



INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS

QUEENSLAND SECTION

ABN 67 431 648 974

ANNUAL GENERAL MEETING REPORT FOR 2023

PRESENTED AT
Brisbane Convention &
Exhibition Centre

ON
24 NOVEMBER 2023

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

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Section Chair

Section Chair's Report



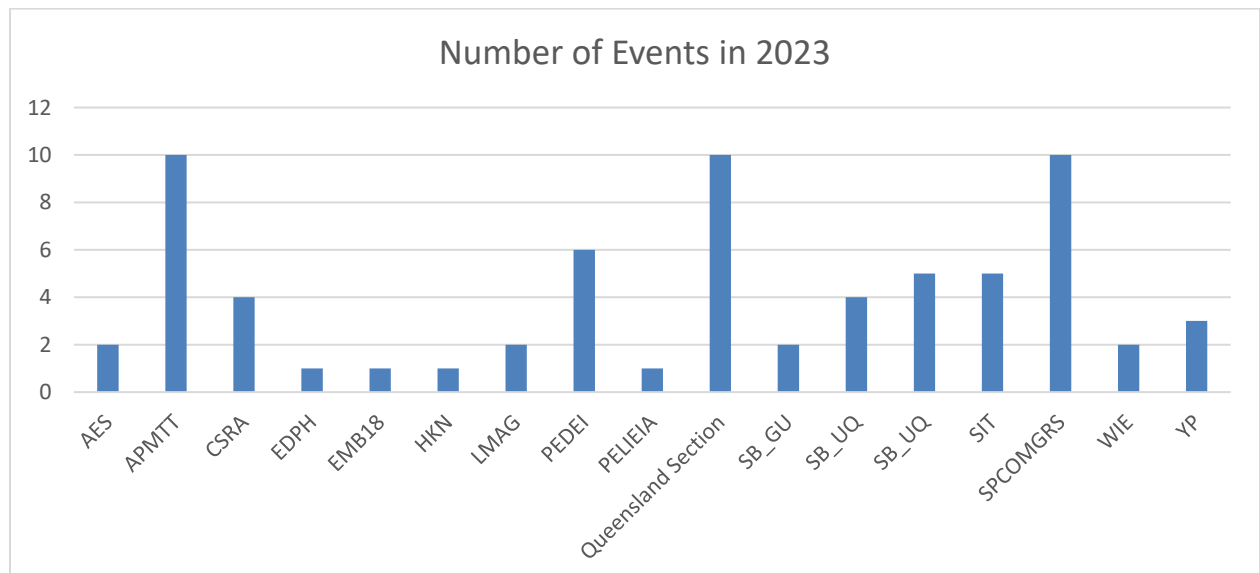
Om Perakash
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2023 has been a great year for IEEE Queensland Section, and it is an honour for me to serve as the Chair of Queensland Section. I would like to reflect on some of the main activities we planned for 2023. Following are the some of the highlights.

Section Meetings & Activities: COVID19 restrictions were eased at the start of 2023, however, life as we knew before COVID was not same in 2023; most of our ExCom members became comfortable with attending the meeting virtually which makes it convenient for the team to attend; Most of the attendance of the team members in monthly Queensland Section were virtual, however, towards the end of the year, I started noticing an increase of face-2-face participation.

During the year, I got a chance to reconnect with vibrant members of the Section committee, however, with some of them I only managed to meet virtually; I hope many of the future committee members will go back to attend face-to-face meetings.

Following is the snapshot of the activities organized by the QLD Section, student branches, affinity groups and chapters.



Section Committee: In 2023, we managed to fill most of the positions which have been vacant for few years; we had success in filling Student Activities, Young Professional and Women in Engineering Chair roles; These committees had very little activities in last few years and chapters / affinity groups were at verge of dissolvment by IEEE HQ, but we successfully managed to revive them; Thanks to the team for organizing activities for the IEEE members.

Distinguished Lectures: After patiently waiting for 2 years due to COVID-19, we successfully managed to resume our Distinguished lectures in IEEE QLD Section; Prof. Dixit is an IEEE Distinguished Lecturer from California, USA who visited Brisbane on 20th April to introduce the concept of network slicing (NS) and present an overview of its status along with a brief introduction of NFV and SDN as enabling technologies. For this year, we have another distinguished lecture being planned by MTT/APS in couple of weeks which will be promoted in due course.

