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Anusandhan National Research Foundation
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# 5th IEEE International Conference on Sustainable Energy and Future Electric Transportation

# SeFet 2025

**9th - 12th July 2025 | Centre for Energy & Environment**
**Malaviya National Institute of Technology Jaipur**
**Rajasthan | INDIA**

SeFet 2025

## Conference Report

IAS IEEE Industry Applications Society — Linking Research to Practice
IEEE Power Electronics Society
IEEE PELS WIE Women in Engineering
IEEE Industrial Electronics Society
IES
IEEE PES Power & Energy Society

# SeFet in the past


## SeFet 2021

21st - 23rd January 2021
GRIET Hyderabad
Telangana, India

**(Online mode)**


## SeFet 2022

4th - 6th August 2022
GRIET Hyderabad
Telangana, India


## SeFet 2023

9th – 12th August 2023
Siksha 'O' Anusandhan,
Bhubaneswar
Odisha, India


## SeFet 2024

31st July – 3rd August 2024
GRIET Hyderabad
Telangana, India

# About SeFet 2025

The **5th IEEE International Conference on Sustainable Energy and Future Electric Transportation (SeFet 2025),** hosted by the **Centre for Energy and Environment (CEE), MNIT Jaipur, Rajasthan, India** is a globally recognized forum that brings together researchers, industry professionals, policymakers, and academicians to drive progress in clean energy, electric mobility, and intelligent power systems. Scheduled from **9th to 12th July 2025**, and technically co-sponsored by leading IEEE societies including IEEE IAS, PES, IES, and PELS, the conference reflects the evolving dynamics of sustainable energy ecosystems.

This year, SeFet received 1,058 research paper submissions from India and abroad. After a rigorous peer-review process, 666 high-quality papers have been accepted for presentation across multiple oral and poster sessions, thematic special sessions, and focused tutorials. The conference spans **6 Technical Tracks**, from renewable energy and electric transportation to AI-driven energy systems and green infrastructure. In addition to the main program, **15 Special Sessions**, curated from numerous international and national proposals, are designed to spotlight cutting-edge, interdisciplinary, and application-oriented topics including hydrogen energy, cyber-physical resilience, AI in power systems, and sustainable buildings.

A landmark feature of SeFet 2025 is the **gathering of 12 renowned IEEE Fellows**, each representing deep expertise and decades of innovation in fields such as power electronics, smart grids, electric vehicles, and energy systems. This marks the largest IEEE Fellow gathering in SeFet's history, providing attendees an extraordinary opportunity to interact with globally renowned thought leaders and pioneers in the field.

SeFet 2025 also introduces two prestigious recognitions for the FIRST TIME:

- Three **Outstanding Doctoral Thesis Awards** (sponsored by HIOKI India Pvt. Ltd.) for impactful Ph.D. work in energy and electric transport.

- Twenty five **Student Travel Awards**, to support deserving postgraduate and early-career scholars from diverse regions.

The academic and research dimensions of the event are further elevated through strong industry engagement, with **sponsorship** from leading organisations such as: HIOKI India Pvt. Ltd., Genus Power Infrastructures Ltd., Mitsubishi Electric India Pvt. Ltd., Normet India Pvt. Ltd., OPAL-RT Technologies, Jakson Green Pvt. Ltd., TOBOR, KIANA Energy Solutions, ARK Infosolutions Pvt. Ltd., Karnavati University and Rajasthan Tourism. We have also received generous support from our institutional partner Anusandhan National Research Foundation (ANRF).

These sponsors not only support the event financially but also actively engage in industry sessions, exhibitions, and mentorship programs, helping bridge the gap between research innovations and real-world implementation. The conference also includes dedicated events for **Women in Engineering (WIE), Students and Young Professionals (SYP)**, cultural evenings, and networking activities, all set in the beautiful campus of MNIT Jaipur, in the heart of India's Pink City.

With its holistic approach and global outlook, SeFet 2025 is more than a conference; it's a collaborative mission towards building a cleaner, more innovative and sustainable energy future.

SeFet 2025 features **six core technical tracks** that cover the full spectrum of sustainable energy and electric transportation research. These tracks include lab-to-field themes such as power and energy conversion systems, EV charging infrastructure, energy storage solutions, renewable energy integration, microgrid stability and energy trading, as well as the application of AI/ML, cyber-security, and IoT in next-generation energy systems.

