

*Two Days Workshop
On
IEEE Industry Applications Society Regional Leadership India
(August 22-23, 2024)*

Theme: “Accelerating e-Mobility Revolution for India’s Transportation”



Organized by

*Department of Electrical and Instrumentation Engineering (DEIE) and
IEEE IAS-PES Joint Student Branch Chapter TIET, Patiala
(P.O. Box 32, Bhadson Road, Patiala, Punjab, Pin -147004, India)*



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Program Schedule

Day-01: Thursday (22nd August 2024)				
Event	Resources person	Topic	Time	Venue
Registration			08:45 to 09:45 AM	LT-201
Inauguration	Prof. Padmakumar Nair, Director Prof. Ajay Batish, Deputy Director, Prof. Inderveer Chana, Prof. Sunil Kumar Singla, Dr. Rajesh Kumar, MNIT Jaipur	Welcome Address & Inaugural Remarks	09:45 to 10:30 AM	LT-201
Group photo session			10:30 to 10:40 AM	LT-201
High Tea			10:40 to 11:30 AM	LT-201
IEEE IAS DL Technical Talk	Prof. Rajesh Kumar, MNIT Jaipur, India	Intelligent Power Management and Control of Electric Drive in Electric Vehicles Using Reinforcement Learning	11:30 to 12:30 PM	LT-201
IEEE Technical Talk	Prof. Mukesh Singh, TIET Patiala	Battery Management System for EVs	12:30 to 01:20 PM	LT-201
Lunch Break			01:20 to 02:30 PM	Faculty Lounge
IEEE Technical Talk	Prof. Purna Gaur, Director, NSUT, Delhi	E Mobility and Optimization of Solar PV Array for Maximum Output Power under Different Partial Shading Conditions	02:30 to 03: 30 PM	LT-201



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IEEE Talk	Dr. Avoki Omekanda, Vice President, IEEE IAS, USA	Linking Research to Practice	03:30 to 04: 00 PM	LT-201
Tea Break			04:00 to 04:15 PM	LT-201
IEEE Talk	Mr. Srikanth Pillai, Chair, IEEE IAS CMD, Canada	Getting Involved with IEEE IAS	04:15 to 04:45 PM	LT-201
IEEE Talk	Mr. Rishi Kant Thakur, Vice-Chair IEEE PES Student and Young Professional Committee, IIT Delhi	IEEE OU Analytics and vTool Event Reporting	04:45 to 05:15 PM	LT-201
End of the Day-01				

Day-02: Friday (23rd August 2024)				
Event	Resources person	Topic	Time	Venue
IEEE Technical Talk	Dr. Arun Kumar, IIT Jammu, India	On-Board EV Charging: Exploring PFC Converters for Enhanced Performance	09:30 to 10:40 AM	LT-201
IEEE Talk	Dr. Rajesh M. Pindoriya, DEIE, TIET Patiala	IEEE Membership: A Magical Door to Professional Networking for Students and Research Scholars	10:40 to 11: 30 AM	LT-201
Tea Break			11:30 to 11:45 AM	LT-201
IEEE Technical Talk	Dr. Krishna Kumar Gupta, TIET Patiala	Power Electronics for Electric Vehicles: Challenges and Opportunities	11:45 to 12:40 PM	LT-201



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Lunch Break			12:50 to 02:00 PM	Faculty Lounge
IEEE Talk	Mr. Yadvendra Singh	How to use IEEE Concur Platform for Reimbursements	02:00 to 02:30 PM	LT-201
Participant-feedback and Valedictory Function			02:30 to 03:30 PM	LT-201
End of the Day-02				

Day 1: 22nd August 2024

The Department of Electrical and Instrumentation Engineering (DEIE) and the IEEE Industry Applications Society (IAS)-Power & Energy Society (PES) Student Branch Chapter at TIET Patiala organized a two-day workshop on IEEE Industry Applications Society (IAS) Regional Leadership India on August 23-24, 2024.

Objective and Scope of the Event:

The primary objective of the event was to provide a platform for young professionals and students associated with the IEEE Industry Applications Society (IAS), Power & Energy Society (PES), and Power Electronics Society (PELS) to network, share knowledge, and engage in discussions about the latest advancements and trends in their fields. The event included technical sessions, workshops, and networking opportunities, facilitating the exchange of ideas and experiences among participants.

