INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS

QUEENSLAND SECTION

ABN 67 431 648 974

ANNUAL GENERAL MEETING REPORT FOR 2024

PRESENTED AT
Brisbane Convention &
Exhibition Centre

ON
5 DECEMBER 2024

https://r10.ieee.org/queensland/

Contents

Section Chair

Section Chair's Report

Chandima Ekanayake, chandima@ieee.org
Section Chair

It is a great honour to serve as Chair of the IEEE Queensland Section during this special year, as IEEE celebrates its 140th anniversary. In 1884, as electricity began to have a profound impact on society, a small group of professionals in the electrical field came together in New York to form the American Institute of Electrical Engineers (AIEE). Today, IEEE stands as the world's largest technical professional organization, with more than 400,000 members. IEEE continues to be a global leader in providing exceptional service to its members through 39 technical societies, 139 different types of publications, and hosting hundreds of conferences worldwide. As a growing community, IEEE's impact will only expand in the years ahead, offering even more support to its members.

As one of the most active IEEE sections in Australia, the Queensland Section consistently organizes a wide range of technical and social events for its members. This year, our dedicated committee organized over 70 events. Since the pandemic, hosting events online has gained popularity within the IEEE community, which benefits a geographically vast section like ours, making it easier to connect members across Queensland Section
Some highlights from 2024 include:

- The Queensland Section organized 71 events based on available statistics.
- We celebrated IEEE's 140-year history with a special IEEE Day event, with inaugural Chair Prof. David Thiel as our chief guest.
- The section supported numerous student activities across several universities.
- Two students were funded to attend ANZCON 2024 in Auckland.
- We awarded travel grants to students to attend both international and local conferences.
- I had the privilege of representing the section at the R10 meeting in Kuala Lumpur, Malaysia, where I had the opportunity to meet with IEEE's leadership team and discuss the challenges of transitioning to the new regional structure.
- The IEEE Young Professionals Section has been reactivated, organizing several events.
- This year, we implemented a new account management criterion in alignment with IEEE Headquarters' requirements.
- The section assisted several members in advancing to Senior Member status.
- We were able to support Distinguished Lecturer (DL) visits requested by chapters.
- We published two newsletters, and I would like to extend my thanks to Mike Robinson for his continued support as the newsletter editor.
- We also published an article highlighting our activities in Region 10, which helped raise awareness of our work in the broader IEEE community.

- Our two student chapters, Griffith PES and UQ, earned first and second places for Best Student Chapters in Australia, based on their activities in 2023. I want to thank the chapter committees and counsellors for their outstanding contributions.
- The HKN Chapter (Mu Kappa Chapter) at the University of Queensland earned the 2024 Key Chapter Recognition, marking a significant achievement as the only HKN chapter in Australia.
- Both PES student branches (UQ and Griffith) received High-Performing Student Branch Chapter Program (HPSBCP) awards.
- The PES Chapter was a runner-up for the Frank Lambert Outstanding Chapter Award.
- The IEEE PES Member-Driven Initiative Committee funded the PES chapter's membership drive.
- Looking ahead to 2025, the section is committed to supporting two major international conferences: the Australian Microwave Symposium, chaired by Dr. Hugo Espinosa, and the Australian Power Engineering Conference, chaired by Prof. Tapan Saha.
- Organised an event with The Department of Industry, Science & Resources (DISR), in partnership with IEEE SA (Standards Association), to encourage members to involve in developing Australia's Critical Technology Standards.

I would like to express my sincere gratitude to all committee members for their dedication and collaboration. IEEE activities rely heavily on the support of volunteers, and I am immensely proud of our volunteers who have organized such a wide range of events for our members.

To recognize their hard work, each year the section awards Recognition of Service Awards and a Volunteer of the Year Award. I would like to thank Mike Robinson for his efforts in streamlining the awards process and for dedicating his time to organizing these important recognitions.

I wish all our members and their families a Merry Christmas and a Happy New Year. I look forward to the possibility of continuing to serve as Chair of the section, should I be re-elected.

In closing, I would like to leave you with a quote from Martin Luther King Jr.:

"Life's most persistent and urgent question is, 'What are you doing for others?'"
Enjoy the festive season!

Section Vice Chair

Rahul Sharma, Rahul.sharma@uq.edu.au
Section Vice Chair

In 2024, I had the privilege of serving as the Section Vice Chair for the second consecutive year. Having previously served as Secretary for four years and Vice Chair for two years, I have gained a comprehensive understanding of the section's operations. My primary contribution this year was to assist the Section Chair in managing Section activities. I thoroughly enjoyed contributing to the Section initiatives and collaborating with the Section Chair and Secretary to support the section's operations wherever needed.

A highlight of my responsibilities this year was organising the Section AGM and Dinner. This event holds great significance for the Section as it fosters networking among committee members, recognises their invaluable volunteer contributions, and engages IEEE Queensland with the broader electrical engineering community in Queensland. One of the most encouraging aspects of this year's activities was the continued proactive involvement of student members and branches. The Queensland Section takes pride in supporting student volunteers through various initiatives, including scholarships, facilitating attendance at conferences and workshops, and fostering their growth as future leaders of IEEE.

Throughout 2024, we continued to hold our monthly meetings in a hybrid format, with most members understandably attending online. Looking ahead, we aim to host events that encourage more in-person interactions to strengthen connections within our community. It has been a pleasure working with our dedicated volunteers. Finally, I extend my heartfelt gratitude to all IEEE volunteers and members for their unwavering support throughout 2024. Wishing everyone a Merry Christmas and a Happy New Year!

Section Secretary

Hugo Espinosa
h.espinosa@griffith.edu.au

I had the honour of serving as Section Secretary for the first time in 2024. This important role involves organising, conducting, and reporting on the monthly section committee meetings, managing the registration of new officers and the mailing list, and assisting the Chair with various tasks, including judging competitions such as the ANZCON 2024 Scholarships.

The monthly committee meetings provide a platform for the Executive Committee, Chapters, Student Branches, and Affinity Groups to share updates on overall section matters and discuss the organisation of activities.

In 2024, a total of 10 meetings were held (from February to November) in a hybrid format. In-person meetings took place in the Advanced Engineering Building 49-601 (Level 6) at The University of Queensland, Australia, while online meetings were hosted via Zoom. The majority of committee members attended the meetings online.

The meetings were generally well-attended, with an average attendance of 71% from the Executive Committee. The average attendance from the Chapters, Student Branches, and Affinity Groups was 36%, and I hope this percentage increases in 2025. These meetings offer a great opportunity to discuss activities and foster potential collaborations, while also building a sense of community.

I would like to express my sincere gratitude to Chandima Ekanayake, Section Chair, Rahul Sharma, Section Vice Chair, Richard Yan, Treasurer, and Mike Robinson, Newsletter Editor and Awards & Recognition Chair, for their invaluable support in this role. Their extensive experience and friendly approach made my contributions to the role more seamless, and I have learned a tremendous amount from them.

I would also like to thank all the volunteers for their support and contributions to the section, without whom the section would not be possible.

I wish you all a wonderful holiday and look forward to seeing you in 2025!

Section Treasurer

Richard Yan,
ruifeng@eecs.uq.edu.au

IEEE Queensland Section

Treasurer's Report:	November 24 AGM Update
Reporting Period	Jan 2024 - Nov 2024
Date prepared:	Monday, 4 November 2024
Treasurer:	Richard Yan

ANZ Brookside Shopping Centre (BSB 014-203)			Cheque Account 469430083
Date	**Item**		**Amount**
1/01/2024	Starting balance		$36,772.12
Income			
16/04/2024	PAYMENT FROM BENJAMIN TRAN		$ 349.24
19/04/2024	TRANSFER FROM ATO ATO674316489748001		$ 684.00
13/05/2024	PAYMENT FROM IEEE SA Section RADAR 2023 payback/profit		$ 25,000.00
17/05/2024	PAYMENT FROM IEEE SA Section Radar2023 payment #2		$ 8,358.81
5/07/2024	CREDIT INTEREST FROM 9110-03933		$ 1,002.74
11/07/2024	TRANSFER FROM ATO ATO674316489748001		$ 25.00
15/07/2024	INTL PAYMENT FROM THE INSTITUTE O REF 20 240000000009709 USD7802.90 Fee 8.00		$ 11,151.75
15/07/2024	CREDIT INTEREST FROM 9110-03659		$ 1,131.16
16/07/2024	PAYMENT FROM FEIFEI BAI		$ 50.00
17/07/2024	PAYMENT FROM CHANDIMA EKANAYAKE IEEE DINNER		$ 50.00
17/07/2024	PAYMENT FROM RUIFENG YAN Ruifeng Yan eDinner		$ 50.00
17/07/2024	PAYMENT FROM MR YUCHEN ZHANG Yuchen Zhang		$ 50.00
17/07/2024	PAYMENT FROM BAIE FENG		$ 25.00
17/07/2024	PAYMENT FROM TAOLUE SHEN		$ 25.00
17/07/2024	PAYMENT FROM GE ZHANG		$ 25.00
18/07/2024	PAYMENT FROM RAHUL SHARMA		$ 50.00
18/07/2024	TRANSFER FROM FB RICE PL MANUEL SCHMIDT EA		$ 50.00
19/07/2024	PAYMENT FROM ALEXANDER BUROVANOV EA Dinner July		$ 25.00
29/08/2024	INTL PAYMENT FROM THE INSTITUTE O REF 20 240000000003878 USD500.00 Fee 8.00		$ 706.39
19/09/2024	CREDIT INTEREST FROM 9147-58977		$ 438.70
18/10/2024	PAYMENT FROM IEEE AUSTRALIA COUNCIL AC SB 2nd Prize UQ-SB		$ 200.00
21/10/2024	PAYMENT FROM IEEE AUSTRALIA COUNCIL		$ 500.00
23/10/2024	TRANSFER FROM ATO ATO674316489748001		$ 313.00
		Income Subtotal	**$50,260.79**

Expenses

9/01/2024	ACCOUNT SERVICING FEE		-$	10.00
19/01/2024	ANZ INTERNET BANKING PAYMENT 228891 TO Robert Kennedy	IEEE short course	-$	83.98
19/01/2024	ANZ INTERNET BANKING PAYMENT 233827 TO Ahmed Amirul Arefin	IEEE PES travel award	-$	339.50
19/01/2024	ANZ INTERNET BANKING BPAY TAX OFFICE PAYMENT (228193)		-$	641.00
19/01/2024	ANZ INTERNET BANKING PAYMENT 228545 TO Association of Old Crows	CogEW Course to Old Crows	-$	5,714.20
9/02/2024	ACCOUNT SERVICING FEE		-$	10.00
8/03/2024	ACCOUNT SERVICING FEE		-$	10.00
25/03/2024	ANZ INTERNET BANKING PAYMENT 384814 TO Yunda Xu	Pre-approved half of the HKN member	-$	231.25
25/03/2024	ANZ INTERNET BANKING PAYMENT 384930 TO Linfeng Liu	HKN Net Zero Event	-$	1,160.29
8/04/2024	ANZ INTERNET BANKING PAYMENT 572955 TO Shijie Yao	UQ IEEE PES Student Branch AGM	-$	65.70
8/04/2024	ANZ INTERNET BANKING PAYMENT 572234 TO Linfeng Liu	Additional HKN Net Zero	-$	64.81
8/04/2024	ANZ INTERNET BANKING PAYMENT 572649 TO Shijie Yao	UQ Industry 4.0 Energy TestLab Visi	-$	152.95
9/04/2024	ACCOUNT SERVICING FEE		-$	10.00
9/05/2024	ACCOUNT SERVICING FEE		-$	10.00
23/05/2024	ANZ INTERNET BANKING PAYMENT 170767 TO Linfeng Liu	IEEE HKN Membership Fee	-$	238.43
7/06/2024	ACCOUNT SERVICING FEE		-$	10.00
11/06/2024	ANZ INTERNET BANKING PAYMENT 981403 TO Ning Ma	NingMA 2024 IEEE PESGM Travel Award	-$	2,000.00
14/06/2024	ANZ INTERNET BANKING BPAY ENGINEERS AUSTRALI (881887)		-$	1,500.00
24/06/2024	ANZ INTERNET BANKING PAYMENT 734438 TO Jiajie Feng	ANZCON 2024 Award	-$	1,000.00
3/07/2024	ANZ INTERNET BANKING PAYMENT 139425 TO Ashan Bandara	Silicon carbide electronics and sen	-$	90.05
3/07/2024	ANZ INTERNET BANKING PAYMENT 139088 TO Ashan Bandara	IEEE UQ HKN AGM and Induction Cerem	-$	130.00
3/07/2024	ANZ INTERNET BANKING PAYMENT 138815 TO Ashan Bandara	IEEE PES Day 2024	-$	180.70
9/07/2024	ACCOUNT SERVICING FEE		-$	10.00
9/07/2024	ANZ INTERNET BANKING PAYMENT 129938 TO Taolue Shen	2024 ANZSCON Congress	-$	1,000.00
26/07/2024	ANZ INTERNET BANKING PAYMENT 344297 TO Brisbane Conv Exhibition Centre	Invoice 95433	-$	2,473.00
9/08/2024	ACCOUNT SERVICING FEE		-$	10.00
9/09/2024	ACCOUNT SERVICING FEE		-$	10.00
2/10/2024	ANZ INTERNET BANKING PAYMENT 369457 TO Ashan Imantha Malala Hetti Banda	PES Student EMT seminar	-$	116.70
2/10/2024	ANZ INTERNET BANKING PAYMENT 369907 TO Taolue Shen	Industry Workshop Australian Energy	-$	1,266.83
9/10/2024	ACCOUNT SERVICING FEE		-$	10.00
11/10/2024	ANZ INTERNET BANKING PAYMENT 412532 TO Ashan Imantha Malala Hetti Banda	First Year Arduino Electronics Work	-$	292.50
11/10/2024	ANZ INTERNET BANKING PAYMENT 412718 TO Ashan Imantha Malala Hetti Banda	IEEE UQ PES SB membership Drive	-$	468.45
11/10/2024	ANZ INTERNET BANKING PAYMENT 412006 TO St Leos Catering	IEEE Day Membership Drive	-$	1,209.30
23/10/2024	ANZ INTERNET BANKING PAYMENT 777244 TO Yuchen Zhang	IEEE QUT SB membership drive	-$	104.50
28/10/2024	ANZ INTERNET BANKING PAYMENT 614329 TO Yuchen Zhang	Tutorial on Grid connection challen	-$	197.00
1/11/2024	ANZ INTERNET BANKING PAYMENT 500439 TO Brisbane Conv Exhibition Centre	Invoice Number 97559	-$	4,827.00
4/11/2024	ANZ INTERNET BANKING PAYMENT 535760 TO Alexander Burovanov 2024 IEEE HKN Student Leadership Conference		-$	2,000.00
4/11/2024	ANZ INTERNET BANKING PAYMENT 536159 TO Muhammad Naveed Naz AUPEC Travel Award 2024		-$	500.00