**List of Technical Tracks**

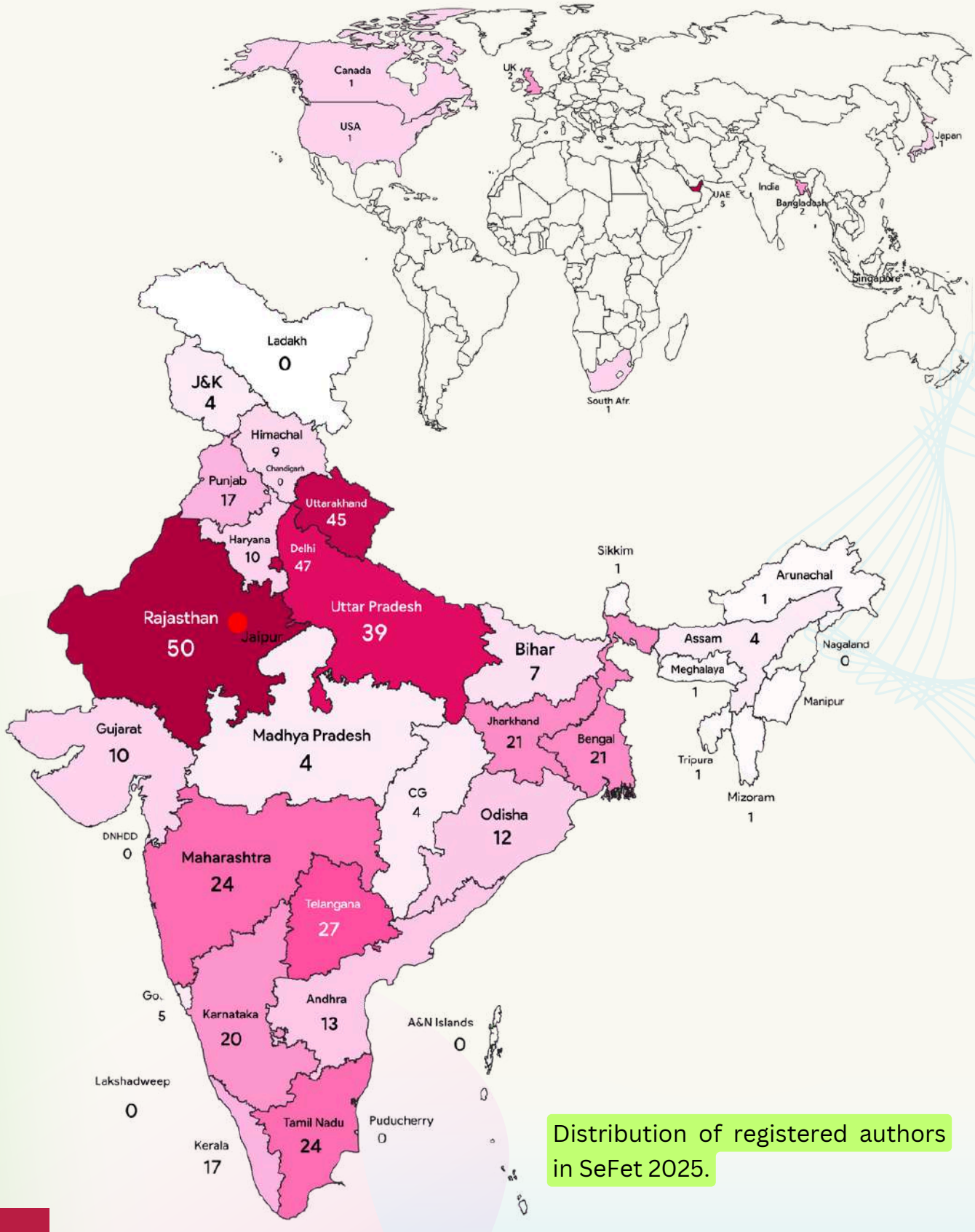
- **Track 1:** Power and Energy conversions for Sustainable Energy and Transportation Systems
- **Track 2:** Charging Systems and Infrastructure for Sustainable Transportations
- **Track 3:** Energy Storage Technologies and Management Systems for Sustainable Transportation
- **Track 4:** Renewable Energy Integration, Control and Management
- **Track 5:** Demand Response Management, Stability in Microgrids/Smart Grids and Energy Trading
- **Track 6:** AI, ML, data analytics and Cyber Security and IoT Applications to Sustainable Energy and Electric Transportation.

SeFet 2025 features **15 Special Technical Sessions**, chosen from numerous proposals submitted by national and international researchers, industry experts, scientists, and academicians. These sessions have been curated to ensure broad coverage of interdisciplinary research in energy and electrical engineering, going beyond the core conference themes. These sessions provide a platform for focused discussions, innovative research exchange, and collaborative opportunities in areas such as hydrogen energy, cyber-physical systems, electric mobility, power conversion, and sustainable building solutions. Each session is curated by expert organisers and supported by a minimum of eight high-quality papers, fostering deep engagement among researchers, industry professionals, and policymakers. The diversity of these sessions reflects the conference's commitment to inclusivity, technical depth, and global sustainability goals.

**List of Special Sessions:**

- **SS1:** Advances in Solar PV: Design, Reliability, Integration, Applications, and Sustainability
- **SS2:** Smart Management and Fault Diagnosis in EV Battery System
- **SS3:** Innovative and Interdisciplinary Approaches for Sustainable Electrification
- **SS4:** Power System Monitoring, Protection and Control in the Presence of Inverter Based Resources and E-Mobility
- **SS5:** Empowering the Future with Hydrogen-Based Systems
- **SS6:** Innovative Protection Strategies, Resilient Architectures, and Advanced Power Conversion for Next-Generation Energy Systems
- **SS7:** Towards Net-Zero: Sustainable Building Energy Systems and Management
- **SS8:** Advancing Sustainability through Hybrid Renewable Energy Systems
- **SS9:** Cyber-Physical Innovations for a Green Energy-Transportation Future
- **SS10:** Decarbonization Methods, Policies, and Tools for a Sustainable Energy Transition
- **SS11:** Transformative Power Conversion Systems for Future-Ready Electric Vehicle and Energy Grids
- **SS12:** Energy management through hierarchical control
- **SS13:** Impact of Virtual Synchronous Machine (VSM) Based Resources and Dynamic Loads in Modern Power Systems
- **SS14:** Cyber-Secure Energy System: Enhancing Management for Smart EV Operation and Charging Infrastructure
- **SS15:** Integration of Digital Twin in Electric Vehicle Control Systems

SeFeT 2025 is having large participation from authors across India, with papers submitted from top institutes showcasing India's growing focus on sustainable energy and electric transportation.




Distribution of registered authors in SeFet 2025.

# Our Sponsors

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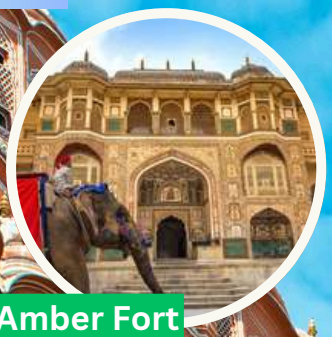
We sincerely thank all our sponsors for their generous support, which played a crucial role in the successful organization of SeFet 2025. Their contribution helped bring together researchers from across India to share knowledge and drive innovation in sustainable energy and electric transportation.



