

Manchester Energy and Electrical Power Systems (MEEPS) Symposium 2023

Organised by the IEEE PES SBC at the University of Manchester (UoM)

On Friday 3rd November 2023 from 9:00 am – 5:00 pm, the IEEE PES Student Branch Chapter (SBC) at the University of Manchester (UoM) hosted their biggest annual event – MEEPS 2023, the Manchester Energy and Electrical Power Systems Symposium, at the Engineering Building A, Manchester Engineering Campus, Manchester, UK. This in-person event attracted 67 attendees (of which 33 were IEEE members) from 13 universities all over the UK and beyond, with delegates arriving from universities as far as India (Vellore Institute of Technology) and Nigeria (University of Benin). Most of the attendees were students and independent researchers, sponsor representatives and guests from industry and academia.

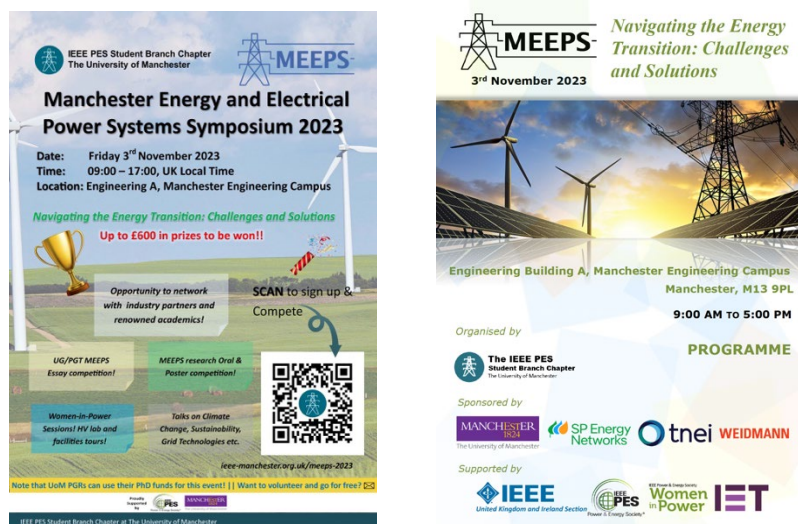


Figure 1: Poster (L) and Programme Cover (R)

MEEPS 2023 was themed 'Navigating the Energy Transition: Challenges and Solutions' – to provide an avenue to discuss opportunities and possible solutions to energy challenges, in attaining a more sustainable energy future. The event programme consists of three keynote speeches from delegates, two Women-in-Power talks and MEEPS research competition – 6 Oral and 14 Poster presentations.



Figure 2: Airam Perez Guillen's welcome speech (L) and Prof. Simon Rowland during the opening address (R)

The event kickstarted with a welcome speech by Mr Airam Perez Guillen, who is the chair of our Student Branch Chapter, and the chair of the MEEPS 2023 organising committee, on the importance and history of MEEPS. This was followed by an opening address given by Prof. Simon Rowland, Former Head of Department, Electrical and Electronic Engineering, University of Manchester and former president of the IEEE Dielectrics and Electrical Insulation Society. He introduced the University of Manchester and shared inspiring insights on the roles of academia and researchers towards addressing the challenges posed by the energy transition, inspiring young researchers.

The first of the three keynote speeches was delivered by Alexandra Campbell and Rebecca Threlfall, Senior and Lead Engineer at Scottish Power Energy Networks, respectively. Their speech on the topic — 'Asset management and System design factors' provided us with an overview of Scottish Power Energy Networks' technical operations and their unique solution for developing their future network plans. Afterwards, the MEEPS Oral presentation kickstarted with the first four of six researchers from different universities sharing their works, with questions from the audience and guest judges. The topics for the oral presentations were: 1) Trusted and Fully-distributed Coordination of Flexible Resources in Distribution Systems, 2) Managing the Future Electricity System with High Penetrations of Wind Capacity: a 14-zone disaggregated model of the GB power system, 3) Regulation of Disturbance Magnitude for Locational Frequency Stability Using Machine Learning and 4) Investigations on Surface Discharges at Oil-pressboard Interface of Insulation Used in Power Transformers.