Expenses Subtotal **-$27,646.14**

Closing Balance 4 Nov 2024 **$59,386.77**

IEEE NextGen Banking **Account 100270**

Date	Item		Amount	
1/01/2024	Starting balance		USD	4,711.34
Income				
1/01/2024	Interest Calculation: 12/1/2023 - 12/31/2023 @ 3.9		USD	15.67
1/02/2024	Interest Calculation: 1/1/2024 - 1/31/2024 @ 4.04		USD	15.91
1/03/2024	Interest Calculation: 2/1/2024 - 2/28/2024 @ 4.04		USD	14.90
1/04/2024	Interest Calculation: 3/1/2024 - 3/31/2024 @ 4.05		USD	16.06
1/05/2024	Interest Calculation: 4/1/2024 - 4/30/2024 @ 4.04		USD	15.54
1/06/2024	Interest Calculation: 5/1/2024 - 5/31/2024 @4.10		USD	16.36
1/07/2024	Interest Calculation: 6/1/2024 - 6/30/2024 @ 4.13		USD	15.99
1/08/2024	Interest Calculation: 7/1/2024 - 7/31/2024 @ 4.14		USD	16.59
1/09/2024	Interest Calculation: 8/1/2024 - 8/31/2024 @ 4.07		USD	16.41
1/10/2024	Interest Calculation: 9/1/2024 - 9/30/2024 @ 3.90		USD	15.25
10/10/2024	IEEE PES Frank Lambert Outstanding Chapter Award		USD	500.00
		Income Subtotal USD	**USD**	**658.68**
Expenses				
		Expenses Subtotal USD	USD	-

Closing Balance **USD** **5,370.02**

Assumed USD-AUD exchange rate 1.52

Nett cash available **$67,549.20**

Nett worth (nett cash available + assets - liabilities)	**$142,549.20**

Assets: Term Deposits		**Value**
ANZ 014203-911003931		$25,000.00
ANZ 014203-911003659		$25,000.00
ANZ 014203-914758977		$25,000.00

Educational Activities

Report of Annual Education Activities CY2024– IEEE QLD Chapter

Chair: Rajesh Nighot

Activities:

The following education activities were held during CY2024 and this was jointly done with IEEE QLD PES and YP Chapters.

- **NOJA Power Factory Tour - 1 May 2024**

  Great opportunity for university students and young engineers to visit Australia's leading low- and medium-voltage manufacturer, NOJA Power.
  Learn and see how NOJA Power researches, develops, manufactures, and supplies low- and medium-voltage switchgear.
- **Seminar on the Application of EMT solutions to address modern grid challenges by Amal Mani -Manitoba Hydro International on 12 July 2024.**

  Inverter-Based Renewable (IBR) generators are becoming a major energy source for the modern grid, replacing coal generators. These generators use power electronics to interface with the grid, which has fundamentally different characteristics from traditional electro-mechanical synchronous generators. This shift presents new challenges in planning and operating the electric grid. The behavior of IBRs is primarily determined by their control systems, making it critical to understand their behavior for effective grid planning and operation. Traditional analysis methods are insufficient for studying IBRs, particularly under weak grid conditions, necessitating more advanced techniques. Electromagnetic transient (EMT) simulation tools like PSCAD are widely used to model IBRs and assess their impact on the grid. This presentation provides an overview of the challenges facing the modern grid and demonstrates the use of EMT simulation tools to study and address these challenges. The presentation also covers the fundamentals of electromagnetic transients.

Expense:

Nil

Publications:

- IEEE QLD Section Tour To Noja Power Switchgear Manufacturing Campus published in IEEE R10 Connect Newsletter, Volume 25, Issue 3, July 2024.

Professional Activities Committee

Annual Report 2024

Chair: Moid Sandhu

IEEE QLD Section Professional Activities Committee organised three events during this year.

Topic: Responsible AI Engineering: best practices, methods, and tools
Speaker: Dr. Qinghua Lu (from CSIRO)
Talk date: 23-MAY-2023, 03:00-04:00 pm AEST

Topic: Blockchain for Cyber Physical Systems
Speaker: Dr. Volkan Dedeoglu (from CSIRO)
Talk date: 24-JULY-2023, 03:00-04:00 pm AEST

Topic: Home Automation Systems empowering Smarter Communities in the race towards Sustainability.
Speaker: Sunil Abraham (from ABB)
Talk date: 29-AUG-2024, 03:00-04:00 pm AEST

Women in Engineering

Punam Pawar, Punam.pawar@uq.net.au
Committee: IEEE QLD Women in Engineering Affinity Group
Chair: Punam Pawar

It has been my pleasure to serve as Chair of the IEEE QLD Women in Engineering Group in 2024, my second year in this role. This year we organised two technical events for our members.

Event 1:

A distinguished lecturer webinar for the IEEE QLD WIE group members was held on 24th October 2024. We were fortunate to have Prof Mihaela Albu to deliver her webinar titled “Measurements for Emerging Power Grids”. The speaker was from the National University of Science and Technology Politehnica Bucharest. Prof Albu explained the need to upgrade the measurement systems in the power grid, especially with increasing renewable penetration. She also presented the workings of future measurement systems with a few examples from real-world power systems. This event was open to the whole IEEE QLD section.

Event 2:

The second event, “Physical and Computational Modelling of Smart Homes” by Prof Damla Turgut, was organised on 5th November 2024. This event was also organised through the WiE distinguished lecturer series. Our speaker for the event, Prof Turgut, was a Charles Millican Professor and Chair of Computer Science at the University of Central Florida (UCF). She presented the need for extensive modelling and simulation for all the components of homes, including the physical environment, the smart controllers, the behaviour of humans, and the external environment, including the smart grids and local energy market to which the systems connect. This event was also open to the whole IEEE QLD section.

I hope we will have many more successful events for our members in 2025.

Life Members Affinity Group

John Gough
john@atwell-gough.com

The purpose of the Life Members Affinity Group (LMAG) is to provide activities for those IEEE members who have attained any level of life membership. Life members come from all of the technical specializations in the IEEE family and a majority of them are retired.

This year the LMAG will have held only two events. The first event was a visit to the Queensland Telecommunications Museum earlier in the year. This event was widely appreciated by the attendees. The second event will be held on 5 December, featuring a talk about the Australian Acoustics Network which detects the presence of endangered and other creatures by their acoustic fingerprints.

It is a goal of the LMAG to hold at least four events in the coming year.

John Gough

LMAG Chair.

Aerospace and Electronic Systems Chapter

Robert Kennedy
kennedyrobotics@bigpond.com

Jason Williams
jlw@ieee.org

The Qld AESS chapter held two events in 2024. The first was a joint effort between IEEE AESS Boston Section Chapter (Region 1 Northeastern US), IEEE Melbourne Section, and IEEE AESS Queensland Chapter.

The in-person and online lecture covered nanophotonics and nanophotonic materials for highly integrated optics and optoelectronics. Professor Stefan Maier from the school of Physics and Astronomy at Monash University in Melbourne introduced Electromagnetic radiation at the nano level. The talk was very well received both in the lecture and with the online audience.

Figure 1: Online and In-person lecture on Nanophotonics

For the second event held in Queensland, the IEEE AESS Qld Chapter hosted AESS Distinguished Lecturer Professor Puneet Singla from the department of Aerospace Engineering at Pennsylvania State University in USA. The event was held in building 50 at the University of Queensland on Thursday 21 Nov 2024.

The topic covered by Professor Puneet Singla was Information and Resource Management (INFORM) for Accurate Tracking of Resident Space Objects.

Professor Singla introduced Space based Situational awareness (SSA) and the ability to detect, track and characterize passive and active space objects. The talk focused mainly on recent developments of new approaches for accurate tracking of RSOs.

The lecture was well received with a number of interesting discussions after the lecture.

Figure 2: Professor Puneet during the Lecture at UQ Campus

Control Systems Robotics and Automation

Benjamin Tam
b.tam@ieee.org

IEEE QLD Control Systems/Robotics and Automation Societies joint chapter concluded the year with a combination of in-person and online events. We co-hosted a total of 3 events.

Event 1: 23 August 2024
The first event was a talk by Professor Chris McCool from the University of Bonn titled “Robotic Perception in the Wild: progress and lessons deploying in agriculture”, which was co-hosted with CSIRO Robotics. The talk presented research in using perception systems to enable agricultural robots to better understand their environment through exploiting spatial and temporal information.

Figure 3: Prof. Chris McCool presenting at CSIRO Pullenvale, August 2024.

Event 2: 6 September 2024
The second event was an online talk by Associate Professor Laurianne Sitbon from the QUT Centre of Robotics and QUT Centre for Justice. The talk, titled “Co-designing AI for social robots: case studies in inclusion of people with intellectual disability” provided insight in the application of robotics in improving the lives of people with intellectual disability. This event was co-hosted with CSIRO Robotics.

Event 3: 18 November 2024
The third event was the first Australian Soft Robotics Symposium, which was co-sponsored by IEEE, and co-organised with the Australian Soft Robotics Society. This event was held at QUT Gardens Point. A total of 28 participants (including 13 IEEE members) spent the day sharing and discussing research within this emerging field. There were researchers and industry representatives from across Australia and overseas. There was also a fun workshop activity where teams were required to collaborate and design a soft gripper capable of grasping various objects using an assortment of everyday items provided.

Figure 4: Group photo from the first Australian Soft Robotics Symposium at QUT, November 2024.

Signal Processing and Communication Joint Chapter SP01/COM19/GRS29

The IEEE SP01/COM19/GRS29 Chapter had a dynamic year of technical meetings, showcasing cutting-edge research and fostering collaborative discussions across diverse domains. The meetings are typically attended by 6-8 attendees and are in a relatively casual setting.

Our technical sessions explored innovative computational techniques, including a deep dive into advancing neural network performance with higher FLOPS, exploring methods for optimizing multi-processing interfaces, and investigating advanced machine learning approaches like Monte Carlo Dropout. The chapter also delved into specialized applications such as small object detection using YOLOv8 and groundbreaking passive radar technologies for space surveillance.

Beyond technical discourse, we maintained our commitment to community building with our annual Christmas gathering, which provided a valuable opportunity for members to network and share insights in a more informal setting. These meetings not only highlighted the chapter's technical prowess but also underscored our ongoing commitment to pushing the boundaries of signal processing research and technology.

The table below lists the events that we held in 2024

1TJPC - Higher FLOPS for faster NNs	05 Mar 2024
1TJPC - Christmas gathering	03 Dec 2024
1TJPC - Fast MPI-enabled optimiser	02 Jul 2024
1TJPC - MC Dropout	01 Oct 2024
1TJPC - Passive Radar for Space Surveillance	03 Sep 2024
1TJPC - Small Object Detection with YOLOv8	07 May 2024

I look forward to the chapter’s activities in 2025.

