

LEAD GUEST EDITOR



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THEMATIC CALL: ENGINEERED SCIENCE (SCOPUS INDEXED Q1 JOURNAL)

**Frontiers in Advanced
Energy Storage and
Conversion Technologies**

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ABOUT THE THEMATIC CALL

The rapid evolution of energy storage and conversion technologies is driving the transition toward sustainable and efficient energy solutions. This thematic volume, *Frontiers in Advanced Energy Storage and Conversion Technologies*, aims to highlight cutting-edge research, novel materials, and innovative methodologies that enhance the performance, efficiency, and security of energy systems.

This thematic volume will explore key topics including novel battery chemistries (solid-state, lithium-sulfur, sodium-ion), advanced electrode and electrolyte materials, redox flow batteries, and emerging fuel cell technologies. Additionally, contributions on artificial intelligence, blockchain, and cybersecurity strategies for secure energy storage management will be welcomed, given the increasing digitization of energy systems.

TOPICS INCLUDE (NOT LIMITED TO)

- Next-Generation Solid-State Batteries: Materials, Design, and Performance Enhancements
- Advances in Lithium-Sulfur and Sodium-Ion Batteries for High-Energy Applications
- Hybrid Energy Storage Systems: Integration of Batteries, Supercapacitors, and Fuel Cells
- Hydrogen Storage Technologies: Innovations in Materials and System Design
- Electrode and Electrolyte Developments for Enhanced Energy Storage Efficiency
- Redox Flow Batteries: Emerging Trends and Future Prospects
- Artificial Intelligence in Battery Management and Energy Optimization.
- Blockchain for Secure and Decentralized Energy Storage Systems

- Cybersecurity Challenges and Solutions in Smart Energy Storage Networks
- Thermal Management Strategies for High-Performance Energy Storage Systems
- Nanomaterials for High-Capacity and Long-Life Energy Storage Devices
- Grid-Scale Energy Storage: Advances, Challenges, and Deployment Strategies
- Flexible and Wearable Energy Storage Devices for Next-Generation Electronics
- Sustainable and Eco-Friendly Battery Technologies: Recycling and Second-Life Applications
- Energy Storage in Electric Vehicles: Improving Charging Speed, Safety, and Longevity

IMPORTANT DATES

February 20, 2025

**Paper Submission
Start**

April 20, 2025

**Paper Submission
Dead-Line**

May 20, 2025

**Review Results
Returned**

June 20, 2025

**Final Acceptance
Notification**

July 20, 2025

**Tentative Publication
Date**



Plagiarism and Peer Review

The submitted full paper must not be submitted elsewhere for any type of consideration for publishing. The author(s) should ensure that the plagiarism of the submitted complete paper should be less than 10%. All the papers submitted will undergo peer review as per journal policy and procedures.

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SHORT BIOGRAPHY

LEAD GUEST EDITOR: Dr. Udit Mamodiya

Dr. Udit Mamodiya is an Associate Professor and Associate Dean (Research) at Poornima University, Jaipur, India. He specializes in renewable energy, reliability analysis, expert systems, and decision support systems. With over 50 research papers indexed in SCI, Scopus, and UGC Care, he actively contributes to academia. He has authored 10 books published by national publishers, further enriching the academic community. Dr. Mamodiya holds an impressive portfolio of 50 utility patents and 20 design patents & copyrights at national and international levels. He secured ₹50 Lacks in AICTE funding to establish the IDEA Lab at Poornima University, fostering innovation and research. As a SPOC member of the Smart India Hackathon, he plays a crucial role in promoting student-led technological advancements. He has organized over 10 Scopus-indexed conferences and serves as a guest editor for the International Journal of Electrical and Electronics Research (IJEER). His contributions have earned him prestigious awards, including the Dr. Radhakrishnan Award (2020), GOREA (2019), AEA (2018), and the GECL Award. With 12 years of experience in academia and industry, he continues to bridge the gap between theoretical knowledge and real-world applications.