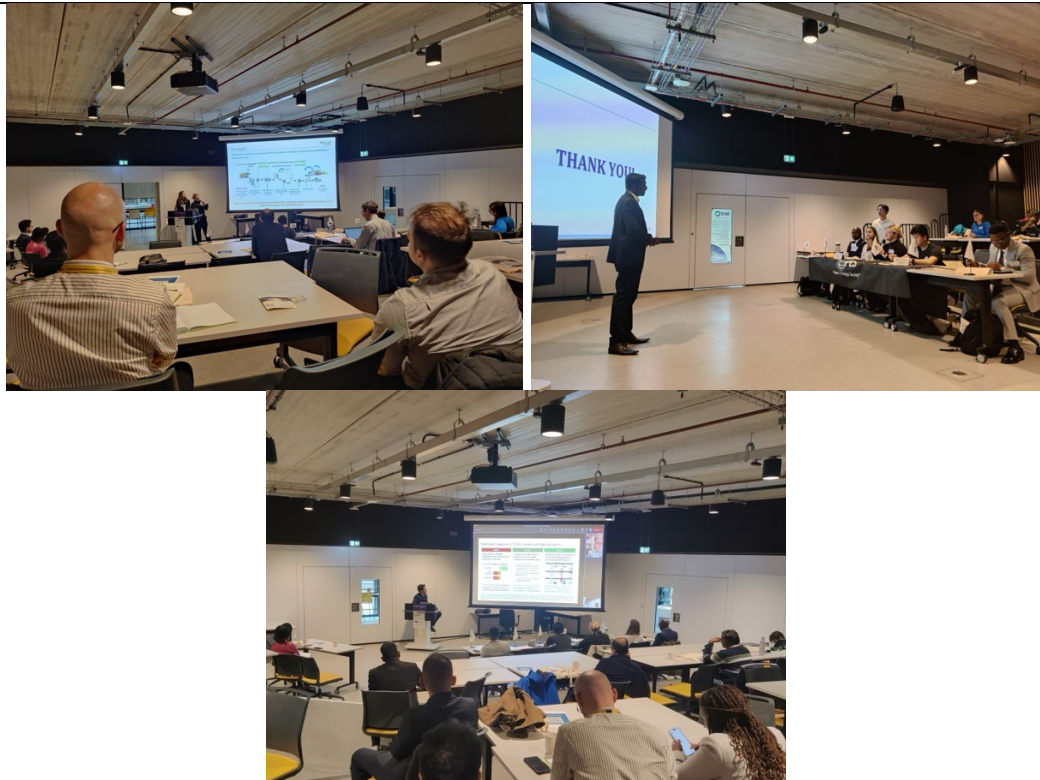


Figure 3: Snapshots of SPEN's keynote (L), Q&A session during the last oral presentation of the morning session (R), Women in Power Session (Bottom)

Following the morning talk session and a short tea break in which UK National Grid gave an open discussion talk, was a special IEEE Women-in-Power (WiP) session themed. Our guest speaker – Prof. Aoife Foley, Chair in Net Zero Infrastructure, the University of Manchester, shared her work on “Reengineering our environment, energy, economic and social systems for a ‘net’ Zero Carbon future” – while our second guest speaker – Olivia del Pino Herrera from Silicon Grid UK talked about her career path and her product for smart grids “Constellation”. Following this session, a panel with questions and answers from the audience, as well as the presenter, Lois Efe (vice-chair of the Student Branch Chapter), was presented, before heading to lunch.

Shortly after the lunch, and with food still available, some student researchers from different universities shared their research findings and solutions as regards attaining a more sustainable energy future via a Poster presentation format, with topics such as treeing in epoxy, damping of oscillations using vehicle to grid, batteries in wind-dominated areas of the network, and many others! After the poster session, tours of the high voltage laboratory at the University, and of the Engineering Building A took place, by the hands of Dr Vidyadhar Peesapati and the service delivery team, respectively (many thanks!).