Sections Congress 2023: IEE Sections Congress is triennial flagship event hosted by MGA, brings together volunteer leaders from every member country to share ideas and solutions. Previous IEEE Sections Congress in 2020 was virtual; however, this time SC was happened physically, all Section Chairs were invited to attend. Unfortunately, due to my work commitments, I couldn't go to Ottawa, I am glad that Mike Robinson was able to travel and represent IEEE Queensland Section in place of me.

Volunteer leaders from around the world met in the Shaw Centre, Ottawa, Canada from 11-13 August 2023 to exchange ideas and learn about the products and programs IEEE offers to members in their local areas.

Please refer to Mike's detailed report in the Sep 2023 Newsletter published by IEEE QLD Section

IEEE Day 2023: IEEE Day is celebrated every year to commemorate the first time in history when engineers worldwide and IEEE members gathered to share their technical ideas in 1884. This year Section organized an activity to help promote elevation of IEEE members to Senior membership; IEEE Day 2023- Senior Membership Elevation & BBQ was organized on 3 October 2023 at St Leo's College, College Rd, St Lucia, QLD 4067 (UQ St Lucia Campus). We encouraged eligible IEEE members to bring their CV and meet our IEEE QLD Section executive members to help you become an IEEE Senior member.

This event was a successful one as following that event, I received many applications from Section 's IEEE members who are eligible and wish to be elevated to IEEE Senior membership.

Radar 2023: International Conference on Radar 2023 was organized on 06th – 10th November 2023 at International Convention Centre in Sydney, Australia following its five-year rotation. IEEE Queensland Section was sponsor and one of the underwriters for the conference; This conference proved to be a huge success and was well received by the participants; Please see the link <https://www.radar2023.org/> for the further details.

Upcoming Region 10 Realignment: The IEEE MGA Board and the IEEE Board of Directors have decided to divide Region 10 into two and merge Region 1 and Region 2 in the USA, effective 1 January 2028. The new Region 10 shall consist of North Asia, and Region 11 shall consist of South Asia and Pacific. This realignment is being done to reflect the changes around the numbers of IEEE membership within USA and Region 10 and to improve diversity and better representation of Asia-Pacific region at Board Level. Here is the snapshot of how South Asia Pacific region and North Asia region will look like after the split.



Field Visit: Field visit to Gilmour Space Technologies in Gold Coast was planned to be another highlight of the year, but unfortunately this couldn't be organized due to lack of senior volunteers' availability to coordinate this activity; This activity was going to be bring many IEEE student members to the Gilmour Space Technology facility at Gold Coast and teach them about Rockets being made in QLD. This is very good initiative and I encourage 2024 team to try to organize this event next year.

IEEE AGM and Annual Dinner 2023: Continuing the tradition, The IEEE Queensland Section is organizing its Annual General Meeting (AGM) and Annual Dinner on November 24, 2023. This year's venue will be Plaza Gallery at Brisbane Convention & Exhibition Centre. The dinner function includes entertainment and a keynote speaker. We highly encourage our valued members to participate in this annual social event to celebrate the achievements of the IEEE Queensland Section in 2023 and to welcome the new IEEE Queensland Section Executive Committee for the year 2024.

- Annual General Meeting: 06:00pm – 09:00pm
- Dinner: 6:30 pm – 9:00 pm: Three-course dinner with beverages.
- Keynote speaker: Jacqui Bridge, EGM Energy Futures, Powerlink Queensland.
- Dress code: Semi-formal.

In Summary, 2023 was a busy year for IEEE QLD Section; I would like to thank my committee for volunteering their time and supporting us in organizing so many activities for the benefit of IEEE members. It has been a great experience for me serve as the chair for 2023. Due to work commitment, I am not able to continue for next year, however, I am happy that new committee is in decided for 2024 and they will take the Section to the new heights. I wish the Queensland section all the best in the upcoming years.