Amber Fort

Nahargarh

City Palace

Birla Temple

Jal Mahal

Jantar Mantar

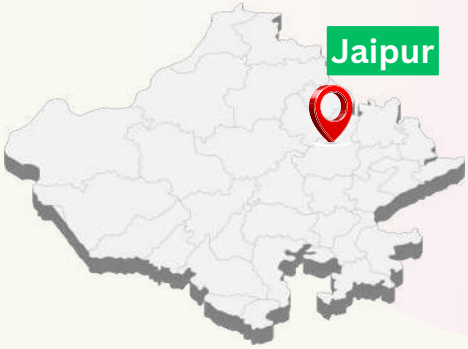
Albert Hall

Hawa Mahal

# About Jaipur - Pink City

Rajasthan's beautiful **Pink City Jaipur**, is the capital and largest city of Rajasthan. Jaipur has attractions like Hawa Mahal, Amber Fort, Jaigarh Fort, Nahargarh Fort, Jal Mahal, City Palace, Jantar Mantar, and Albert Hall Museum. Renowned globally for its coloured gems, the capital city of Rajasthan combines the allure of its ancient history with all the advantages of a metropolis. The bustling modern city is one of the three corners of the golden triangle that includes Delhi, Agra and Jaipur.


The story goes that in 1876, the Prince of Wales visited India on a tour. Since the colour pink was symbolic of hospitality, Maharaja Ram Singh of Jaipur painted the entire city pink. The pink that colours the city makes for a marvellous spectacle to behold. Jaipur rises up majestically against the backdrop of the forts Nahargarh, Jaigarh and Garh Ganesh Temple. Jaipur traces back its origins to 1727 when it was established by Jai Singh II, the Raja of Amber. He shifted his capital from Amber to the new city because of the rapidly-growing population and an increasing water scarcity. Planned by Vidyadhar Bhattacharya, using the established principles of Vastu Shastra, Jaipur holds the distinction of being the first planned and walled city of India.




Map of Rajasthan

This city of Rajputs is also well known for its fairs and fests that are held on a grand level. The festivals include kite festival, camel festival, teej, gangaur, elephant festival, to name a few. To add on to its liveliness, this place has brilliant bazaars filled with bright turbans and ethnic attire, hand-dyed and embroidered textiles, pretty jewellery and delicious food. All these things can draw anyone towards them. Dressed in pink, this royal city of Rajasthan, Jaipur is the apt blend of heritage, palaces, culture and art and the flamboyance of this place can be experienced only by visiting it. It is renowned for its peace and safety.


Tourist Map

## Pandit Madan Mohan Malaviya

(1861-1946)

Pandit Madan Mohan Malaviya was a prominent Indian nationalist, social reformer, and educationist. His contributions to education, the freedom struggle, and social equality have left a lasting legacy in India's history.

# About MNIT Jaipur

Malaviya National Institute of Technology (MNIT) Jaipur, established in 1963 as Malaviya Regional Engineering College, is a premier institution of higher education in India. It was founded jointly by the Government of India and Government of Rajasthan to impart quality technical education. In recognition of its academic excellence and national importance, the institute was elevated to a National Institute of Technology (NIT) status on 26th June 2002, and subsequently declared an Institute of National Importance by an Act of Parliament on 15th August 2007. MNIT Jaipur is fully funded by the Ministry of Education (Shiksha Mantralaya), Government of India.

Nestled in the heart of the historic Pink City, the MNIT campus spans 317 acres of lush greenery, blending modern architecture with natural beauty. The campus is thoughtfully planned and houses state-of-the-art academic and administrative buildings, well-equipped laboratories, residential hostels, and on-campus accommodation for faculty and staff. It is a self-sufficient community with facilities such as a staff club, primary health center, post office, bank, shopping complex, gymnasium, playing fields, guest houses, and canteens. The institute benefits from proximity to the airport, railway stations, and major business districts. Jaipur, popularly known as the Pink City, is celebrated for its blend of heritage, art, and modernity. Home to UNESCO World Heritage Sites such as Jantar Mantar and Amber Fort and bustling markets known for traditional crafts, jewelry, and blue pottery, the city offers a culturally enriching backdrop for academic pursuits. With a strong academic foundation, world-class infrastructure, and a vibrant cultural setting, MNIT Jaipur provides an inspiring environment for education, research, and innovation.

## Institute Motto

**योगः कर्मसु कौशलम**

# About Centre for Energy & Environment

The Centre for Energy and Environment (CEE) at Malaviya National Institute of Technology (MNIT) Jaipur serves as a leading interdisciplinary hub dedicated to developing sustainable solutions for global energy challenges and environmental degradation, in anticipation of the profound transformations expected in energy systems over the coming decades. With the global shift towards clean energy, the CEE is committed to advancing sustainable technologies and fostering innovation in renewable energy systems, energy efficiency, and environmentally responsible practices. Established to support India's transition towards a low-carbon future, CEE promotes solar, wind, bio-energy, energy-efficient buildings, and clean technologies. It advances research across both component and system levels, integrating academic expertise with practical implementation.

CEE undertakes numerous national and international collaborative projects, supported by the public and private sectors, contributing to policy development and deploying sustainable energy solutions. Its state-of-the-art laboratories are equipped with advanced tools to support hands-on research, testing, and standardisation of energy-related equipment. CEE offers M. Tech. & Ph. D. programs and short-term training courses to build skilled manpower for academia and industry. Its mission includes promoting awareness, education, and cost-effective innovations that meet environmental, social, and economic sustainability goals.