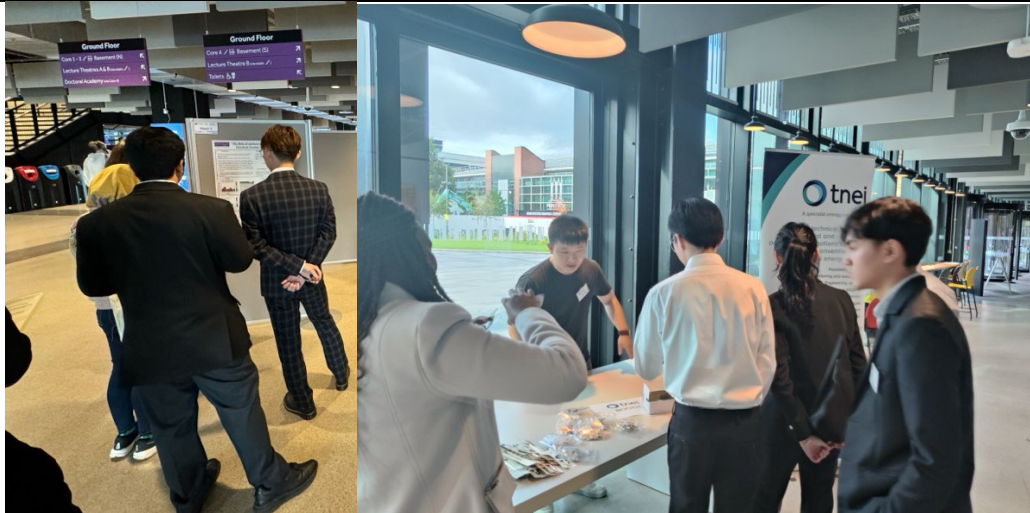


Figure 4: Snapshot of a MEEPS Poster presentation session (L) and a sponsor booth during the networking session (R).

The last lap of the program began with the second block of oral presentation, with the last two of the 6 oral presentations, with well-participated Q&A. The topics for the oral presentations were: 5) Subsurface Electrochemical Energy Storage, an Initiative for the Future, and 6) Interpreting the Value of Flexibility in Security-Constrained Transmission Expansion Planning. A second keynote speech by Dr Jaime Trivino, Senior Engineer at TNEI was delivered. He spoke about sub-synchronous oscillations and how they pose challenges in the integration of renewable energy sources. The third keynote was a speech by Prof. Joel Egwaile, from the University of Benin, Nigeria, where he spoke about the roadmap for sustainable energy transitions, including the use of energy efficiency, smart grid technologies and global treaties as vehicles towards achieving green energy shift.

Mr Airam Perez Guillen, rounded up the program with speech-style closing remarks on the event. The awards of the best Oral and Poster presentations, as well as the “Scottish Power Energy Networks Research for Industry (RFI)” and the “University of Manchester, Department of Electrical and Electronic Engineering Essay” competitions award were announced by guests in conjunction with the SBC chair, Mr Airam Perez Guillen.



Figure 5: Best Oral presentation prize awardee (L), Best Poster presentation prize awardee (C) and Best UoM Dept.EEE Essay awardee (R).

It is our delight to announce that Miss Shanay Skellern, from the University of Strathclyde (Scotland), won the best Oral presentation award, Mr Dax Blackhorse-Hull, from the University of Strathclyde (Scotland), the best Poster presentation award, Dr Andrey Churkin (University of Manchester) won the SPEN RFI award and Miss Charlotte Harries-Harris, from the University of Manchester, the UoM Dept. EEE best Essay award.

We would sincerely like to appreciate the kind support of our diverse sponsors (Scottish Power Energy Networks, TNEI, Weidmann and the University of Manchester Department of Electrical and Electronic Engineering) and our supporters (IEEE Women-in-Power (WiP) UK&I, IET, IEEE PES and IEEE UK&I) made this event a success. Special thanks go to the passionate and hard-working student branch committee members and also student volunteers from the University of Manchester.



Figure 6: Cross-section of MEEPS attendees (L), and corss-section of the MEEPS organising committee (R).

According to the feedback we collected after the event, 98% of the attendees expressed they strongly agreed that they are glad to have attended MEEPS 2023. Many mentioned that this event was “well-organised” with “a good variety of presentations”, though some criticism was made on speakers going over time, which is something we will work on for next editions.

The IEEE PES SBC at UoM would like to thank all participants for attending the event and special thanks again to all the sponsors and guests. For more information about MEEPS 2023 and IEEE PES SBC UoM, please visit: <http://www.ieee-manchester.org.uk/>