ASSISTANT GUEST EDITOR : Dr. Mohammed Amin Almaiaha

Dr. Mohammed Amin Almaiah is an Associate Professor in the Department of Computer Science at the University of Jordan. He is recognized as one of the top 2% of scientists globally from 2020 to the present, reflecting his significant contributions to the field of cybersecurity. Dr. Almaiah holds a PhD in Computer Science (Cybersecurity) from 2017, a Master's Degree in Computer Information Systems (2011), and a Bachelor's Degree in Computer Information Systems (2008). Dr. Almaiah has an extensive academic background, having previously served as the Dean of the Faculty of Information Technology at Aqaba University of Technology (2023–2024). He has also held academic positions in Saudi Arabia as an Associate Professor (2021-2023) and Assistant Professor (2017-2021) in the Department of Computer Networks and Communications at King Faisal University, as well as a Lecturer at Al-Baha University (2011–2013). His diverse academic and leadership experience spans across multiple institutions, where he has focused on cybersecurity education, mobile app security, and cyber-risk management. Dr. Almaiah's research continues to push the boundaries of cybersecurity, with particular attention to the challenges posed by emerging technologies and mobile environments. His work contributes to improving the security of information systems and networks, helping organizations and individuals mitigate cyber threats effectively.

ASSISTANT GUEST EDITOR : Dr. Ajit Khosla

Dr. Ajit Khosla is a Professor in the Department of Mechanical Systems Engineering at Yamagata University, Japan. He is also affiliated with the Soft & Wet Matter Engineering Lab (SWEL) at the Graduate School of Science and Engineering within the same university. Dr. Khosla earned his Ph.D. from Simon Fraser University in Burnaby, British Columbia, Canada. His doctoral research focused on developing novel micropatternable multifunctional nanocomposite materials for flexible nano- and micro-systems, for which he was awarded the 2012 Dean of Graduate Studies Convocation Medal. Following his Ph.D., Dr. Khosla undertook postdoctoral fellowships at Concordia University in Montreal and the University of Calgary in Alberta, Canada. In 2014, he co-founded Lab177 Inc., a startup in Chatham, Ontario, Canada, specializing in nano-microsystems for healthcare and flexible electronics. In addition to his role at Yamagata University, Dr. Khosla has served as a Distinguished Professor at the School of Advanced Materials and Nanotechnology at Xidian University in Xi'an, China. He has also been a visiting scientist at the MEMS Research Lab, Department of Mechanical Engineering, College of Engineering, San Diego State University, California, USA. Dr. Khosla's research interests encompass nano-microsystems, resulting in over 100 scientific and academic contributions. He has been actively involved in the scientific community, serving as an executive and program committee member for major conferences, including his role as secretary for the Electrochemical Society (ECS) Sensor Division. Notably, he was appointed as the founding Editor-in-Chief of the open-access journal ECS Sensors Plus. His work has garnered significant recognition, with citations exceeding 250 in the past three years.

ASSISTANT GUEST EDITOR : Dr. Deepak Dubal

Professor Deepak Dubal is a leading scientist in clean energy conversion and storage systems, currently serving as a Professor at the School of Chemistry and Physics, Queensland University of Technology (QUT), Brisbane, Australia. He holds a Ph.D. in Physics from Shivaji University, India, and has held prestigious fellowships, including the Alexander von Humboldt Fellowship in Germany, a Marie-Curie Fellowship in Spain, and a Vice Chancellor Fellowship at the University of Adelaide. With over 200 peer-reviewed publications, more than 21,700 citations, and an h-index of 79, his research focuses on developing advanced materials for sustainable energy storage solutions such as supercapacitors, batteries, and nanogenerators. Recognized with numerous awards, including an ARC Future Fellowship, he is also a member of leading scientific organizations like the Royal Society of Chemistry and the Australian Nanotechnology Network. His work aims to address global energy challenges and climate change through innovative materials science and nanotechnology.

ASSISTANT GUEST EDITOR : Dr. Deepanraj Balakrishnan

Dr. Deepanraj Balakrishnan is a distinguished academic and researcher in the field of Mechanical Engineering, currently serving at the College of Engineering, Prince Mohammad Bin Fahd University, Saudi Arabia. With a strong background in energy systems, thermodynamics, and computational fluid dynamics, he has contributed significantly to sustainable energy research. His work encompasses renewable energy technologies, waste heat recovery, and optimization of thermal systems. Dr. Deepanraj has an extensive publication record in reputed journals and has actively collaborated on international research projects. His expertise and dedication to advancing engineering solutions make him a valuable asset in the field of mechanical engineering.