Manuel Schmidt
Chapter Chair

Joint Chapter of Power and Energy Society and Dielectrics and Electrical Insulation Society

Dr Feifei Bai
f.bai@uq.edu.au

Committee:

Chair: Dr Feifei Bai

Vice-Chair: Dr Nadali Mahmoudi

Secretary: Mr Yu Su

Treasurer: Mr David Batterham

Liaison Officer for Professional Bodies: Prof Tapan Saha

Liaison Officer for Industry: Dr Nilesh Modi

Liaison Officer for CIGRE NGN: Mr Steve Oag

Representative of WiP: Dr Indira Alcaide-Godinez

Webmaster: Dr Ramesh Bonu

Award Summary:

Awards by the chapter:

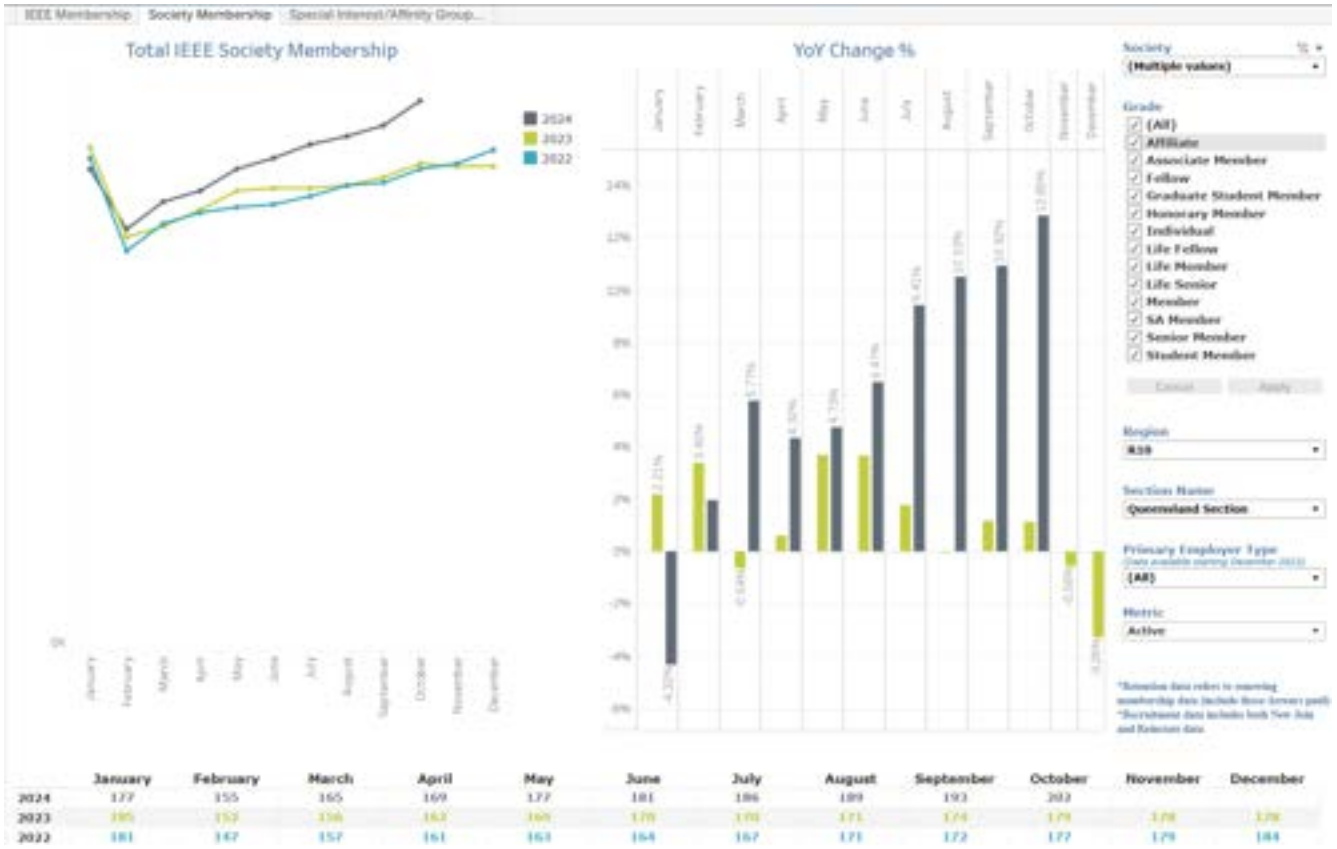
- 2023 IEEE PES High Performing Chapter award: US$790
- 2023 IEEE Power & Energy Society Frank Lambert Outstanding Chapter Award: US$500
- IEEE PES Membership Driven Initiatives funding: US$500

Awards by the PES student branches:

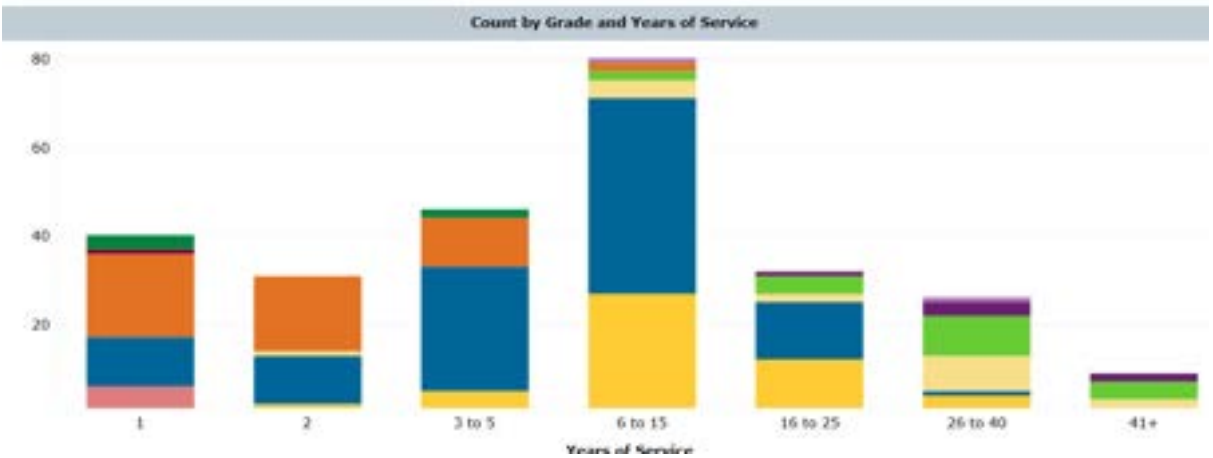
- University of Queensland (UQ): High Performing Student Branch Chapter Program 2024:US$500
- UQ: Second Most Active Student Chapter in Australia selected by the IEEE Australia Council: US$200
- Griffith university: High Performing Student Branch Chapter Program 2024:US$700
- Griffith university: First Most Active Student Chapter in Australia selected by the IEEE Australia Council: US$500

Membership Summary:

In October 2024, our chapter members reached to 202, which is around more than 20 members than the past few years.



	January	February	March	April	May	June	July	August	September	October	November	December
2024	177	155	165	169	177	181	186	189	193	202		
2023	185	152	156	163	169	170	170	171	174	179	178	178
2022	181	147	157	161	163	164	167	171	172	177	179	184



Activity Summary:

	Presentation Title	Speakers
Technical activities	Challenges and Innovation Opportunities for Electrifying Transportation	Prof Olivier Trescases from The University of Toronto
	Silicon carbide electronics and sensors for energy, environment and healthcare applications	Dr Hoang-Phuong Phan from The University of New South Wales
	RE integration, transmission system development and challenges in Market design in a federal structure of a developing power system	Mr Soonee Sushil Kumar from Grid-India
Membership Drive	Australian Energy Transition Towards 100% Renewable Energy	Eli Pack from Australian Energy Market Operator (AEMO), Frank Montiel from Powerlink Queensland, Dr. Chandana Samarasinghe from GE Vernova, Jaroslaw Krata, Phd and Nicholas Linwood from EPEC Group
Distinguished Lecturer Program	Integration of DERs and Electric Transportation in Distribution System	Dr Julio Romero Agüero from Quanta Technology, USA
Professional activities	ES Cornwall Memorial Scholarship Seminar: ▪ Maintaining Stability in an Electricity Network with a High Penetration of Distributed Energy and Inverter-Based Resources ▪ Power network digital flex and network planning	▪ Mr Mitchell Tap from Energy Queensland ▪ Ms Alice Fleetwood from Energy Queensland
Education activities	Power system protection training	Mr Tibor Congo from OMICRON
	PSCAD training session for the application of EMT solutions to address modern grid challenges	Mr Amalnath Mani from Manitoba Hydro International (MHI)
Site visit	Mynt Energy Tech for Hydrogen Generator and Energy Storage	
	AEMO control room site visit	
PES Day Celebration	Electric Mobility – Learning Effects of EV Drivers	Dr Kai Li Lim from The University of Queensland
	Insight to the IEEE PES Membership for Student and Young Professional	Chair of the IEEE PES Student Young Professionals Committee
Women in Power	1st Invited talk of Powerpioneers: Leading Lights	Dr Elli Ntakou from Eversource Energy, USA
	PSS/E Training for Renewable Integration	Dr Indira Alcaide-Godinez from AEMO
Membership Recognition	IEEE PES Chapter Outstanding Engineer Award	To be announced during AGM Dinner
	IEEE PES Chapter Outstanding Volunteer Award	

Upcoming events	4 Dec 2024, EV integration into the distribution networks (DLP)	Dr Julio Romero Agüero from Quanta Technology, USA
	7 Dec 2024, Celebration of Diversity, Equity and Inclusion with dish competition	

Queensland PES-DEIS Chapter has organised the following events during 2024.

1. Industry Workshop

MDI-24-065-R10: Australian Energy Transition Towards 100% Renewable Energy

Topic: Australian Energy Transition Towards 100% Renewable Energy

Host: IEEE Queensland PES/DEIS Chapter

Funding support: IEEE PES MDI funding US$500 and IEEE QLD Section

Collaborator: IEEE QLD Section, Engineers Australia, CIGRE NGN

Time: 2:30pm to 5:30pm 26 September 2024

Location: 78-343, St Lucia campus, The University of Queensland, Brisban, Australia

Mode: Hybrid, all the speakers will be in-person and encourage the participants from Brisbane to attend this event in person as well.

IEEE QLD PES /DEIS Chapter successfully hosted the Industry workshop "Australian Energy Transition Towards 100% Renewable Energy", attracting over 100 attendees. To support Australia's transition to 100% renewable energy, workshop discussions explored challenges and solutions ranging from the national power grid to the Queensland state network, as well as inverter manufacturers and renewable energy connection processes.

Special thanks to our distinguished speakers Eli Pack from Australian Energy Market Operator (AEMO), Frank Montiel from Powerlink Queensland, Dr. Chandana Samarasinghe from GE Vernova, Jaroslaw Krata, Phd and Nicholas Linwood from EPEC Group for their outstanding presentations. Many thanks for the MDI funding support from @IEEE Power & Energy Society Region 10 (Asia Pacific) and IEEE Queensland Section. Thanks the support from Engineers Australia and CIGRE NGN Australia for event promotion and communication. Thanks to our volunteers from IEEE Queensland PES/DEIS Chapter and the UQ IEEE Power and Energy Society - Student Branch.

The total cost is USD768 (1126AUD). USD$500 is supported by the MDI funding and the rest of the costs are supported by the IEEE Queensland Section. The MDI funding has been used for the catering.

After the post of this event photo on LinkedIn, we received over 1000 impressions within 2 days. The details schedule is shown in the attached flyer. The event photos are also shown below.

Event Photos


IEEE


IEEE
IEEE

2. Technical Seminar

Topic: Challenges and Innovation Opportunities for Electrifying the Transportation

Date: 29 January 2024

Venue: Hybrid, UQ St Lucia Campus

We have invited the speaker Prof Olivier Trescases from The University of Toronto. We circulated this event through IEEE eNotice, industry and academia contact email list, and chapter LinkedIn. The number of participants on the day was 35 including 30 IEEE members and 5 non-IEEE members. During the presentation, we received many interesting questions which are all addressed by the Prof Trescases. We have received excellent feedback from the audience. The event flyer and event photos are shown below.

3. Education Training

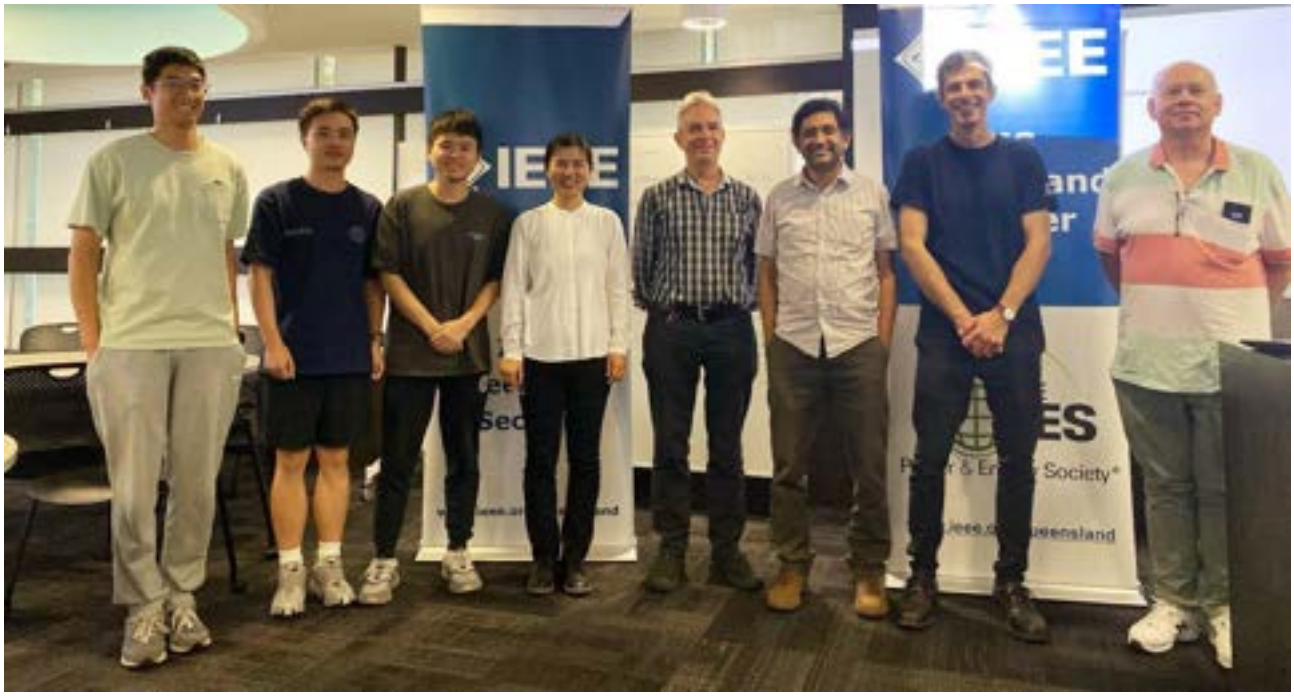
Topic: Education Activity for Power System Protection

Date: 14 March 2024

Venue: Hybrid, UQ St Lucia Campus

The invited speaker is Mr. Tibor Congo from Omicron Electronics, Australia. Our chapter collaborated with IEEE QLD Section and the UQ PES student branch hosted a hybrid education activity on power system protection education on 14 March 2024. We extend our thanks to Mr Tibor Congo for his excellent presentation on DER anti-islanding protection, which covers islanding detection guidelines, relay testing procedures, and valuable insights from testing experiences. We also thank all the online and in-person participants. The flyer and the event photos are shown below.