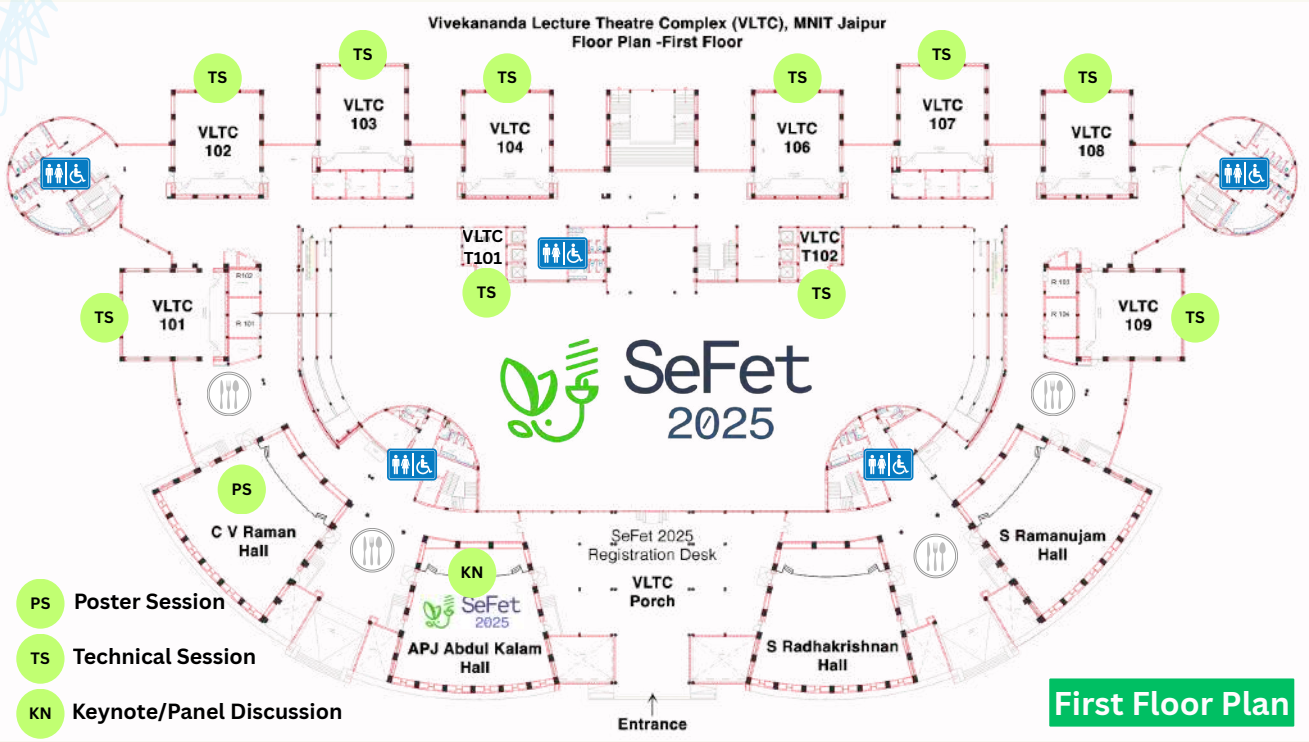
Supported by a team of experienced faculty and global partnerships, CEE is recognized as a centre of excellence in northwest India, actively contributing to clean energy development, knowledge dissemination, and integrating green technologies across sectors.

Centre for Energy & Environment

# About SeFet 2025 Venue - VLTC


Vivekananda Lecture Theater Complex (VLTC), MNIT Jaipur

The **Vivekananda Lecture Theatre Complex (VLTC)** ia facinating piece of architecture inside the Malaviya National Institute of Technology Jaipur campus. It has 34,360 sq. m. of covered area. The building is centrally air conditioned with 43 theatres with a seating capacity of 120 people each and 6 theatres with a seating capacity of 240 people each and smart class rooms. VLTC can host ~6500 Pax at a time. The building is also equipped with a roof-top solar PV power plant.




Prabha Bhawan, MNIT Jaipur

# IEEE Fellows at SeFet 2025

A landmark feature of SeFet 2025 is the gathering of 12 renowned IEEE Fellows, each representing deep expertise and decades of innovation in fields such as power electronics, smart grids, electric vehicles, and energy systems.


**Kouki Matsuse**
Meiji University, Japan


**Bhim Singh**
IIT Delhi


**Ayman EL-Refaie**
Marquette University, USA


**Jian Sun**
Rensselaer Polytechnic Institute, USA


**Dipti Srinivasan**
NUS, Singapore


**Gourab Majumdar**
Mitsubishi Electric, Japan


**Akshay K. Rathore**
NUS, Singapore


**Vinod Khadkikar**
Khalifa University, UAE


**Juan José Rodríguez-Andina**
University of Vigo, Spain


**B. K. Panigrahi**
IIT Delhi


**Sukumar Mishra**
IIT Delhi


**Biplab Sikdar**
NUS, Singapore

# SeFet 2025 Industry Session

Join us at SeFet 2025 for a dynamic Industry Session that brings together leading companies at the forefront of engineering and technology innovation. Titled "Innovations and Insights from Industry Leaders," this session is designed to bridge the gap between academia and industry by showcasing real-world applications, emerging technologies, and current industry trends. Whether you're a student exploring career paths, a researcher aligning your work with practical needs, or a professional staying ahead of technological advancements, this session offers valuable insights and opportunities.

Attendees will hear directly from industry experts representing top companies, including Hioki India Pvt Ltd., Genus Power Infrastructures Ltd, Mitsubishi Electric India Pvt. Ltd., Normet India Pvt Ltd, OPAL-RT Technologies India Pvt. Ltd., and Tobor – EV Charging Solutions. Through a series of concise, high-energy talks, each speaker will present how their organization is driving innovation across sectors like power infrastructure, electric mobility, automation, and smart energy systems.

This event is a must-attend for students and young professionals seeking to understand current industry directions, researchers looking to translate academic work into real-world applications, and anyone eager to connect with influential companies and explore potential collaborations. Don't miss this chance to learn, engage, and be inspired by the innovation leaders of today and tomorrow.

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# SeFet 2025 Awards

IEEE SeFet2025 recognizes exemplary contributions across four award categories, celebrating excellence in research, presentation, and participation:

**1. Outstanding Doctoral Thesis Award** sponsored by HIOKI India Pvt Ltd.

Introduced for the **first time at SeFet**, this award recognizes exceptional Ph.D. dissertations in sustainable energy and electric transportation, defended between January 2023 and April 15, 2025, at recognized Indian institutions. Selected from numerous national entries, the finalists will present their work during the conference, and the top three winners will receive the award sponsored by HIOKI India Pvt Ltd.

**2. Student Travel Awards**

For the **first time at SeFet**, the conference is introducing Student Travel Awards to twenty-five deserving postgraduate students and early-career scholars. Based on academic merit, financial need, and travel distance, these awards provide monetary support to offset travel expenses, enabling recipients to present their research and engage with global experts at the conference.