Event Highlights:

1. *Technical Sessions:* Featured renowned speakers and experts in industry applications, power and energy, and power electronics.
2. *Workshops:* Provided hands-on training in IEEE vTools applications, emerging technologies, and skill development.
3. *Networking Opportunities:* Created a dedicated platform for young professionals and students to connect with industry leaders, peers, and mentors.

Benefits to the Student Community:

1. *Knowledge Transfer:* Facilitated the exchange of knowledge and expertise among young professionals and students.
2. *Networking Opportunities:* Strengthened the IEEE community by fostering connections and collaborations.
3. *Professional Development:* Enhanced the skills and competencies of participants through workshops and technical sessions.

The IEEE IAS Regional Leadership Program Workshop commenced with great enthusiasm under the esteemed banner of IEEE, focusing on accelerating the e-mobility revolution for India's transportation. This two-day workshop saw the participation of distinguished guests, esteemed dignitaries, and a talented group of participants, creating an atmosphere of collaboration and learning.

The event began with the inauguration ceremony, which included the traditional lighting of the ceremonial lamp, a symbol of enlightenment and knowledge sharing. The dignitaries present at the event included the honorable Director, Deputy Director, and senior faculty members

from the Institution, along with Dr. Rajesh Kumar, IEEE IAS Distinguished Lecturer from MNIT Jaipur. The ceremony was followed by insightful speeches from various esteemed leaders, who shared their thoughts on the importance of innovation, research, and collaboration in the field of e-mobility. Professor Sunil Kumar Singla, Head of the Electrical and Instrumentation Engineering Department, delivered the welcome address, providing a comprehensive overview of the department's contributions and achievements in the field of electric vehicles and energy systems. Following the welcome address, Prof. Padmakumar Nair, Director TIET and Prof. Ajay Batish, Deputy Director, TIET addressed the participants with their inspiring speech. Following this, a photo session with the participants was organized along with high tea.









The technical sessions began with a keynote address by Dr. Rajesh Kumar on ‘Intelligent Power Management and Control of Electric Drive in Electric Vehicles Using Reinforcement Learning’. His talk highlighted cutting-edge research and innovative solutions in electric drive management, offering participants valuable insights into the latest advancements in the field.



Following this, Professor Mukesh Singh from the Department of Electrical and Instrumentation Engineering delivered a technical talk on ‘Applications of Renewable Energy in Electric Vehicles’, where he presented real-world applications of renewable energy integration in electric mobility systems.





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In the post-lunch session, Professor Prerna Gaur, a leader in electrical engineering and artificial intelligence, shared her expertise on ‘E-Mobility and Optimization of Solar PV Array for Maximum Output Power under Different Partial Shading Conditions’. Her talk emphasized optimizing solar energy use for electric vehicle infrastructure, providing practical strategies for enhancing energy efficiency.