IEEE PES
Power & Energy Society
IEEE
Queensland Section
PES/IES Chapter
IEEE Power & Energy Society
Women in Power
Queensland Chapter
Topic
Education Activity for Power System Protection
Abstract
As electrical networks worldwide transition from centralized generation centres to an increasing reliance on distributed resources that contribute not only to demand supply but also play a crucial role in dedicated frequency support functions, the landscape of protection systems is adapting to align with these changes. Network companies are moving ahead with standards to implement anti-islanding protection, this workshop is dedicated to sharing information and knowledge regarding how these protection elements work, and then progressing the discussion with how these elements are tested in the field. Included in the presentation will be some protection system testing philosophies, relevant to all protection elements and best practices with regards to working on the essential infrastructure which is our electrical energy grid.
Mr. Tibor Congo
Omicron Electronics
Thursday, 14 March 2024
Time: 1pm - 4pm
Room 50 - C207
Hawken Engineering Building
St. Lucia Campus, The University of Queensland, QLD 4067
Registration Link for In-person Attendees
Registration Link for Online Attendees



4. Technical Seminar

Topic: Silicon carbide electronics and sensors for energy, environment and healthcare applications

Date: 20 March 2024

Venue: Hybrid, UQ St Lucia Campus

The invited speaker is Dr. Hoang-Phuong Phan from The University of New South Wales. The event details are shown in the event flyer and some event photos are shown below.

5. Industry site visit

Topic: Mynt Energy Tech Site Visit

Date: 24 May 2024

Venue: Mynt Energy Tech

The industrial site visit to the Mynt Energy Tech where industry engineers, researchers and students from various Queensland universities participated was successfully completed. Thanks to Steve McCormack for facilitating this. The representatives from Mynt Energy Tech demonstrated the portable purple pods and purple hydrogen pods that are solar, battery and hydrogen hybrid systems targeted at reducing energy costs and carbon emissions for off-grid applications.

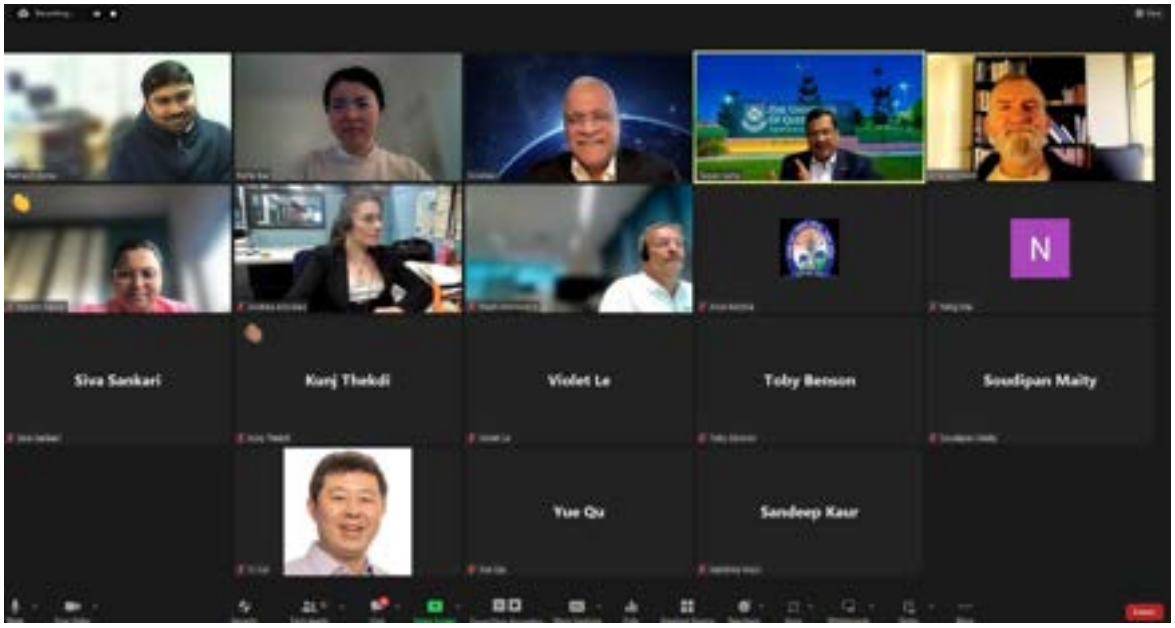
6. Industry site visit

Topic: RE integration, transmission system development and challenges in Market design in a federal structure of a developing power system

Date: 13 June 2024

Venue: Online

The invited speaker is Mr. Soonee Sushil Kumar, Former Advisor POSOCO, India. The details are shown in the flyer. The talk comprised of the experiences of Mr. Soonee on structure, market mechanisms, transmission operation, renewable energy integration challenges of the Indian Power Systems. Insightful discussions followed the talk.



7. Industry site visit

Topic: Mynt Energy Tech Site Visit

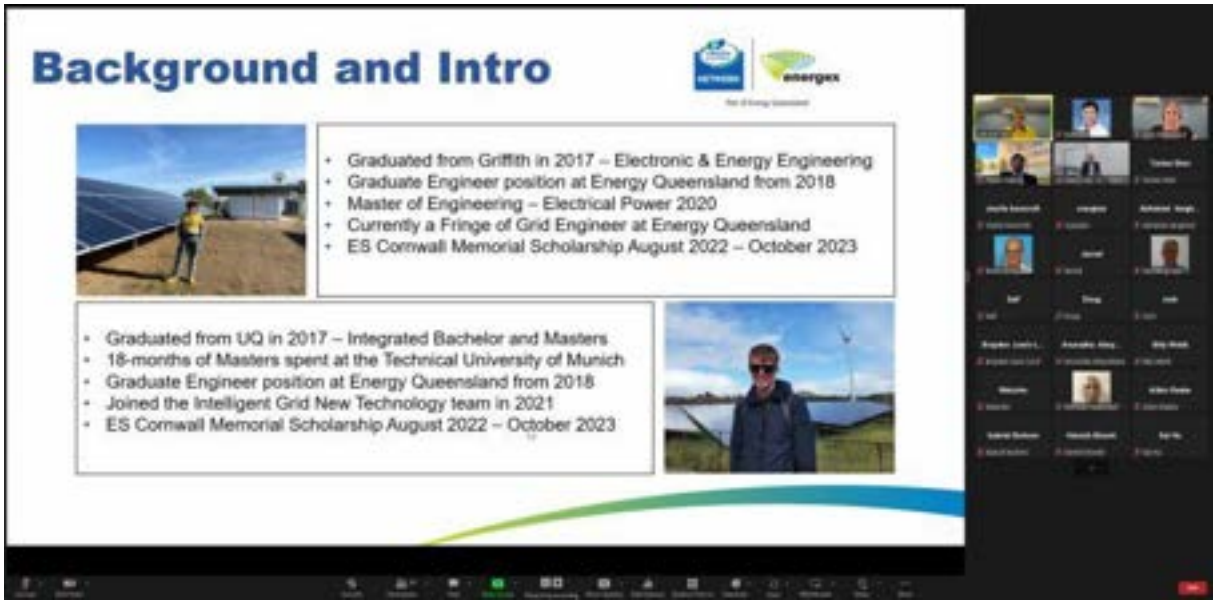
Date: 3 July 2024

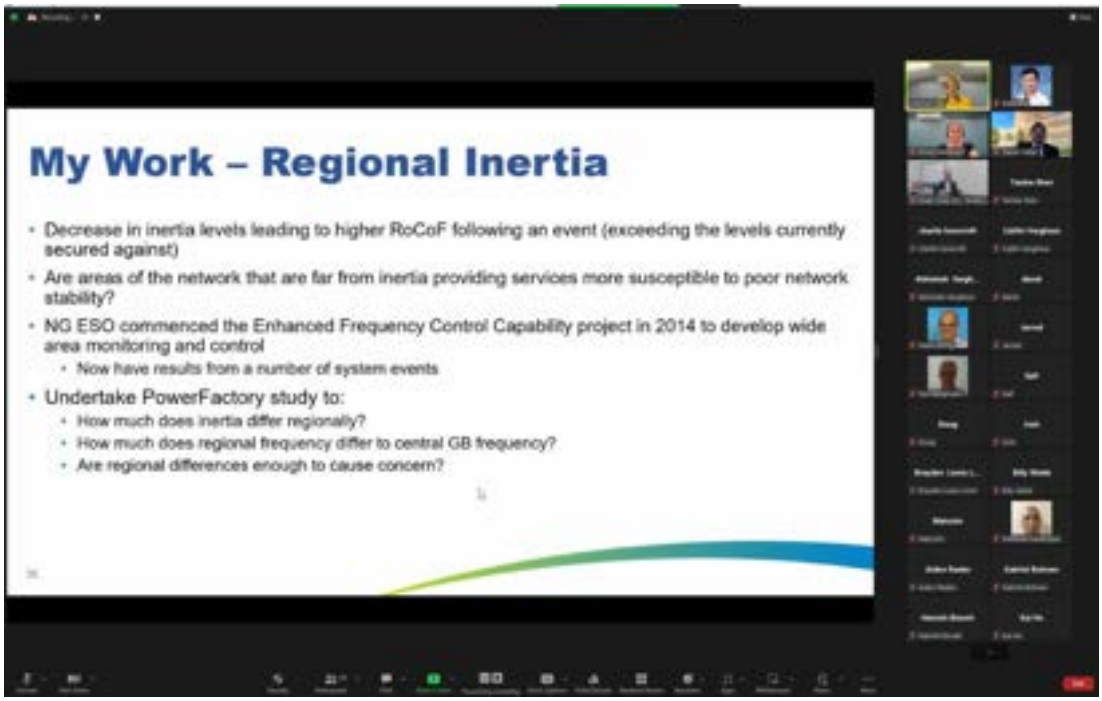
Venue: Online

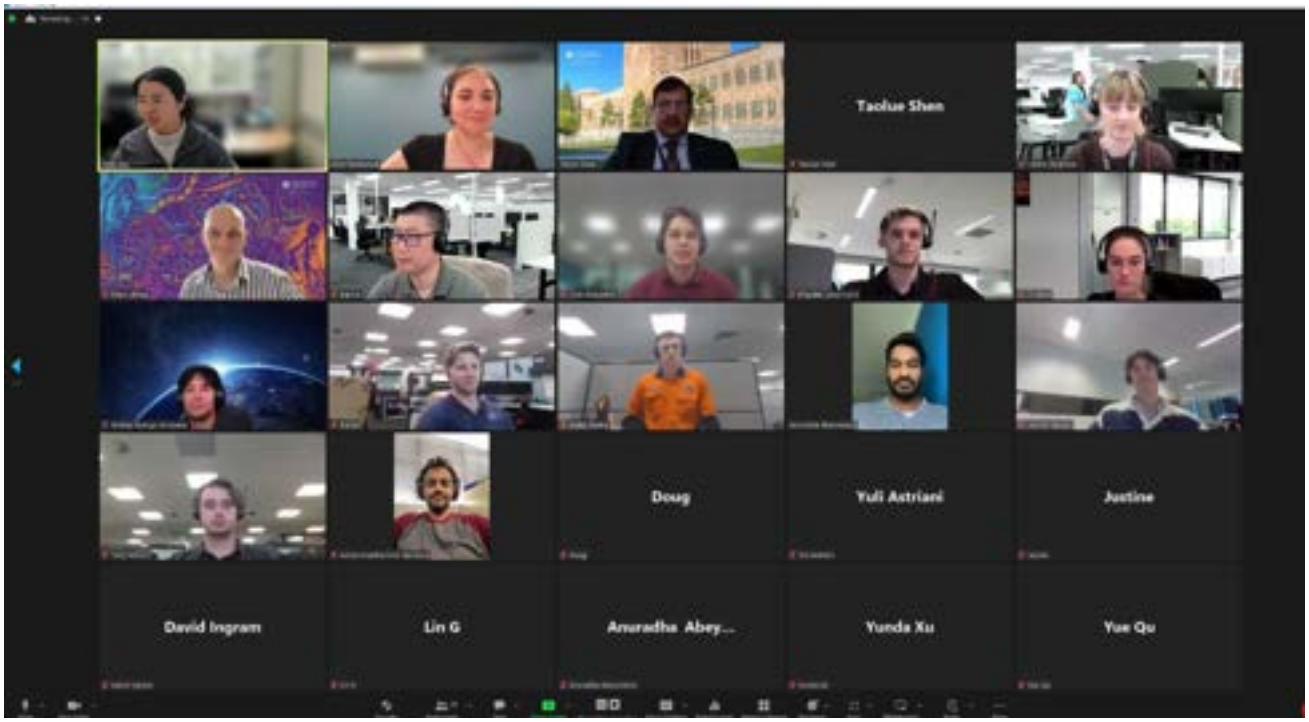
IEEE Queensland PES/DEIS Chapter and the Power, Energy, and Control (PEC) Discipline of the School of Electrical Engineering and Computer Science at the University of Queensland jointly hosted an ES Cornwall Memorial Scholarship Seminar. The recent ES Cornwall Scholars Alice Fleetwood and Mitchell Tap from Energy Queensland discussed their international work experiences made possible by the ES Cornwall Memorial Scholarship.

Mitchell's scholarship focused on "Maintaining Stability in an Electricity Network with a High Penetration of Distributed Energy and Inverter-Based Resources." From his time at KEMA Labs, he discussed the learnings and shared the insights from his role in the Product Operability team at National Grid ESO where his work related to inertia, stability markets and grid-forming inverters connected to the national grid. Alice undertook placements with TenneT TSO in the Netherlands and SP Energy Networks in the UK as part of her scholarship program. Alice worked on feasibility projects for satellite monitoring and an energy market data analysis platform. At SP Energy

Networks, Alice was part of the Asset Management & Investment team within the Network Planning & Development department and undertook a 3D digital network performance model proof-of-concept project.







8. Education activity

Topic: Application of EMT solutions to address modern grid challenges

Date: 12 July 2024

Venue: Hybrid at UQ St Lucia campus

The invited speaker is Mr Amalnath Mani P. Eng IntPE(Canada) from Manitoba Hydro International, Canada, for an excellent presentation of the PSCAD for renewable energy system modelling and stability analysis. We have attracted 65 attendees for this hybrid event.