**3. Best Paper Awards**

SeFet 2025 will honor outstanding research contributions through Best Paper Awards, selected from each oral technical session. Papers will be evaluated on originality, technical depth, clarity of presentation, and relevance to conference themes. Winners will be formally recognized during the valedictory ceremony, highlighting their research quality and delivery excellence.

**4. Best Poster Awards**

SeFet 2025 will acknowledge excellence in visual research communication through Best Poster Awards, presented in each poster session. Winners will be selected based on research quality, clarity of design, visual impact, and interactive engagement with attendees. Winners are honored at the valedictory session with certificates, highlighting their innovative research and presentation skills.

# SeFet 2025 Conference Schedule

**DAY 1 - 9TH JULY, 2025 (WEDNESDAY)**
VIVEKANANDA LECTURE THEATRE COMPLEX (VLTC), MNIT JAIPUR

| Time | Program | Venue |
|---|---|---|
| 08:00 AM onwards | SeFet 2025 Registration | VLTC Porch |
| 09:30 AM - 11:00 AM (Parallel Sessions) | **Tutorial 1:** Micro-grids: Control, Protection, and Power Quality Aspects<br>Speaker(s) : Vinod Khadkikar and Hatem Zeineldin (Khalifa University, UAE) | VLTC 108 |
| | **Tutorial 2:** Power-system Modeling for Future Grids: forays into the time domain<br>Speaker: Sairaj Dhople (University of Minnesota,USA) | VLTC 107 |
| 11:00 AM - 11:15 AM | Tea Break | VLTC |
| 11:15 AM - 12:30 PM (Parallel Sessions) | **Tutorial 1:** Micro-grids: Control, Protection, and Power Quality Aspects<br>Speakers : Vinod Khadkikar and Hatem Zeineldin (Khalifa University,UAE) | VLTC 108 |
| | **Tutorial 2:** Power-system Modeling for Future Grids: forays into the time domain<br>Speaker: Sairaj Dhople (University of Minnesota,USA) | VLTC 107 |
| 12:30 PM - 01:30 PM | Lunch Break | VLTC |

## DAY 1 - 9TH JULY, 2025 (WEDNESDAY)

| Time | Program | Venue |
|---|---|---|
| 01:30 PM - 03:00 PM (Parallel Sessions) | **WIE Keynote 1:** Leadership Development for Women in STEM<br>Speaker: Prerna Gaur, NSUT Delhi | APJ Abdul Kalam Hall |
| | **WIE Keynote 2:** Recruitment & Retention of Women in Engineering & Technology Globally<br>Speaker: Tripta Thakur, NPTI Faridabad | |
| | **Tutorial 3:** Electrifying Mobility: From Topologies to Grid-Aware Charging<br>Speaker(s): Sivaneasan Balakrishnan and Sivakumar Nadarajan (SIT, Singapore) | VLTC 108 |
| 03:00 PM - 03:15 PM | Tea Break | VLTC |
| 03:15 PM - 04:30 PM (Parallel Sessions) | **WIE Panel Discussion**<br>Innovation & Leadership Opportunities for Women in Power and Energy Sectors | APJ Abdul Kalam Hall |
| | **Tutorial 3:** Electrifying Mobility: From Topologies to Grid-Aware Charging<br>Speaker(s): Sivaneasan Balakrishnan and Sivakumar Nadarajan (SIT, Singapore) | VLTC 108 |
| 04:30 PM - 05:30 PM | **Industry Session** | APJ Hall |
| 05:30 PM - 06:30 PM | **Poster Session-1**<br>and Networking Tea | C V Raman Hall |

End of Day 1

**DAY 2 - 10TH JULY, 2025 (THURSDAY)**

VIVEKANANDA LECTURE THEATRE COMPLEX (VLTC), MNIT JAIPUR

| Time | Program | Venue |
|---|---|---|
| 08:00 AM onwards | SeFet 2025 Registration | VLTC Porch |
| 09:00 AM - 10:30 AM | **Technical Session - 1**<br>Oral Session-1 to Oral Session-10 | VLTC 101-109, T101 & T102 |
| 10:30 AM - 11:00 AM | **Poster Session - 2**<br>and Networking Tea | C V Raman Hall |
| 11:00 AM - 01:00 PM | **Keynote 1:** Artificial Intelligence in Power Electronics – Transitioning from Auxiliary Technology to Core Technology<br>Speaker: Juan José Rodríguez-Andina, Uni. of Vigo, Spain | APJ Abdul Kalam Hall |
| | **Keynote 2:** Energy Conversion for a Sustainable Future -Revived Role of Power and Energy<br>Speaker : Ayman M. EL-Refaie, Marquette University, USA | |
| | **Keynote 3:** From Frequency Scan to Immittance-Based Stability Theory:Frequency-Domain Methods for Future Power Systems<br>Speaker : Jian Sun, Rensselaer Polytechnic Institute, USA | |
| 01:00 PM - 02:00 PM | Lunch Break | VLTC |

DAY 2 - 10TH JULY, 2025 (THURSDAY)

| Time | Program | Venue |
|---|---|---|
| 02:00 PM - 03:30 PM | **Technical Session - 2**<br>Oral Session-11 to Oral Session-20 | VLTC 101-109, T101 & T102 |
| 03:30 PM - 04:00 PM | **Poster Session - 3**<br>and Networking Tea | C V Raman Hall |
| 04:00 PM - 05:30 PM | **Technical Session - 3**<br>Oral Session-21 to Oral Session-30 | VLTC 101-109, T101 & T102 |
| 05:30 PM - 06:30 PM | **Inauguration of 5th IEEE SeFet 2025** | APJ Abdul Kalam Hall |
| 07:00 PM - 09:30 PM | **Cultural Night and Welcome Dinner** | VLTC |