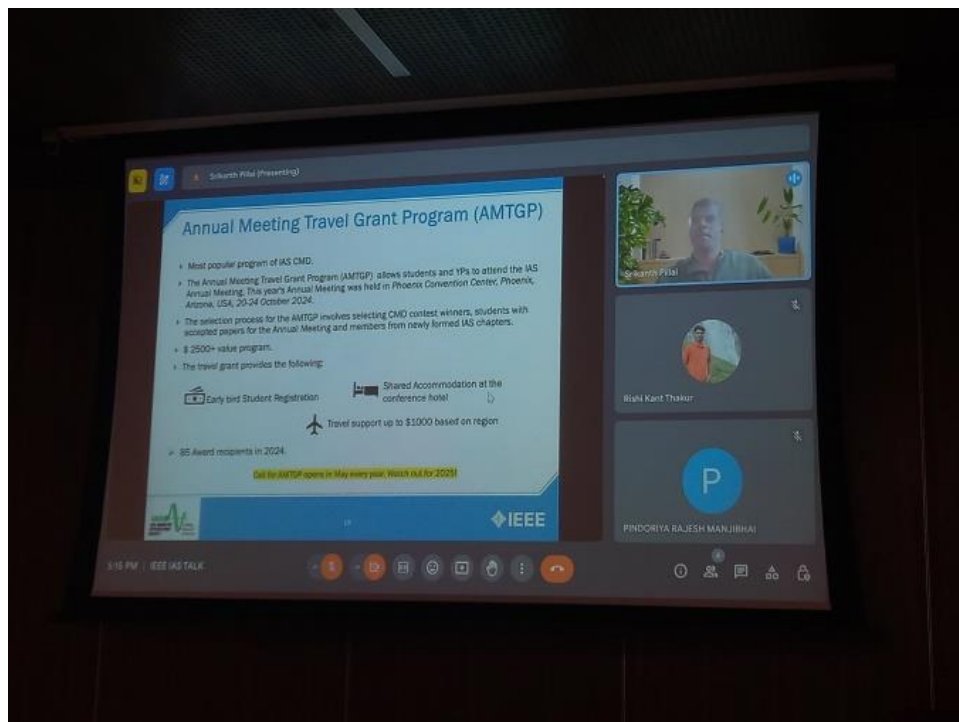


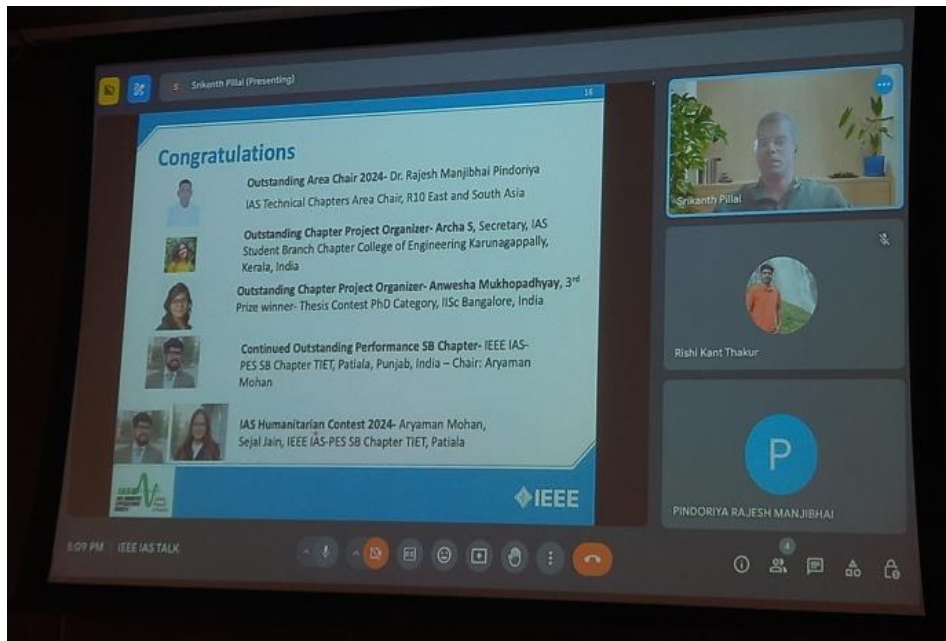
Additionally, participants were privileged to hear an online presentation by Professor Avoki M. Omekanda, Staff Research Engineer at General Motors and IEEE leader, on 'Linking Research to Practice'. His talk provided a global perspective on the intersection of research and industry applications, further enriching the knowledge base of the attendees.





The day concluded with informative sessions led by IEEE leaders Mr. Srikanth Pillai and Mr. Rishi Kant Thakur, focusing on the benefits of IEEE IAS Chapter membership and the use of IEEE vTools, respectively. These sessions emphasized professional development opportunities within the IEEE network and how to leverage IEEE resources for career growth and technical advancements.





The event closed with a vote of thanks, acknowledging the contributions of the dignitaries, speakers, and participants. The first day of the workshop was marked by deep discussions, insightful presentations, and meaningful networking, setting a positive tone for the upcoming sessions on Day 2.

Day 2: 23rd August 2024

The second day of the workshop commenced with a warm welcome to all participants, setting a positive tone for the sessions ahead. The attendees were greeted with enthusiasm, and a special mention was made of the distinguished guest speakers, acknowledging their valuable contributions to the workshop. The first session of the day featured Dr. Arun Kumar Verma, Senior Member of IEEE, USA. Dr. Verma, who holds a Ph.D. from IIT Delhi and has post-doctoral experience at NTU Singapore, delivered an insightful presentation on power electronics and renewable energy systems. He elaborated on topics such as bi-directional power flow and electric transportation, providing a comprehensive view of EV chargers and converters in the context of future energy needs. His talk was highly engaging, and the clarity of his delivery was appreciated by the audience. Following the session, a formal felicitation was conducted as a token of gratitude for Dr. Verma's contribution.