9. Women in Power

Topic: 1st Invited talk of Powerpioneers: Leading Lights

Date: 13 August 2024

Venue: Online

This event aims to spotlight industry leaders and pioneers in the power and energy sector. Our inaugural talk will feature a distinguished speaker, Elli Ntakou and Harivardhagini Subhadra, who shared insights into the latest advancements and innovations shaping the future of our field with the topic: Navigating the US power and energy industry as Woman In Power: A technical Journey from academia to the utilities. This webinar series is a unique opportunity for professionals, academics, and enthusiasts to connect, learn, and be inspired.

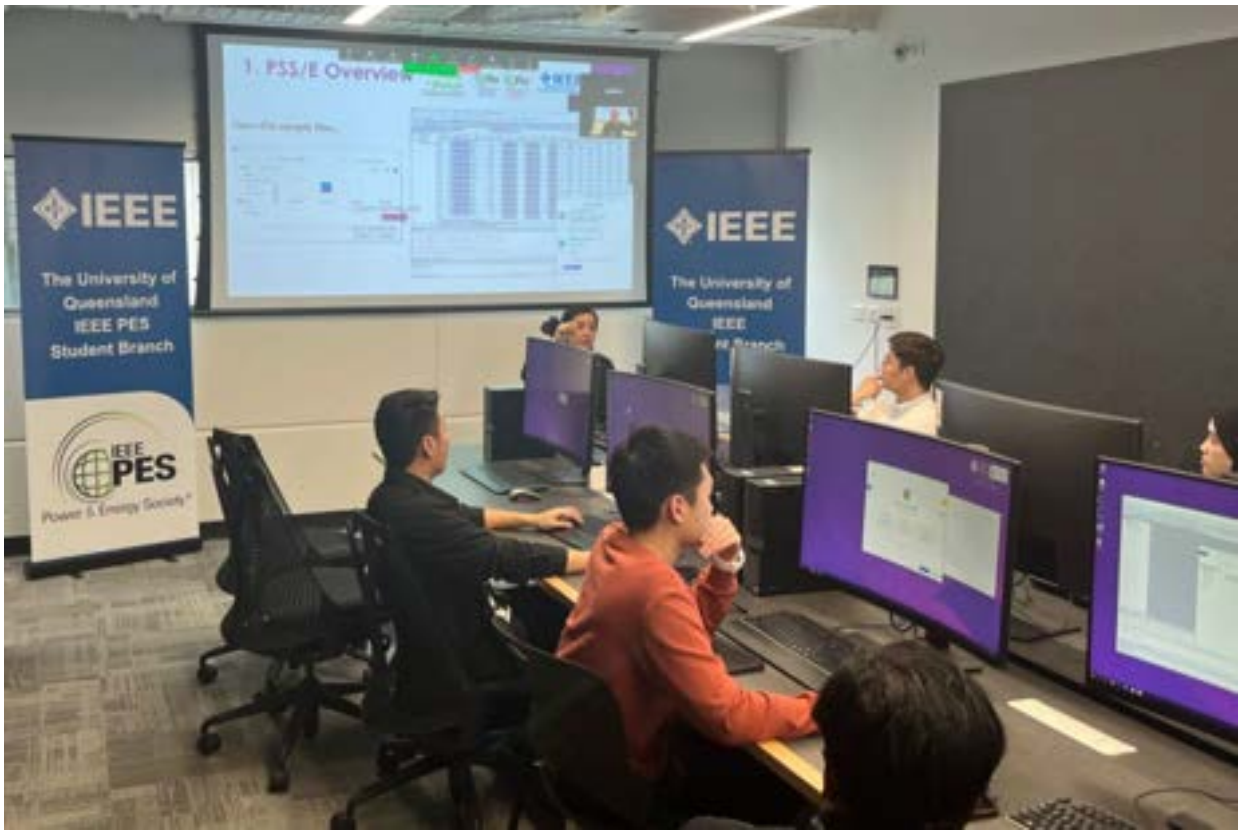
10. Women in Power

Topic: PSS/E Training for Renewable Integration

Date: 12 August 2024

Venue: UQ St Lucia campus and Griffith University Gold coast campus

This event is collaborated with our two PES student branches and UQ IEEE Student Branch for a free training session on PSS/E software, led by Dr. Indira from AEMO. The session covered the fundamentals of integrating IBR-based renewable generator models with dynamics. Power System Simulation for Engineering (PSS/E) is a comprehensive software tool for analysing and simulating power systems, crucial for both academic research and industrial applications.



10. 2024 IEEE PES Day and Membership Drive

Topic: Powering a Climate Safer Future

Date: 24 April 2024.

Our chapter has successfully organized the IEEE PES Day celebration event in collaboration with the IEEE PES UQ Student chapter and GU IEEE PES Student Branch as a Hybrid Event

on 24th April 2024. Prof. Tapan Saha introduced us to IEEE PES history during the event. Then, we hosted a technical seminar on Electric Mobility – Learning Effects of EV Drivers by Dr Kai Li Lim and a membership-driven session by Mr Anand Shah. After the workshops, we hosted a BBQ session. We want to extend our thanks to Dr Kai Li Lim for sharing his research insights about EV driving and charging behaviors with big data analytics applications, and greatly thanks to Mr Anand Shah for giving us valuable information about IEEE PES chapters and programs across different regions, and encouraging our attendees to become an IEEE PES member. The detailed activities are shown in the following flyer and photo.

11. Distinguished Lecturer

Topic: Integration of DERs and Electric Transportation in Distribution System

Date: 9 October 2024

Venue: Hybrid event, in-person at Energy Queensland

The IEEE Queensland PES/DEIS Chapter, in collaboration with the UQ IEEE Power and Energy Society - Student Branch and Energex & Ergon Energy, had the pleasure of hosting IEEE PES Distinguished Lecturer Dr Julio Romero Agüero from Quanta Technology. We greatly appreciate Julio's insightful and comprehensive presentation. Special thanks to Dr.

Daniel Eghbal from Energex & Ergon Energy for his strong support and warm hospitality. We also extend our thanks for the visit of Dr Julio Romero Agüero to our Queensland chapter, along with three other PES chapters in Christchurch (New Zealand), Melbourne, and Townsville (Australia).

11. IEEE PES Region 10 Chapter Chair Meeting and Student Branch Chair Meeting

The 2024 IEEE PES Chair training meeting was hosted in November at Bangalore, India. We have one student volunteer Mr Anuradha Abeysekara who has been selected to attend this meeting supported by IEEE PES. This experience provided valuable insights, expanded our network, and introduced innovative ideas to enhance our chapter.

12. 2023 Conference Travel Award

5 students have received the travel award as IEEE PES Graduate Student Member with an accepted paper to be presented during the AGM. The PhD student Ms Ning Ma from The University of Queensland received the 2024 IEEE PES General Meeting travel award with AU$2,000. Four PhD students from the University of Queensland have received 2024 IEEE PES Australasian Universities Power Engineering Conference (AUPEC) travel award with AU$ 500 for each including Ms Yue Qu, Mr Anuradha Abeysekara, Mr Ashan Imantha Malala Hetti Bandara, and Mr Muhammad Naveed Naz.

13. IEEE PES Queensland Chapter 2023 Outstanding Engineer Award and IEEE PES Queensland Chapter 2023 Outstanding Volunteer Award

IEEE Queensland PES/DEIS Chapter called for nominations from the Chapter Members for these 2023 awards. One nomination was received for the IEEE PES Queensland Chapter 2023 Outstanding Engineer Award and one nomination was received for the IEEE PES Queensland Chapter 2023 Outstanding Volunteer Award. Their names will be announced during the AGM dinner.

14. 2023 IEEE PES Frank Lambert Outstanding Chapter Award

Our chapter received 2023 IEEE Power & Energy Society Frank Lambert Outstanding Chapter Award with US$500 for the Medium Chapter Category (101-200 Members).

15. 2023 IEEE PES High Performing Chapter Program (HPCP) Award

IEEE Queensland PES/DEIS Chapter received the 2023 IEEE PES High Performing Chapter award of US$790. This award is to recognize active and high-performing chapters, the PES reviews each opted-in annual report and awards HPCP funding based on the level of chapter activity. Each PES Chapter that meets the defined performance requirements will be eligible to receive funding. The HPCP funding will be awarded yearly with a maximum of US$1000 and a minimum of US$200. These funds are to be used to support the cost of operation of its chapter. We're proud to announce that our chapter has achieved the eighth position in Region 10 (Asia-Pacific Region) and secured the top spot in Australia. Moving forward, our chapter will remain dedicated to organizing more impactful activities aimed at maximizing benefits for our members.

16. Membership Driven Initiatives (MDI) funding

IEEE Queensland PES/DEIS Chapter applied for and received the IEEE PES Membership Driven Initiatives funding of US$500.

17. Upcoming events

- 4 Dec 2024, EV integration into the distribution networks

7 Dec 2024, Celebration of Diversity, Equity and Inclusion with dish competition.

Microwave Theory & Techniques/Antennas & Propagation Societies

Hugo Espinosa
h.espinosa@griffith.edu.au

Committee
Chair: Dr Hugo Espinosa (Griffith University)
Vice-Chair: Dr Akbar Naqvi (The University of Queensland)
Secretary: Dr Kamel Sultan (The University of Queensland)
Treasurer: Dr Lu Zhang (The University of Queensland)

Welcome to the Microwave Theory and Techniques/Antennas and Propagation (MTT/APS) Chapter. Since the beginning of 2024, we have hosted and co-hosted several technical seminars, both online and in person, featuring experts from the MTT/APS communities. These seminars were delivered by distinguished professionals from industry, academia, and the Distinguished Lecturer program.

The online format of some seminars facilitated collaboration with other Australian chapters, enabling the host chapter to organise the events while other chapters supported them by promoting within their networks and providing assistance as needed. These collaborations have significantly increased attendance, participation, and engagement.

We extend our gratitude to the following Chapter Chairs and their teams for their invaluable support in co-hosting our events and inviting Queensland to co-host theirs: Yang Yang (NSW), Fatemeh Babaeian (Victoria), Shengjian Jammy Chen (SA), and Tao Huang (Northern Australia).

In total, ten events were organised. The list of presentations is as follows:

- Prof. Shilong Pan (Nanjing University of Aeronautics and Astronautics, China)
  "Microwave Photonic Radars: What can Photonics bring to Radars?"
  Online, April 8, 2024 (https://events.vtools.ieee.org/m/413883)
- Mr. David Nicolas (Telstra) and Martin Firus (Ericsson)
  "Ericsson and Telstra World-First High Speed Capacity Link to King Island"
  Online, April 18, 2024 (https://events.vtools.ieee.org/m/415975)
- Prof. Mohamed El-Hadidy (RheinMain University of Applied Science, Germany)
  "Chipless RFID Systems Modeling, Protocols and Detection"
  Online, June 14, 2024 (https://events.vtools.ieee.org/m/421799)
- Dr Nathan Hu (Ascan Technologies)
  "Sustainable Requirements from Telecommunication Industry and its Solution with High Efficiency Antennas"
  In-person, July 2, 2024 (https://events.vtools.ieee.org/m/424984)
- A/Prof. Jasmin Grosinger (Graz University of Technology, Austria)
  "RF Design for Ultra-Low-Power Wireless Communication Systems"
  In-person, August 8, 2024 (https://events.vtools.ieee.org/m/429602)
- Prof. Raafat Mansour (University of Waterloo, Canada)

"Applications of Phase Change Material Technology in Tunable Filters and in Other Reconfigurable Microwave and Millimeter-Wave Devices"
Online, August 20, 2024 (https://events.vtools.ieee.org/m/430062)

1. Dr. Xianzhong Tian (National University of Singapore, Singapore)
   "Non-Contact Radar Sensing of Wrist Pulse Wave with Enhanced Accuracy and Flexibility"
   In person, September 9, 2024 (https://events.vtools.ieee.org/m/433008)
2. Prof. Withawat Withayachumnankul (University of Adelaide, Australia)
   "E-Band Multibeam Transmitarrays for Unmanned Aerial Vehicle Aided Communications"
   In person, September 19, 2024 (https://events.vtools.ieee.org/m/434440)
3. Dr. Can Ding (University of Technology Sydney, Australia)
   "Managing Interference in Antenna Collocation: Innovative Strategies for Enhanced Communication Performance"
   In-person & Online, September 30, 2024 (https://events.vtools.ieee.org/m/436286)

In 2023, most presentations were conducted online, with only one in-person session delivered by a Distinguished Lecturer from MTT. This year, we had the pleasure of hosting five in-person seminars, including one presented by a Distinguished Lecturer from MTT and another by an industry expert.

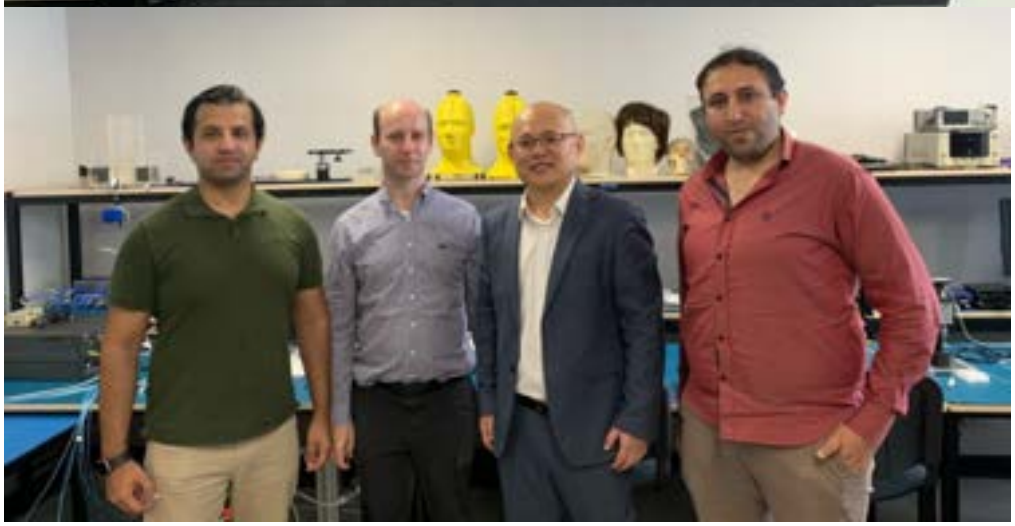
While online webinars enable broader audience reach, in-person seminars offer unique advantages. They provide participants with the opportunity to engage directly with presenters through face-to-face discussions, fostering a deeper understanding of the material. Additionally, these events create a dynamic environment for networking, where attendees can connect with peers, exchange ideas, and build professional relationships. Such interactions often form the foundation for future collaborations, sparking innovative projects and partnerships within the field.