End of Day 2

**DAY 3 - 11TH JULY, 2025 (FRIDAY)**

VIVEKANANDA LECTURE THEATRE COMPLEX (VLTC), MNIT JAIPUR

| Time | Program | Venue |
|---|---|---|
| 08:00 AM onwards | SeFet 2025 Registration | VLTC Porch |
| 09:00 AM - 10:30 AM | **Technical Session - 4**<br>Oral Session-31 to Oral Session-40 | VLTC 101-109, T101 & T102 |
| 10:30 AM - 11:00 AM | **Poster Session - 4**<br>and Networking Tea | C V Raman Hall |
| 11:00 AM - 01:00 PM | **Keynote 4:** AI-Driven Decision Intelligence for Resilient and Sustainable Smart Grids<br>Speaker: Dipti Srinivasan, NUS Singapore | APJ Abdul Kalam Hall |
| | **Keynote 5:** Silicon and Wide Bandgap Power Semiconductors/Modules for Power Conversion: Trends, New Technologies, and Challenges<br>Speaker: Gourab Majumdar, Mitsubhishi, Japan | |
| | **Keynote 6:** Hydrogen integrated solar system for Net-Zero Built Environment: Challenges and Opportunities<br>Speaker: Tapas Mallick, University of Exeter, UK | |
| 01:00 PM - 02:00 PM | Lunch Break | VLTC |
| 02:00 PM - 03:30 PM | **Technical Session - 5**<br>Oral Session-41 to Oral Session-50 | VLTC 101-109, T101 & T102 |

DAY 3 - 11TH JULY, 2025 (FRIDAY)

| Time | Program | Venue |
|---|---|---|
| 03:30 PM - 04:00 PM | **Poster Session - 5** and Networking Tea | C V Raman Hall |
| 04:00 PM - 04:45 PM | **Keynote 7:** More Electric Propulsion for Transportation<br>Speaker : Kouki Matsuse, Meiji University, Japan | APJ Abdul Kalam Hall |
| 04:45 PM - 06:00 PM | **Students and Young Professional (SYP) Panel Discussion**<br>Beyond Degrees: Navigating Careers in Engineering and Technology | APJ Abdul Kalam Hall |
| 06:30 PM onwards | SeFet 2025 Gala Dinner | VLTC |

End of Day 3

**DAY 4 - 12TH JULY, 2025 (SATURDAY)**

VIVEKANANDA LECTURE THEATRE COMPLEX (VLTC), MNIT JAIPUR

| Time | Program | Venue |
|---|---|---|
| 08:00 AM onwards | SeFet 2025 Registration | VLTC Porch |
| 09:00 AM - 10:30 AM | **Technical Session - 6**<br>Oral Session-51 to Oral Session-60 | VLTC 101-109, T101 & T102 |
| 10:30 AM - 11:00 AM | **Poster Session - 6** and Networking Tea | C V Raman Hall |

## DAY 3 - 11TH JULY, 2025 (FRIDAY)

| Time | Program | Venue |
|---|---|---|
| 10:50 AM - 11:30 PM | HIOKI Outstanding Doctoral Thesis Award Presentations | APJ Abdul Kalam Hall |
| 11:30 AM - 12:30 PM | **Academic Panel Discussion**<br>Navigating Challenges and Achieving Success in Academia and Research | |
| 12:30 PM - 01:30 PM | **Valedictory Session and Awards Distribution** | |
| 01:30 PM - 02:30 PM | Lunch Break | VLTC |
| 02:30 PM | Jaipur City Tour | - |

End of Day 4

# Glimpses of SeFet 2025

Conference Venue- VLTC, MNIT Jaipur


Registration Desk


Entrance Decor

# Glimpses of SeFet 2025


Speaker and Panelists

APJ Abdul Kalam Hall


Rajasthan Tourism

# Day 1 - SeFet 2025

**Tutorials, Women in Engineering & Local Warmth**

The first day of the SeFet 2025 conference opened with great enthusiasm at the Vivekananda Lecture Theatre Complex (VLTC), MNIT Jaipur. The morning began with the registration of over 500 delegates, including guests from 15+ countries, who were welcomed with traditional Rajasthani hospitality—featuring breakfast delicacies and handcrafted souvenir kits curated in partnership with local artisans. The day's academic program commenced with two parallel tutorials: "Microgrids: Control, Protection, and Power Quality Aspects" by Prof. Vinod Khadkikar and Dr. Hatem Zeineldin (Khalifa University, UAE), and "Power-System Modeling for Future Grids" by Prof. Sairaj Dhople (University of Minnesota, USA). These technical sessions set the tone for advanced discussions throughout the event. In the afternoon, the focus shifted to empowerment and inclusivity through the Women in Engineering (WIE) segment. Two impactful keynote addresses were delivered by Prof. Prerna Gaur (NSUT Delhi) and Prof. Tripta Thakur (NPTI Faridabad), highlighting leadership and global opportunities for women in STEM fields. This was followed by a vibrant WIE panel discussion on "Innovation & Leadership in Power and Energy," drawing participation from academia and industry alike. The day concluded with a poster session and networking tea, which provided opportunities for cultural exchange. The ambiance of MNIT Jaipur, enhanced by Rajasthani hospitality and décor, offered attendees a rich and immersive welcome experience for life time.

**Industry Session and Poster Session**

The Industry Session provided a rare opportunity to hear directly from industry professionals, bridging the gap between academia and industry. The experts shared insights on the latest innovations in energy systems, sustainable energy technologies, and the role of power electronics in reshaping the future. The session wasn't just about listening—it encouraged a two-way exchange of ideas, where participants posed questions, shared opinions, and discussed real-world challenges that the industry faces. In parallel, the Poster Session-1 allowed researchers to showcase their ground-breaking work on sustainable energy technologies and electric mobility. This session was a vibrant hub of discussion, with presenters and participants exchanging knowledge on cutting-edge research. The posters covered a variety of topics, from the future of microgrids to electric vehicle (EV) charging technologies. Attendees walked through the posters, engaging in technical discussions and networking with researchers.