In the second session, Dr. Rajesh M. Pindoriya, Senior Member of IEEE and Assistant Professor at Thapar Institute of Engineering and Technology (TIET), Patiala, presented his research on advanced motor control for electric vehicles (EVs) and Green Hydrogen Vehicles. He discussed the control mechanisms for motors such as PMSM, BLDC, SRM, and SynRM, providing valuable insights into the applications of these motors in the evolving landscape of sustainable transportation. The session concluded with a gesture of appreciation for Dr. Pindoriya's engaging and informative talk.



A networking tea break followed, allowing participants to engage in informal discussions and exchange ideas, building on the technical content shared throughout the day. The third session of the day was led by Dr. Krishna Kumar Gupta, Associate Professor at TIET, who focused on multilevel inverters, fault-tolerant power converters, and their applications in renewable energy systems. Dr. Gupta, a recipient of several prestigious awards, delivered a thought-provoking presentation that highlighted the importance of power converter reliability and efficiency. The session ended with a formal felicitation to express thanks for Dr. Gupta's contributions.

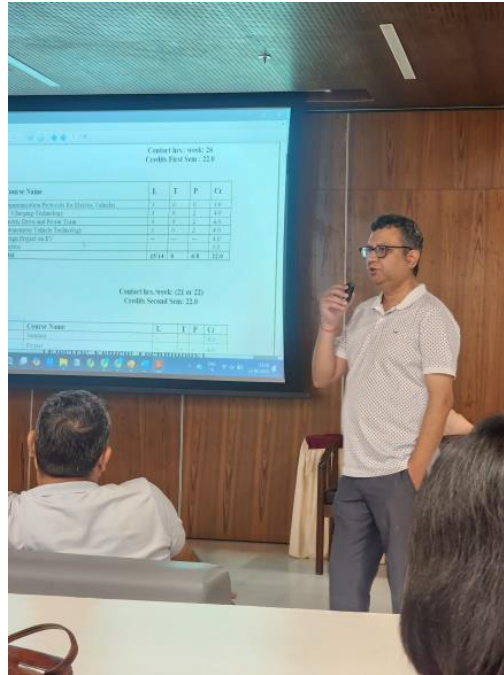




After Dr. Gupta's session, Mr. Yadvendra Singh gave an insightful presentation, sharing his expertise in digital controllers for power electronics and his ongoing Ph.D. research on Hybrid Renewable Energy Systems. As Chairperson of the IEEE PELS Student Branch Chapter, Mr. Singh's contributions to IEEE and his multiple awards, including the Outstanding Student Volunteer Award, were highlighted. His proficiency in MATLAB/Simulink and active involvement in IEEE events added depth to the session.



Following Mr. Yadendra Singh's session, Dr. Nitin Narang announced the launch of a new Master's Program on Electric Vehicles at Thapar Institute of Engineering and Technology and provided a concise overview of the course. This announcement generated excitement, highlighting the program's relevance in shaping future industry experts in the growing EV sector.



The participants were then invited for Lunch, which provided further opportunities for interaction and networking. The day's discussions and technical insights significantly enhanced the overall success of the event.



After lunch, the valedictory function began with much anticipation. Dr. Gurbinder Singh, Director of the TIET Derabassi Campus, graced the occasion as the chief guest. In his address, Dr. Singh emphasized the pivotal role of such academic gatherings in fostering innovation and collaborative learning, especially in rapidly evolving fields like renewable energy and electric vehicles. He also encouraged students to stay curious and continuously seek knowledge beyond the classroom, acknowledging the interdisciplinary nature of modern engineering challenges. Following his inspiring speech, the event proceeded with the certificate distribution ceremony. All participants were recognized for their dedication and active involvement throughout the sessions. The gesture was a reminder of the event's goal to not only impart knowledge but also motivate future leaders in the field of electrical engineering.





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The day concluded with a feedback session, where participants had the opportunity to share their experiences. Many expressed gratitude for the comprehensive range of topics covered, from multilevel inverters to electric vehicle technology, and appreciated the opportunity to interact with accomplished experts in the field. The feedback reflected the event's success in providing valuable learning and networking opportunities, leaving participants eager for future engagements. The event ended on a high note, marking another milestone in the journey of academic and professional development.







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End of the report