The in-person presentations were hosted at the University of Queensland, St Lucia, Australia. Below are some photos from these events:

- Dr Nathan Hu (Ascan Technologies)
  "Sustainable Requirements from Telecommunication Industry and its Solution with High Efficiency Antennas"

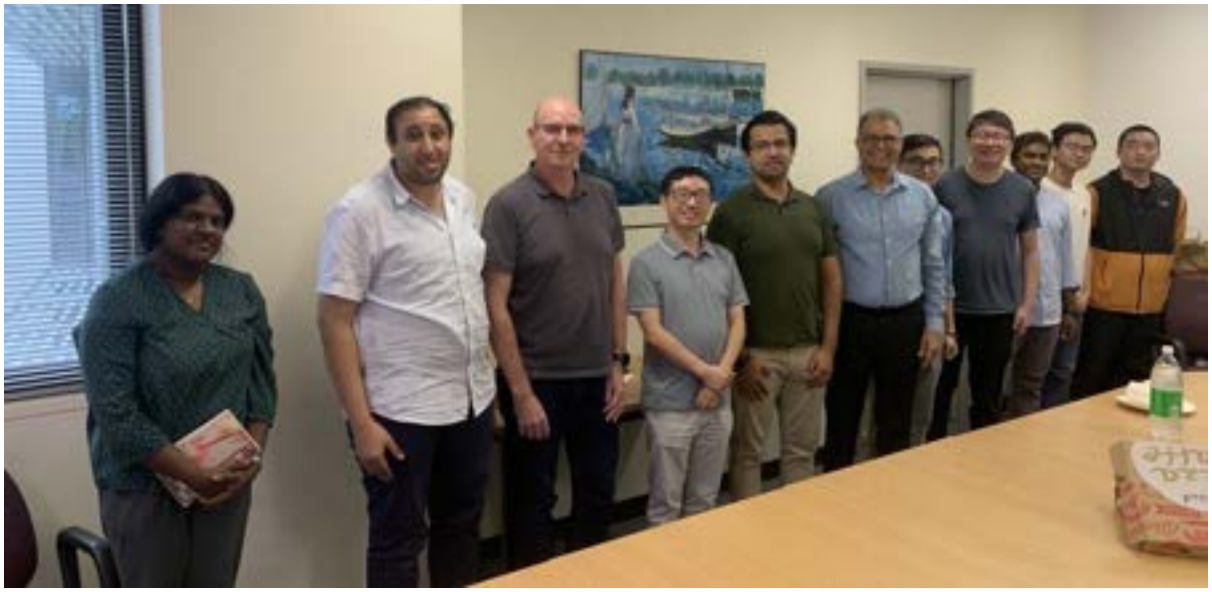
- A/Prof. Jasmin Grosinger (Graz University of Technology, Austria)
  MTT Distinguished Lecturer
  "RF Design for Ultra-Low-Power Wireless Communication Systems"

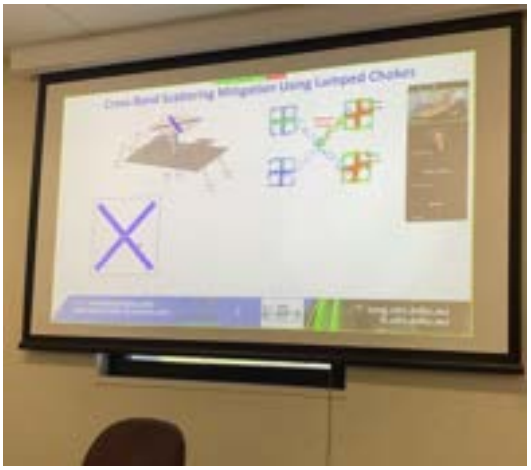
- Dr. Xianzhong Tian (National University of Singapore, Singapore)
  "Non-Contact Radar Sensing of Wrist Pulse Wave with Enhanced Accuracy and Flexibility"



- Prof. Withawat Withayachumnankul (University of Adelaide, Australia)
  "E-Band Multibeam Transmitarrays for Unmanned Aerial Vehicle Aided Communications"

- Dr. Can Ding (University of Technology Sydney, Australia)
  "Managing Interference in Antenna Collocation: Innovative Strategies for Enhanced Communication Performance"





The presentation delivered by Dr Can Ding was supported by the Young Professional (YP) Ambassador Program from the Antennas and Propagation Society (APS). IEEE YP is an international community, whose members are interested in elevating their professional image, expanding their global network, connecting with peers locally, and giving back to their community. More information about the program can be found here: https://ieeeaps.org/committees/yp.

As the year comes to an end, we would like to extend our heartfelt thanks to the QLD Section for their invaluable support throughout the year. We look forward to organising more insightful and engaging presentations in the near future.

I would also like to express my sincere gratitude to Dr. Akbar Naqvi, Vice Chair, Dr. Kamel Sultan, Secretary, and Dr. Lu Zhang, Treasurer, for their outstanding contributions. Their hard work in managing local arrangements for the in-person events at The University of Queensland and their unwavering dedication to the Chapter have been instrumental to our success.

University of Queensland IEEE Student Branch

Chair: Ge Zhang (STB06821 - University of Queensland)

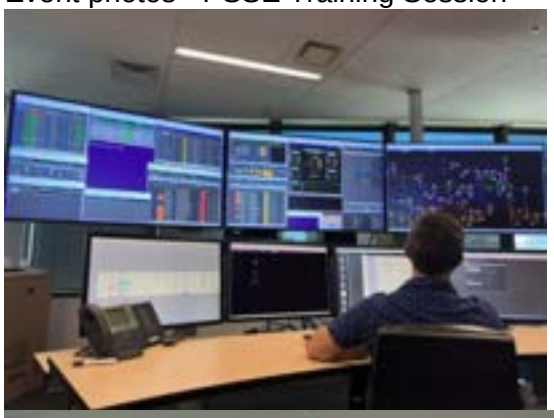
Vice Chair: Ning Ma; Secretary: Jiajie Feng; Treasurer: Shijie Yao

Under the dedicated collaboration of our committee members and the invaluable guidance of A/P. Richard Yan and Dr. Chandima, the UQ IEEE Student Branch (UQ IEEE SBC) has achieved significant growth and development over the past year. Throughout this journey, we have continuously sought to bring the benefits of the IEEE community to a wider audience within the University of Queensland. The support and encouragement we have received from our advisors and the entire IEEE community have been instrumental in enabling us to reach our objectives. On behalf of the entire UQ IEEE SBC committee, I extend our heartfelt thanks to everyone who has played a role in supporting our initiatives and helping us to thrive as a collaborative and impactful student branch.

This year, UQ IEEE SBC hosted a wide range of events that catered to various interests, from professional development to social engagement. One of the major highlights was our strengthened partnerships with fellow IEEE-affiliated organizations across Queensland. We were able to build and nurture these relationships through mutual participation in events, sharing resources, and exchanging ideas. Our collaborations with UQ IEEE PES SBC, IEEE KHN, IEEE WIP QLD, and GU IEEE PES SBC not only enhanced our event offerings but also enriched the experiences of our members by exposing them to a broader spectrum of perspectives and expertise. By combining our efforts, we expanded our reach and established a collaborative network that we hope will continue to grow in the coming years, ensuring that IEEE SBC at UQ remains both vibrant and impactful.

In our efforts to ensure the sustainable development and growth of our community, we organized two successful membership drives that attracted many new students. These events included a range of engaging activities that were designed to appeal to students, combining academic elements with social events. BBQ gatherings, academic presentations, and networking opportunities created an inviting environment, allowing students to learn more about the IEEE community in a casual and enjoyable setting. These initiatives greatly increased awareness of UQ IEEE SBC among the students and resulted in an increase in our membership, ensuring a strong foundation for the branch's future activities and member engagement.

Event photos - PSSE Training Session



Event photos – AEMO Control Room visit

To extend the community benefits to our undergraduate and master students, this year we introduced the UQ High Performance Student Talk Series. This new series was created to identify top-performing students and offer them a platform to share their strategies for success in academics, study habits, and course engagement.

Event photos – Joint membership drives with UQ IEEE PES SBC and HKN

The series met with enthusiastic participation, as students shared insights that ranged from effective study techniques to time management skills. These talks were designed to provide accessible and realistic advice to peers who seek to improve their own academic performance. We utilized our newly launched LinkedIn platform to publish highlights from these interviews, allowing both current and future students to benefit from the wisdom and experience of their peers. The feedback we received was overwhelmingly positive, confirming the value and relevance of this initiative.

To foster greater engagement and to empower our undergraduate and master's students, we introduced a new initiative: the creation of a sub-committee specifically for these students. This marks a first in our branch's history and is aimed at integrating more student voices into the daily operations and strategic planning of UQ IEEE SBC. The response was extremely positive, with students expressing a keen interest in contributing their perspectives and ideas. This sub-committee initiative not only provides valuable leadership opportunities for younger students but also ensures that our branch continues to be responsive and relevant to the needs and aspirations of its members.

Event photos – UQ High Performance Student Talk Series

Event photos – IEEE Day Celebration

We are looking forward to officially launching and operating this sub-committee in 2025, as it represents an exciting new chapter in our commitment to inclusivity, growth, and innovation within the IEEE community at UQ.

Griffith University IEEE PES Student Branch

Committee

Chair: Hamza Mubarak
Vice Chair: Nafis Ahmed Chowdhury
Secretary: Muhammad Ajmal khan
Treasurer:
Web master: Adam Barbosa
Advisor: Dr. Feifei Bai
Student counsellor: Dr. Hugo Espinosa

The Griffith University IEEE PES Student Branch, as a newly established member of the IEEE Queensland Section, has had a highly successful and milestone year. In just 18 months, we have fostered robust partnerships with several key organizations within the IEEE Queensland Section, co-organizing both a seminar and a PSS/E training event. Furthermore, we independently hosted a series of GU IEEE PES Talks, which garnered positive recognition and were well-received by a wide range of students.

- On 26th January 2024, we, in collaboration with the UQ IEEE PES Student Branch, organized an online event tailored for our Student and Graduate Student Members from Australia and New Zealand. The session was designed to maximize the potential of Student Branch Chapters in these regions, focusing on essential volunteering tools and strategies to secure funding opportunities. Key topics included IEEE vTools Event and Officer Reporting, an overview of IEEE PES HPSBCP 2024, new rules and eligibility for additional funding up to 1000 USD, the role of membership retention and growth in the funding process, and tips for improving application quality and report presentation. Yue Qu provided a deep insight into IEEE vTools Event Reporting and Officer Reporting, while Ge Zhang discussed the IEEE PES HPSBCP funding opportunities.

- On April 24, 2024, we co-organized an IEEE PES Day celebration with the UQ IEEE PES Student Branch Chapter. The event featured a technical seminar on EV mobility innovation presented by Dr. Kai Li Lim, followed by a membership drive session for IEEE PES Student and Young Professionals led by Anand Shah. The celebration concluded with a BBQ at Sir James Foots at the University of Queensland. It was a fantastic opportunity to learn about advanced EV technology, discover the benefits of PES memberships, connect with peers, and celebrate the remarkable achievements of IEEE PES. The event provided a great opportunity for celebration and networking!

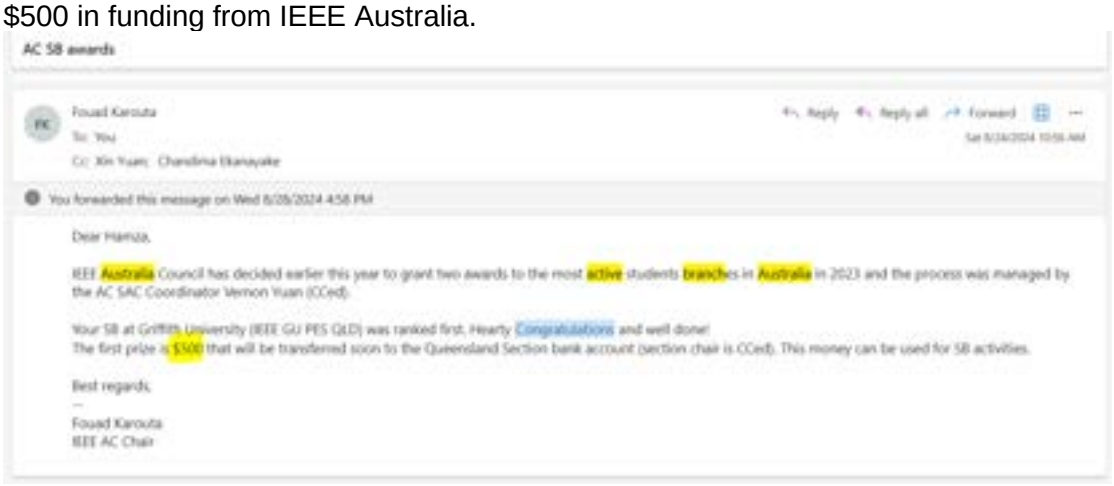
- On May 24, the GU IEEE PES co-organized an Educational Activity-Industry Site Visit in collaboration with the IEEE QLD Section PES/DEIS and UQ IEEE PES. The site visit provided an opportunity to learn about hydrogen fuel generators, battery energy storage systems, and hybrid microgrid systems at Mynt Energy Tech. The event, which brought together industry engineers, researchers, and students from various Queensland universities, was successfully completed. Special thanks to Steve McCormack for facilitating this visit. Representatives from Mynt Energy Tech demonstrated their innovative portable purple pods and purple hydrogen pods—solar, battery, and hydrogen hybrid systems aimed at reducing energy costs and carbon emissions for off-grid applications.