# Glimpses of SeFet 2025


Registration Desk

Food arrangements

# Day 1 - SeFet 2025 Tutorial Sessions

Tutorial 1 - Prof. [illegible] Zeineldin, Khalifa University, Abu Dhabi, UAE

Tutorial 1 - Prof. Vinod Khadkikar, Khalifa University, Abu Dhabi, UAE


Tutorial 2 - Prof. Sairaj Dhople, University of Minnesota Twin Cities, USA

Tutorial 3 - Prof. S Nadarajan SIT Singapore

Tutorial 3 - Prof. Sivaneasan SIT Singapore

# Women in Engineering - SeFet 2025

The Women in Engineering (WIE) event at 5th IEEE International Conference on Sustainable Energy and Future Electric Transportation (SeFet-2025) provided a dynamic platform to spotlight women leaders in STEM and foster meaningful discussions on leadership, inclusion, and innovation in the power and energy sectors. The WIE event, featuring two keynote sessions and a panel discussion, was held on 9th July 2025 from 01:30 PM to 04:30 PM at the APJ Abdul Kalam Hall, Vivekananda Lecture Theatre Complex (VLTC), Malaviya National Institute of Technology (MNIT) Jaipur. Approximately 300 participants attended and witnessed this remarkable WIE event. The WIE events started by the traditional lighting the lamp, followed by welcome address of Dr. Dipti Saxena.


Dipti Saxena


WIE event Inauguration

# Women in Engineering - SeFet 2025

The first WIE keynote session, titled “Leadership Development for Women in STEM” was delivered by Prof. Prerna Gaur, Director , NSUT, Delhi and IEEE India council chair Prof. Gaur delivered an inspiring talk on empowering women in Science, Technology, Engineering, and Mathematics (STEM) by fostering leadership skills and addressing the challenges faced by women in technical domains. She discussed strategies to overcome systemic barriers, build confidence, and create inclusive environments where women can thrive and lead. Her session emphasized the importance of mentorship, self-belief, and institutional support in nurturing future women leaders in STEM.



# Women in Engineering - SeFet 2025

The second WIE keynote session, titled “Recruitment & Retention of Women in Engineering & Technology Globally” was presented by Prof. Tripta Thakur, Director General (NPTI, Faridabad). She explored global strategies to enhance the recruitment and retention of women in engineering and technology. She highlighted best practices, organizational policies, and cultural shifts necessary to close gender gaps and promote long-term professional growth for women in technical careers. The session offered a global perspective while emphasizing localized solutions, inspiring organizations and educators to build more diverse and resilient system.



# Women in Engineering - SeFet 2025

The WIE panel discussion, entitled “Innovation & Leadership Opportunities for Women in Power and Energy Sectors” took place immediately following the keynote sessions, at the same venue.


WIE Panel Discussion

The discussion brought together distinguished women professionals from the globe to explore the evolving roles of women in the power and energy sectors. The session was very well dynamically moderated by Dr. Kalpana R. from NIT Surathkal and featured an expert panel comprising: Asha Rani M.A. (NIT Silchar), Trapti Jain (IIT Indore), Swathi Battulla (IIT Kanpur), Pranjali Sharma (IIT Roorkee), and Neha Mehta (University of Birmingham).

The session highlighted the critical and crucial role of gender diversity in driving technological advancement and sustainable energy solutions. Panelists shared personal experiences, success stories, and insights into overcoming academia as well as industry-specific challenges. Key focus areas included mentorship, institutional support, skill enhancement, and the cultivation of inclusive work cultures that empower women to lead with impact. The session served as a vibrant platform to inspire young and emerging women professionals and reinforce the importance of equal representation in shaping the future of power and energy sectors.

# Women in Engineering - SeFet 2025









Dr. Ravita Lamba from IIT Roorkee delivered the closing remarks, summarising key takeaways and emphasising the collective responsibility to foster a more inclusive and equitable future in engineering and energy sectors.


Industry Session

Networking Session

Networking Session

# Day 2 - SeFet 2025

**Keynote Wisdom, Scientific Exchange, Cultural Night & Welcome Dinner**

The second day of SeFet 2025 was marked by a series of high-impact keynote addresses, intensive technical sessions, and a grand inaugural ceremony. The morning began with parallel oral technical sessions (Sessions 1–10), which featured papers on sustainable energy systems, smart grids, AI applications in energy, and futuristic transportation models. This was followed by the second poster session, which created a platform for young researchers and PhD scholars to interact with international experts. The keynote session featured three distinguished speakers: Prof. Juan José Rodríguez-Andina (University of Vigo, Spain) who spoke on the shift of Artificial Intelligence from an auxiliary to a core technology in power electronics; Dr. Ayman M. EL-Refaie (Marquette University, USA and President, IEEE IAS), who discussed advancements in energy conversion and the pivotal role of efficient electric machines; and Prof. Jian Sun (Rensselaer Polytechnic Institute, USA), who introduced frequency-domain methods for stability in future power systems. The conference's official inauguration ceremony took place in the late afternoon and was a grand affair, led by Chief Guest Dr. Ayman M. EL-Refaie and Prof. N. P. Padhy, Director of MNIT Jaipur. It was attended by eminent professors, industry leaders, and international delegates, symbolizing a strong collaboration between academia and governance. The highlight of the day was the Rajasthani Cultural Night and Welcome Dinner, where guests enjoyed live folk music, Kalbeliya dance, puppet shows, and a traditional Rajasthani thali under a heritage-themed ambiance. The Rajasthan Tourism Department played an active role in coordinating the cultural evening, helping create an unforgettable, immersive experience for international guests.

