supercapacitor application". *Zeitschrift für Physikalische Chemie*. 2024 May 13(0). **Impact Factor: 3.0-Q2.**
16. **Arunmetha S** et. al., "Ni (OH)₂/Co (OH)₂ nanocomposite as electrocatalyst towards water oxidation process", *Journal of Sol-Gel Science and Technology*, 110, 90-102 (2024) **Impact Factor: 2.3-Q1**
17. **Arunmetha S** et. al., "Facile Synthesis of Ni-MgO/CNT Nanocomposite for Hydrogen Evolution Reaction", *Nanomaterials*, 14(3), 280 (2024) **Impact Factor: 4.4-Q1**
18. **Arunmetha S** et. al., "Enhanced electrochemical performances of SrMoO₄/MWCNT-PVP nanocomposites as electrocatalyst for hydrogen evolution reaction", *Ceramics International*, 50(10) (2024) **Impact Factor: 3.5-Q1**
19. **Arunmetha S** et. al., "Facile synthesis of chromium oxide composite carbon (Cr₂O₃/C) nanostructures by solvothermal route for high performance supercapacitor applications", *Materials Letters*, 43, 136158 (2024) **Impact Factor: 3.5-Q2**
20. K Sakthipandi, K Venkatesan, G Purushothaman, G Rajkumar, Rajshree B Jotania, R Sivakumar, **S Arunmetha**, Aslam Hossain Study of phase transition temperature in defect-induced barium hexaferrite, *Materials Letters*, 363, 36257 (2024) **Impact Factor: 3.5-Q2**
21. **Arunmetha S** et. al., "Magnetically separable rare earth metal incorporated CdFe₂O₄ photocatalyst for degradation of cationic and azo dyes", *Journal of Molecular Structure* 1302, 137479, (2024) **Impact Factor: 4.0-Q2**
22. **Arunmetha S** et. al., "Design and implementation of hybrid (radix-8 Booth and TRAM) approximate multiplier using 15-4 approximate compressors for image processing application", *Journal of Real-Time Image Processing*, 21(2), 50 (2024) **Impact Factor: 3.5-Q2**

LIST OF PUBLICATIONS

23. **Arunmetha S** et. al., "Copper tungsten sulfide nanocubes decorated with rGO/MWCNT for overall water splitting", *Electrochimica Acta*, 475, 143685 (2024) **Impact Factor: 4.3-Q2**
24. **Arunmetha S** et. al., "Enhanced electrochemical performance of CuO/NiO/rGO for oxygen evolution reaction", *Electrochimica Acta*, 473, 143464 (2024) **Impact Factor: 5.5-Q2**
25. **Arunmetha S** et. al., "Vermi degradation of different dietary supplements mediated on the reproduction and metabolic profile of earthworm *Eudrilus eugeniae*", *Notulae Scientia Biologicae*, 15 (4), 11638 (2023) **Impact Factor: 4.3-Q2**
26. **Arunmetha S** et. al., "Exploring the electromagnetic shielding behavior of lanthanum doped calcium nanoferrites", *Journal of Rare Earths*, 42(4), 629, (2023) **Impact Factor: 5.2-Q1**.
27. **Arunmetha S** et. al., "Synthesis of ZnWO₄ nanorods: the photocatalytic effects on RhB dye degradation upon irradiation with sunlight light", *Journal of Materials Science: Materials in Electronics*, 34 (31), 2094 (2023) **Impact Factor: 3.5-Q2**
28. **Arunmetha S** et. al., "Development of Ag/SrTiO₃ and Ag/SrTiO₃/GO nanocomposites with superior photocatalytic and electrochemical characteristics for the environmental remediation of industrial dye", *Ceramics International*, 50(2), 4218-4226 (2024) **Impact Factor: 5.2-Q1**
29. **Arunmetha S** et. al., "Adaptive FIR Filter Design with Approximate Adder and Hybridized Multiplier for Efficient Noise Eradication in Sensor Nodes", *ECS Journal of Solid State Science and Technology*, 12 (9), 097002 (2023) **Impact Factor: 2.2-Q3**
30. **Arunmetha S** et. al., "A simple fluorescent sensor for the meticulous recognition of Cu²⁺ ion and its functioning in logic gate and keypad lock", *Journal of Photochemistry and Photobiology A: Chemistry* this link is disabled, 441, 114750 (2022). **Impact Factor: 5.0-Q2**
31. **Arunmetha S** et. al., "A simple method for functionalizing polypyrrole-coated cotton fabrics by reduced graphene oxide for UV screening". *Inorganic and Nano-Metal Chemistry*. 2023 Mar 4;53(3):302-10. **Impact Factor: 1.0-Q3**
32. **Arunmetha S** et. al., "Implementation and Investigation of an Optimal Full Adder Design for Low Power and Reduced Delay Conditions", *Wireless Personal Communications*, 126(4), pp. 3041–3069 (2022) **Impact Factor: 3.4-Q2**
33. **Arunmetha S** et. al., "A survey paper on design and implementation of multipliers for digital system applications", *Artificial Intelligence Review*, 55, 1-29 (2022) **Impact Factor: 10.7-Q**

FOR MORE INFORMATION

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(DEEMED TO BE UNIVERSITY)



**CATEGORY 1
UNIVERSITY**
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**KL ACCREDITED BY
NAAC WITH A++
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2024 NATIONAL
INSTITUTIONAL
RANKING
FRAMEWORK

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AMONG ALL
UNIVERSITIES**

**45 YEARS OF
EDUCATIONAL
LEADERSHIP**