- On June 6, We are pleased to announce that we successfully conducted our second election, which took place in an atmosphere filled with enthusiasm and a shared passion for power and energy. During this pivotal meeting, our society took a significant step forward by electing a dedicated and talented executive committee. It was an honor to introduce our newly elected leadership team, who committed to guiding our society toward new achievements: 👨‍💼 Chairperson: Hamza Mubarak 👨‍💼 Vice Chairperson: Nafis Ahmed Chowdhury 📝 Secretary: Muhammad Ajmal 📣 Media Advisor: Adam Barbosa. We extend our sincere gratitude to our advisor, Dr. Feifei Bai, and our counselor, Dr. Hugo G. Espinosa, for their invaluable support.

- On 12 August 2024, we co-organized a PSS/E training event with Women in Power, UQ IEEE Student Branch, UQ IEEE PES Student Branch. The event took place simultaneously at GU Gold Coast Campus and UQ St Lucia Campus through a hybrid format. During this training, Dr. Indira Alcaide Godinez, as the keynote speaker, introduced the use of PSS/E and explained how to calculate the power flow for beginners in PSS/E in a lively and interesting manner. Many students found this training very practical and expressed their anticipation for the next intermediate training.

- On 15 August 2024, we successfully held our third independently organized event - Griffith University IEEE PES Talk 3. This event was held online. In the seminar segment, we invited Dr. Alamgir. In this GU IEEE PES talk, Dr. Alamgir showcased Australia's first hydrogen microgrid lab, highlighting its role in maintaining microgrid reliability. He also discussed how insights gained from this laboratory-based system could be applied to practical scenarios, with a focus on the implementation of Australia's first hydrogen-renewable power system at the Sir Samuel Griffith Centre and the development of a new hydrogen microgrid in Hobart. Additionally, Dr. Alamgir addressed the practical challenges of developing hydrogen microgrids, exploring key issues related to their implementation and integration into real-world energy systems.

- We are pleased to announce that the IEEE Australia Council has recognized the GU IEEE PES Student Branch as the most active student branch in Australia for 2023, ranking it first and awarding $500 in funding from IEEE Australia.



AC SB awards

Fouad Karouta
To: You
Cc: Xin Yuan; Chandima Ekanayake

You forwarded this message on Wed 8/28/2024 4:58 PM

Dear Hamza,

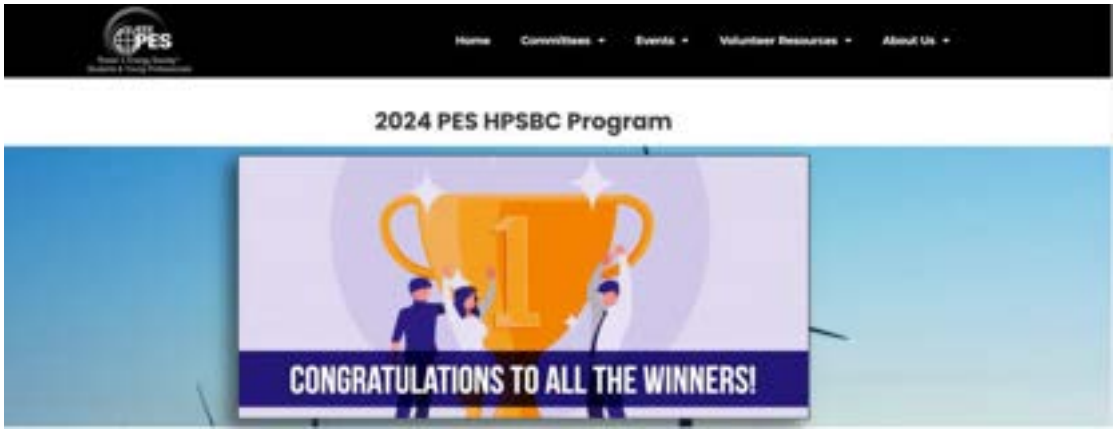
IEEE Australia Council has decided earlier this year to grant two awards to the most active students branches in Australia in 2023 and the process was managed by the AC SAC Coordinator Vernon Yuan (CCed).

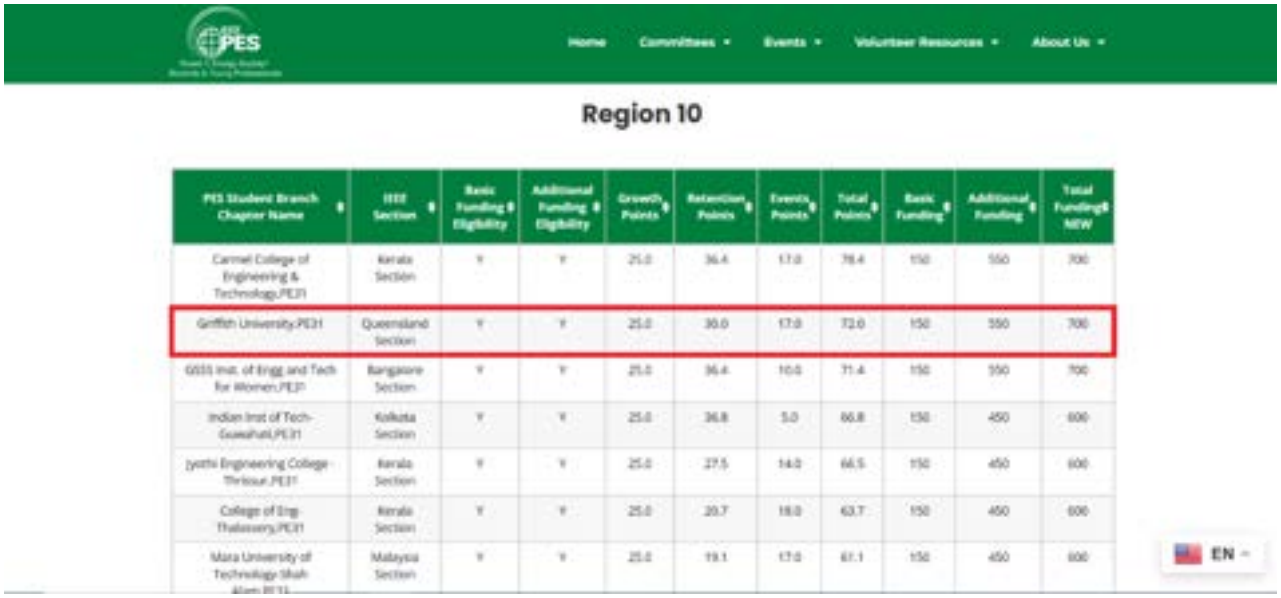
Your SB at Griffith University (IEEE GU PES QLD) was ranked first. Hearty Congratulations and well done!
The first prize is $500 that will be transferred soon to the Queensland Section bank account (section chair is CCed). This money can be used for SB activities.

Best regards,

Fouad Karouta
IEEE AC Chair

- Additionally, the GU IEEE PES has been honored with the High Performing Student Branch Chapter Program (HPSBCP) award for 2024, securing an additional $700 USD in funding from IEEE PES.





PES

Home Committees Events Volunteer Resources About Us

Region 10

PES Student Branch Chapter Name	IEEE Section	Basic Funding Eligibility	Additional Funding Eligibility	Growth Points	Retention Points	Events Points	Total Points	Basic Funding	Additional Funding	Total Funding NEW
Carmel College of Engineering & Technology,PE31	Kerala Section	Y	Y	25.0	36.4	17.0	78.4	150	550	700
Griffith University,PE31	Queensland Section	Y	Y	25.0	30.0	17.0	72.0	150	550	700
GSSS Inst. of Engg and Tech for Women,PE31	Bangalore Section	Y	Y	25.0	36.4	10.0	71.4	150	550	700
Indian Inst of Tech-Guwahati,PE31	Kolkata Section	Y	Y	25.0	36.8	5.0	66.8	150	450	600
Jyothi Engineering College - Thrissur,PE31	Kerala Section	Y	Y	25.0	27.5	14.0	66.5	150	450	600
College of Eng Thalassery,PE31	Kerala Section	Y	Y	25.0	20.7	18.0	63.7	150	450	600
Mara University of Technology-Shah Alam,PE31	Malaysia Section	Y	Y	25.0	19.1	17.0	61.1	150	450	600

EN

University of Queensland IEEE PES Student Branch

Student Branch Committee

Chair: Taolue Shen
Vice-Chair: Anuradha Abeysekara
Secretary: Ge Zhang
Treasurer: Ashan Imantha M.H. Bandara
Advisor: Professor Tapan Saha

At the very beginning, profound gratitude is owed to Professor Tapan Saha, Dr. Feifei Bai, and Dr. Chandima Ekanayake for their unwavering support, which have greatly advanced our branch's projects and initiatives this year. I extend my deepest appreciation to the committee members; without them we could not have successfully executed and enhanced our branch's operations and activities.

We are proud to share that our chapter has won two prestigious awards: 200 AUD as the Second Most Active Student Chapter in Australia selected by the IEEE Australia Council, and 500 USD through the Region 10 High Performing Student Branch Chapter Program 2024. We also made significant advancements in the digital presence. A key milestone was achieving over 150 followers on LinkedIn, reflecting a growth of 300% since the beginning of 2024. This progress was driven by extensive promotional efforts, including lecture introductions, detailed event updates, and distributing IEEE PES flyers. This remarkable progress has greatly enhanced visibility and expanded our engagement with students.

In this year, we focused on fostering collaborations and organizing high-quality events. We strengthened ties with sibling branches, including the UQ IEEE Student Branch, UQ IEEE HKN Mu-Kappa Chapter, and Griffith University IEEE PES Student Branch, undertaking initiatives that promoted collective growth and delivering higher-quality events through collaborations. Additionally, we are excited to have established international connections with New Zealand IEEE student chapters at the IEEE ANZSCON Congress. We're excited about the future international collaborations.

In April, the IEEE PES Day celebration was a tremendous success. The event featured an introduction to IEEE PES by Prof. Tapan Saha, a technical seminar on "Electric Mobility – Learning Effects of EV Drivers" by Dr. Kai Li Lim, a membership drive-focused session by Mr. Anand Shah, and a delightful BBQ Networking session. This has provided our members with a balanced platform for both technical engagement and social enjoyment.

Figure 5. IEEE PES Day Celebration

Throughout the year, we actively managed, supported, and promoted numerous academic and industrial seminars collaborated with the IEEE QLD Section PES/DEIS Chapter, playing a key role in organizing, coordinating, and ensuring the successful execution of these high-quality events. We received positive feedback from participants for each event. In collaboration with Women in Power, UQ IEEE SBC, and GU IEEE PES SBC, we have successfully conducted a PSS/E software training session, which further enhanced the professional development within our community.

Figure 6. Education Activity for Power System Protection - visit of Tibor Congo

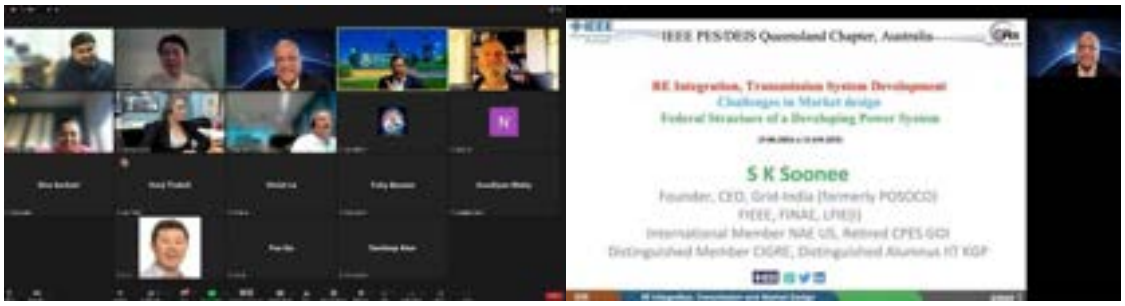


Figure 7. RE integration, transmission system development and challenges in Market design - Mr. Sushil K. Soonee

Figure 8. Application of EMT solutions to address modern grid challenges - visit of Mr. Amalnath Mani

Figure 9. Industry Workshop: Australian Energy Transition Towards 100% Renewable Energy

Figure 10. Integration of DERs and Electric Transportation in Distribution System – visit of Dr Julio Romero Agüero

Figure 11. PSS/E Software Training Session – led by Dr. Indira

In this year, we have also organized and managed two industry site visit events. Collaborated with the IEEE QLD Section PES/DEIS Chapter and GU IEEE PES SBC, we have successfully conducted a site visit event to Mynt Energy Tech on 24th May, to learn the real-life application of hydrogen hybrid systems. In collaboration with UQ IEEE SBC, we have successfully organized the industrial site visit to Australian Energy Market Operator (AEMO) control centre on 29th October. we organized an industrial site visit to the Australian Energy Market Operator (AEMO) control centre. These events enriched our understanding of the power and energy industry and the growing trend of renewable energy.

Figure 12. Site visit to Mynt Energy Tech

Figure 13. Site visit to AEMO Control Centre

To enhance the chapter's visibility and foster university students' engagement, we organized a series of membership drive and networking sessions in collaboration with UQ IEEE SBC to promote the IEEE and PES among undergraduate and graduate students. This includes introductions to PES in undergraduate and master's electrical course lectures, followed by a BBQ networking event where we detailed the benefits of IEEE and IEEE PES membership, encouraging the attendees to join as student members. More than 50 students have participated in our networking event.