SeFet 2025 Inauguration

# Day 2 - SeFet 2025 Keynote Lectures



Keynote 1: Juan José Rodríguez-Andina, Uni. of Vigo, Spain


Keynote 2: Ayman M. EL-Refaie, Marquette University, USA

Keynote 3: Jian Sun, Rensselaer Polytechnic Institute, USA

# Day 2 - Technical sessions


5th IEEE SeFet 2025 Organizing team

# Day 2 - SeFet 2025 Inauguration


N P Padhy


Ayman M. EL-Refaie


Juan Andina


Jian Sun


Lava Bhargava


Kapil Pareek


Sunanda Sinha


5th IEEE SeFet 2025 Inauguration

# Day 2 - SeFet 2025 Inauguration


Vivekanand


Sunanda Sinha


Kapil Pareek


Jian Sun


Juan Andina


Lava Bhargava


N. P. Padhy


Ayman M. EL-Refaie

Unveiling of Conference Booklet

5th IEEE SeFet 2025 Inauguration

# Day 2 - SeFet 2025 Cultural Event




Traditional Rajasthani Cultural performance by Rana Dholi group

# Day 2 - SeFet 2025 Cultural Event




Traditional Rajasthani Cultural performance by Rana Dholi group

# Day 2 - SeFet 2025 Cultural Event



# Day 2 - SeFet 2025 Welcome Dinner

# Day 3 - SeFet 2025

**Industry Insights, Student Voices & Chokhi Dhani Gala Dinner**

Day 3 began with another strong technical agenda, with oral sessions (Sessions 31–40) exploring energy storage, hydrogen systems, AI-powered grid forecasting, and mobility electrification. A poster session followed, along with three keynote addresses. Prof. Dipti Srinivasan (NUS Singapore) discussed AI-driven decision intelligence in smart grids, Prof. Gourab Majumdar (Mitsubishi, Japan) spoke about silicon and wide bandgap semiconductor technologies, and Prof. Tapas Mallick (University of Exeter, UK) presented insights on hydrogen-integrated solar systems for net-zero buildings. These sessions were followed by additional oral technical sessions and a special Keynote by Prof. Kouki Matsuse (Meiji University, Japan) on “More Electric Propulsion for Transportation,” which tied directly into India’s emerging EV policy and innovation. A panel discussion with student and young professional (SYP) participants provided mentorship and career guidance to emerging researchers. In the evening, all delegates were transported to Chokhi Dhani, Jaipur’s iconic ethnic village resort, for the SeFet Gala Dinner. Organized with support from the Rajasthan Tourism Department, the gala featured camel and bullock cart rides, traditional dance performances, astrologers, mehandi stalls, and a grand Rajasthani buffet. VIP guests and keynote speakers were also escorted to strategic tourism locations such as Amber Fort, City Palace, and Hawa Mahal during the day through curated heritage tours led by certified guides. This blend of cultural celebration and intellectual exchange showcased Rajasthan’s unique ability to blend tradition with modernity.

Gala Dinner at Choki Dhani

# Day 3 - SeFet 2025 Keynote Lectures

Keynote 4: Dipti Srinivasan, NUS Singapore

Keynote 5: Gourab Majumdar, Mitsubishi Electric, Japan



Keynote 6: Tapas Mallick, University of Exeter, UK

# Day 3 - SeFet 2025 Keynote Lectures

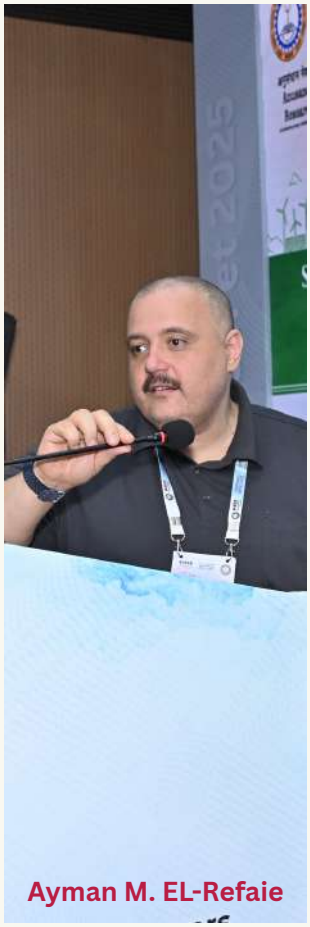

Keynote 7: Kouki Matsuse, Meiji University, Japan

# Day 3 - SeFet 2025 Panel Discussion


B Sivaneasan

Chirodeep Bakli


J P Singh


Ayman M. EL-Refaie


Ramesh Singh


Deepak Rawal


Rakesh Kapoor

# Day 3 - Gala Dinner at Choki Dhani


# Day 4 - SeFet 2025

**Awards, Valediction & Jaipur City Tour**

The final day of the conference maintained the same momentum, beginning with the final round of technical sessions (Sessions 51–61) followed by the HIOKI Outstanding Doctoral Thesis Award presentations, which spotlighted the best doctoral work across energy and transport disciplines. An academic panel discussion titled “Navigating Challenges and Achieving Success in Academia” addressed faculty development, publication excellence, and cross-border collaborations. The Valedictory Session and Award Distribution Ceremony was held in the presence of distinguished academicians and industry sponsors, with special appreciation expressed toward the Rajasthan Tourism Department for their cultural contributions and strategic support throughout the event. Post-lunch, a Jaipur City Tour was arranged for over 120 international and out-of-state delegates, covering Albert Hall Museum, Jal Mahal Viewpoint, and local craft bazaars. Delegates purchased souvenirs like blue pottery, miniature paintings, and block-printed garments, contributing directly to the local tourism economy. Rajasthan’s famed hospitality, colorful heritage, and seamless logistical coordination left an indelible mark on every participant, encouraging several guests to extend their stay to visit Udaipur, Jaisalmer, and Jodhpur.

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The closing remarks were delivered, acknowledging the collective efforts that made SeFet 2025 a success. The event concluded on a high note with a promise to continue pushing the boundaries of innovation in the energy and transportation sectors.


Academic Panel Discussion

# Day 4 - SeFet 2025 Panel Discussion


Bhim Singh


Akshay Rathore


B K Panigrahi


M V Aware


Biplab Sikdar


Sukumar Mishra


5th IEEE SeFet 2025

# Day 2 - SeFet 2025 Valedictory Session

Akshay Rathore

Ranjith Krishna Pai


5th IEEE SeFet 2025 Valedictory Session

5th IEEE SeFet 2025 Valedictory Session

# SeFet 2025


# SeFet 2025 - Jaipur City Tour


All Set for City tour

Prof. Matsuse at Hawa Mahal

# SeFet 2025

SeFet 2025 - Steering Committee Meeting


SeFet 2025 Registration Kit

# SeFet 2025

**5th IEEE International Conference on Sustainable Energy and Future Electric Transportation**

## Organizers

IEEE Advancing Technology for Humanity

## Centre for Energy and Environment

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**JLN Marg, Malaviya Nagar, Jaipur-302017,**
**Rajasthan, INDIA**

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