Figure 14. Introduction to IEEE PES during electrical lectures

Figure 15. Networking events

In this year, we initiated a pioneering IEEE PES student talk series at UQ, marking the first time where high-performing electrical and power engineering students were invited to share their experiences in coursework and research. Three sessions were successfully conducted, each aligned with a specific course and topic. This innovative initiative significantly enhanced our chapter's visibility, promoted technical knowledge sharing in this community.

Figure 16. UQ High Performance Student Talk Series – Luke Pidgeon, Bolong Zhang, Sean Collins.

We are also proud to announce that we have been selected and participated in the R10 IEEE PES SBC Leader In-Person Training held in Bangalore, India, in November 2024. This experience provided valuable insights, expanded our network, and introduced innovative ideas to enhance our chapter.

Figure 17. R10 in-person training session

In summary, this year has been remarkable in the perspectives of innovation, execution, and high-quality initiatives. Looking ahead, we plan to expand networking opportunities, student talk series and foster more international collaborations in the coming year. We are confident in the continued growth and success of the new committee and UQ IEEE PES Student Branch.

IEEE HKN Mu-Kappa Chapter

Committee
Chair: Alexander Burovanov
Vice-Chair: Mingxuan (Kelly) Zhou
Secretary: Junjia Yang
Treasurer: Ashan Imantha Malala Hetti Bandara
Media Officer: Zachary Sean Grice
Faculty Advisor: Professor Tapan Saha
Website: https://hkn.ieee.org/hkn-chapters/all-chapters/mu-kappa-chapter

UQ Net Zero Summit (Panel Discussion)
This year the Mu-Kappa Chapter hosted the UQ Net Zero Summit - a panel discussion event which fostered networking and discussions on Australia's progress towards achieving Net Zero. The event attracted 70 attendees, demonstrating the community's dedication and interest in this subject area. The panel featured esteemed experts Professor Simon Smart, Dr Saphira Rekker and Mr Joel Bulow. Each panellist brought unique insights and perspectives to the discussion and enriched our understanding of the key challenges and upcoming opportunities Australia is facing. The Summit attendees engaged in interactive conversations with the panellists over delicious refreshments.

Professor Simon Smart, the UQ project lead for Net Zero Australia, provided valuable insights into Australia's progress in achieving zero emissions. Several initiatives have been implemented across various sectors, along with a number of upcoming opportunities for students, graduates and industry professionals to become further involved. Dr Saphira Rekker is a Senior Lecturer specialising in sustainable finance. She emphasised the importance of regulatory frameworks in driving green initiatives and ensuring that there is compliance with global climate goals through accurately and transparently tracking emissions. Mr Joel Bulow, a Power Systems Engineer at the EPEC Group, discussed the concept of a digital twin in the energy market. He emphasised the importance of collaboration and innovation in facilitating the transition to zero emissions.

The UQ Net Zero Summit attracted the interest of students who were eager to learn about the topic and opportunities in the field. The evening's success was attributed to the collective efforts of the attendees, panellists and the IEEE community. This initiative provided a platform to promote IEEE membership, form networks and connections with like-minded people, and spark the conversation to transition towards a more sustainable future.

IEEE Membership Drive
The IEEE HKN Mu-Kappa Chapter attended a first year engineering specialisations expo organised by the UQ Engineering Undergraduate Society (EUS). This event attracted the cohort of first year engineering students, which was the perfect opportunity to showcase IEEE HKN and drive memberships

for students to join in their second year of study. Representatives from the Mu-Kappa Chapter set up a

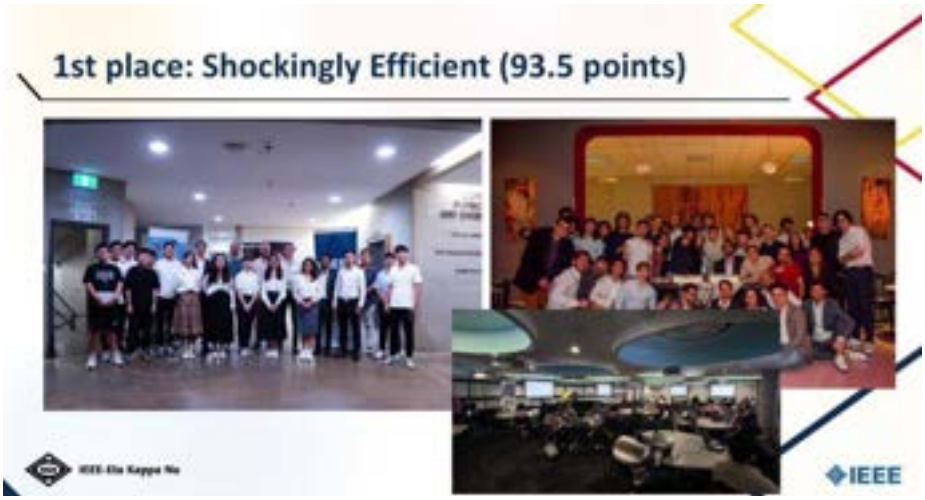
booth at the event and engaged with the students.

IEEE HKN Founders' Day

The UQ IEEE HKN Mu-Kappa Chapter celebrated Founder's Day on the 30th of November 2024. Founder's Day was a memorable event that brought together all members of the Chapter to celebrate the year's success and growth. The chapter has grown significantly over the years with the addition of several new members, demonstrating the academic excellence of the community. Members commemorated the founders of the organisation and its history. There were engaging discussions all around the room as the members celebrated over food and refreshments.

120th Anniversary International Hackathon

Zachary Grice, Media Officer of IEEE HKN Mu-Kappa participated in the 120th Anniversary International Hackathon over the period of October 11th, 2024, to October 22nd, 2024. The team 'Shockingly Efficient' consisted of the most varied group in terms of nationalities (Italy, Brazil, Rwanda, USA, and Australia). A lot was learned during the event, with a series of challenges, including cybersecurity vulnerability testing, machine learning, signal processing, web-based game development, and writing efficient codes. Due to the great efforts of the team, first place was achieved with a total score of 93.5 points!



First Year Engineering - Arduino Electronics Workshop

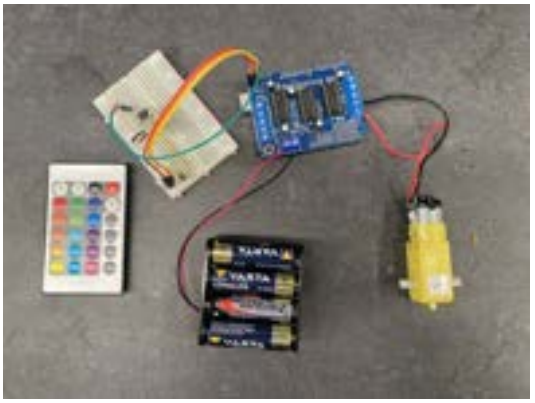
The First Year Engineering Arduino Electronics Workshop event was designed to assist First Year engineering students in developing foundational programming & electronics skills for their first year team projects. This is a recurring event which the Mu-Kappa chapter aims to run every semester. This year a new presentation structure was adopted which heavily emphasised performing live demonstrations and increasing the engagement of students. The event received a large amount of positive feedback from the student participants, course staff and attending faculty members. The event consisted of a small Arduino lecture, live demonstration and Q&A.

The event started with a brief 15 minute presentation that introduced the IEEE HKN Mu-Kappa Chapter and the UQ IEEE Student Branch. Since the primary target audience for this presentation was first year students, they did not meet the requirements to join IEEE HKN directly, as such the team encouraged them to join IEEE through the student branch. This was followed by a brief technical/theoretical introduction to Arduino. This section of the presentation was delivered in a fairly lightweight format, focusing only on the necessary and useful concepts.

As part of the presentation, a live demonstration was conducted. Alexander Burovanov (Chair) demonstrated how to configure and write the Arduino code for a simple IR motor control system (seen in the attached images). This demonstration was selected as it assisted in teaching the relevant skills required for the first year engineering team project course. Students engaged with the live demonstrations and followed along using their own electronics. During the Q&A period 5 technical volunteers actively engaged with the students and roamed around to assist with questions and/or project troubleshooting.

The event concluded with catered networking. The students really enjoyed this and took advantage of the opportunity to network with our current HKN team and alumni. The HKN team is confident that this event will lead to various students expressing interest in joining the Mu-Kappa chapter in the future.

Overall, this was a very successful event with a strong attendance rate and large amount of positive feedback from all involved parties. The Mu-Kappa HKN chapter will utilise this feedback to further refine and improve this event for future semesters.



IEEE-HKN Student Leadership Conference (SLC)

The Eta-Kappa Nu (HKN) society facilitates an annual Student Leadership Conference (SLC) event open to all chapter members and alumni around the world. The SLC is focused on delivering training for Chapter leaders, individual and professional development, technical sessions, and networking to bring together members from around the world and encourage inter-Chapter activity and cooperation. This year Alexander Burovanov (Chair) attended the SLC in Charlotte, North Carolina on behalf of the University of Queensland Mu-Kappa chapter. Throughout the conference Alexander took part in various activities allowing him to develop valuable insights and connections for the Mu-Kappa chapter.

On the first day, Alexander took part in a BLE technical workshop delivered by Texas Instruments. The workshop highlighted some key improvements which the Mu-Kappa chapter can implement to improve the structure and efficiency of workshop styled events. Following this Alexander attended a networking reception where he established new connections with the students of the Theta Xi (Norwich University) HKN chapter.

On the second day, Alexander attended technical workshops on LiDAR Remote Sensing and Quantum Computing. These workshops exposed Alexander to future potential technical talk topics which could be delivered by the Mu-Kappa chapter. Alexander also attended a HKN Support Grant funding workshop which explained the application process and requirements for the $250USD IEEE HKN Chapter Support Grant. Alexander's participation in this workshop resulted in the Mu-Kappa chapter being eligible to trial a new $500USD funding allowance for 2025. After the workshops, the day was finalised with a networking dinner and awards ceremony which highlighted the achievements of IEEE HKN. The Mu-Kappa chapter was specifically recognised in a highlight video for the UQ Net Zero Summit event. **Furthermore, the Mu-Kappa chapter was also awarded a 2023-2024 Key Chapter award and a prize for travelling the furthest out of any chapter.**

On the final day of the conference, Alexander attended an IEEE HKN Region 5-10 meeting where he fostered connections with the Mu Nu chapter (Politecnico Di Torino - Italy), Lambda Zeta chapter (University of North Texas - USA), Kappa Upsilon chapter (University of Texas San Antonio - USA) and the Theta Xi (Norwich University - USA). During the meeting, various topics including chapter engagement and best practices were discussed amongst the regions. The connections established with other HKN chapter members and staff throughout this conference will prove as a valuable resource for the Mu-Kappa chapter, fostering future growth and improvement in all aspects of chapter operations.


WELCOME


IEEE-Eta Kappa Nu
theEE

IEEE Queensland University of Technology (QUT) Student Branch

STB13051 Annual Activity Report


Yuchen Zhang (QUT Student Counsellor)


Md Mostafizur Rahman Komol (QUT Student Branch Chair)

Activity 1:
Title: Student Branch AGM
Date and Time: 01 May 2024, 10.00-10.30am
Description: The student branch committee with the following members was established and the future plan of student branch activities was made.
Branch Counsellor: Yuchen Zhang
Branch Chair: Md Mostafizur Rahman Komol
Branch Vice-Chair: Dipraj Debnath
Branch Secretary: Anuraj Uthayasooriyan
Branch Treasurer: Anjala Wickramasinghe
Branch Webmaster: Imtiaz Ahmed

Activity 2:
Title: IEEE QUT Student Branch Welcome Party
Date and Time: 04 Oct 2024, 3.00-4.30pm
Description: To celebrate the restart of IEEE QUT student branch, we hosted a membership drive session for IEEE Student and Young Professional membership. Finally, we held an exciting panel discussion with several QUT academic staff who shared their great experiences with IEEE. This was a fantastic event that helped students understand the vision and plan of IEEE QUT Student Branch, discover benefits of IEEE memberships personally and at QUT Student Branch, connect with peers and celebrate the achievements. Snacks and drinks were provided for free. A banner of IEEE QUT Student Branch was designed and printed. The banner has also been used in Activity 3 and 1st Australian Soft Robotics Symposium held at QUT.
Cost: $104.5
IEEE Attended: 22
Guests Attended: 13

Activity 3:
Title: Tutorial on Grid connection challenges in Australia during renewable integration
Date and Time: 25 Oct 2024,11.00am-12.30pm

Description: As Australia embarks on its ambitious journey toward achieving net-zero by 2050, the role of reliable grid operations becomes increasingly critical. The transition to a low-carbon economy necessitates a significant shift in energy generation, with an accelerated deployment of renewable energy sources such as solar, wind, and hydropower. However, the intermittent nature of these energy sources presents unique challenges for grid stability and reliability. Reliable grid operations are essential to ensure that the electricity supply remains consistent and resilient amidst this transition. By investing in advanced grid technologies, enhancing energy storage capabilities, and implementing smart grid solutions, Australia can improve its grid's adaptability and responsiveness, thus securing a reliable energy supply. Therefore, it is important to understand the key aspects of Australian grid codes, rules and connection standards, and make a good collaboration between the industry and academic research to support this transition. Dr Apu Banik from ACCIONA Energia delivered a seminar for QUT student branch about grid connection studies including:

- Understanding the process (e.g. plant sizing, selection of technology, feasibility study) to start a green field project from developer perspective.
- Providing an overview of NER rules (chapter 5) with exemplary results of each clause
- Understanding the access standard for each clause and modeling requirement
- Understanding the roles of developer, NSP and AEMO in the grid connection process

Cost: $197
IEEE Attended: 18
Guests Attended: 2