Section Vice Chair



Rahul Sharma
rahul.sharma@uq.edu.au

I had the pleasure of serving as the Section Vice Chair in 2023. This was my first year as the section vice chair. Overall, the year was remarkable with a number of technical and professional activities. I was glad to be part of these activities and was pleased to support the section operations where needed in conjunction with the section chair and the secretary.

The particularly promising aspect of the section activities this year was the proactive involvement of student members and branches. The Queensland section takes pride in supporting the student volunteers through numerous initiatives including numerous scholarships awards, facilitating their attendance at conferences and workshops, demonstrating our commitment to supporting the future leaders of IEEE.

This year we continued to conduct the monthly meetings in hybrid mode where most members understandably attended the meeting online. In 2024, we would aim to run some events that will allow members to have more in-person interactions.

Collaborating with our dedicated volunteers has been a pleasure. I will continue in this role in 2024 for one more year.

Lastly, I extend my gratitude to all IEEE volunteers and members for their support throughout 2023. Wishing everyone a Merry Christmas and a Happy New Year.

Section Secretary



Chandima Ekanayake,
chandima@eecs.uq.edu.au

This marks my inaugural year as the secretary of the Queensland section, following my tenure as the section vice chair in 2021 and 2022. Serving on the IEEE Queensland section's executive committee is consistently gratifying. The role of secretary has proven instrumental in comprehending the many activities undertaken by the entire section, and it has been a distinct pleasure to contribute to the various noteworthy initiatives highlighted in this report.

In this role the primary responsibilities entailed the preparation of documents related to the organization, execution, and reporting of monthly Section meetings. Additionally, I provided support to the Section Chair as required and engaged in miscellaneous tasks such as reporting on new officers. I also played a role in adjudicating the winner of the IEEE student thesis competition. The submissions received were of exceptional quality, representing a wide geographic span from Gold Coast to Rockhampton, encompassing many Queensland Universities. Congratulations to all the winners, and I anticipate that they will emerge as future leaders of the IEEE Queensland section.

Throughout 2023, nine committee meetings were convened, all in a hybrid format. Notably, a significant majority of members attended these sessions online—a marked shift from the circumstances dictated by the COVID pandemic. While online meetings effectively boosted member participation, acknowledging the potential for in-person meetings to enhance member interactions is crucial. The plan is to persist with the hybrid meeting format in 2023, with hopes of increased in-person attendance.

Looking ahead to 2024, my intention is to assume a different role while maintaining my commitment to supporting the incoming secretary.

In conclusion, I extend my sincere appreciation to all IEEE volunteers for their persistent support and contributions to local activities. Wishing everyone a joyful New Year.

Section Treasurer



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

It was a rewarding experience to assume the role of treasurer for the Queensland section, despite joining the team later in the year to fill a previously vacant position. Serving as the Section Treasurer, I assumed the responsibilities of managing the allocated funds for the section, essentially functioning as the Chief Financial Officer. I am committed to continuing in this role next year, with the aspiration of enhancing the level of service provided to the section. In the current year, the financial health of the section has remained robust.

IEEE Queensland Section

Treasurer's Report:

Reporting Period

Date prepared:

Treasurer:

November 23 AGM Update

Jan 2023 - 8th Nov 2023

Wednesday, 8 November 2023

Richard Yan

ANZ Brookside Shopping Centre (BSB 014-203)			Cheque Account 469430083
Date	Item	Amount	
1/01/2023	Starting balance		\$29,784.15
Income			
2/03/2023	TRANSFER FROM ATO ATO67431648974I001		\$313.00
5/07/2023	CREDIT INTEREST FROM 9110-03931		\$50.00
12/07/2023	CREDIT INTEREST FROM 9110-03659		\$37.70
20/07/2023	INTL PAYMENT FROM THE INSTITUTE O REF:20 23XXXXXXX6200 USD7784.40 Fee 8.0C	THE INSTITUTE OF ELECTRICAL AND	\$11,125.30
4/09/2023	TRANSFER FROM EVENTBRITE AU PT 635100431487		\$5,386.72
19/09/2023	CREDIT INTEREST FROM 9147-58977		\$437.50
5/10/2023	TRANSFER FROM ATO ATO67431648974I001		\$431.00
6/11/2023	TRANSFER FROM ROBINSON AIR CANADA REFUND		\$2,000.00
7/11/2023	TRANSFER FROM ROBINSON AIR CANADA REFUND		\$931.24
Income Subtotal			\$20,712.46
Expenses			
20/04/2023	ANZ INTERNET BANKING PAYMENT 734371 TO Wendi Ma	UQ Industry Pres Catering Reimburse	-\$261.81
10/05/2023	ANZ INTERNET BANKING PAYMENT 570212 TO Shijie Yao	Pizzas for Excom meeting	-\$100.96
23/05/2023	ANZ INTERNET BANKING PAYMENT 215886 TO Brisbane Conv Exhibition Centre	BCEC Short Course Inv 84903	-\$2,640.00
23/05/2023	ANZ INTERNET BANKING PAYMENT 215853 TO Linfeng Liu	HKN Arduino food catering	-\$205.82
24/05/2023	ANZ INTERNET BANKING PAYMENT 100996 TO Linfeng Liu	HKN Technical Talk 19May	-\$1,152.52
2/06/2023	ANZ INTERNET BANKING PAYMENT 510501 TO Shijie Yao	UQ IEEE PES SB	-\$389.20
30/06/2023	ANZ INTERNET BANKING PAYMENT 519180 TO Yue Qu	IEEE PES APPEC 2022 Travel Award	-\$1,000.00
24/07/2023	ANZ INTERNET BANKING PAYMENT 936914 TO Om Perkash	IEEE SC23 - Travel Advance for Mike	-\$2,931.24
9/08/2023	ANZ INTERNET BANKING PAYMENT 896897 TO Brisbane Conv Exhibition Centre	Invoice 87023	-\$2,010.91
9/08/2023	ANZ INTERNET BANKING PAYMENT 911088 TO Wendi Ma	membership drive on the 26th of Jul	-\$152.00
14/08/2023	ANZ INTERNET BANKING PAYMENT 851503 TO Ian VL and Emma L Clarkson	IEEE Short Course Reimbursement	-\$2,370.33
1/09/2023	ANZ INTERNET BANKING PAYMENT 896894 TO Yuanlong Jiang	10th of August UQ event	-\$155.16
1/09/2023	ANZ INTERNET BANKING PAYMENT 798286 TO Ian VL and Emma L Clarkson	Tracking and Sensor Fusion Dinner	-\$56.32
25/09/2023	ANZ INTERNET BANKING PAYMENT 887957 TO Wendi Ma	UQ Student CSIRO Soft Robo Sep 2023	-\$190.95
26/09/2023	ANZ INTERNET BANKING PAYMENT 375883 TO Miss Andrea Lam	6156 IEEE Deposit	-\$275.00
29/09/2023	ANZ INTERNET BANKING PAYMENT 540530 TO Shijie Yao	PES 3 functions	-\$706.49
3/10/2023	ANZ INTERNET BANKING PAYMENT 279956 TO Brisbane Conv Exhibition Centre	Invoice 88686 Event ID 77841	-\$2,660.00
10/10/2023	ANZ INTERNET BANKING PAYMENT 157386 TO Mingxuan Zhou	IEEE UQ student Arduino	-\$151.97
11/10/2023	ANZ INTERNET BANKING PAYMENT 625346 TO St Leos Catering	Invoice No E06944	-\$1,107.20
27/10/2023	ANZ INTERNET BANKING PAYMENT 665861 TO Brisbane Conv Exhibition Centre	88681 IEEE AGM	-\$3,519.09
27/10/2023	ANZ INTERNET BANKING PAYMENT 655137 TO Hamza Mubarak	Conference Travel Grant	-\$500.00
27/10/2023	ANZ INTERNET BANKING PAYMENT 655343 TO Nafis Ahmed Chowdhury	Conference Travel Grant	-\$500.00
30/10/2023	ANZ INTERNET BANKING PAYMENT 882744 TO Kevin John Gough	LMAG meeting	-\$58.60
31/10/2023	ANZ INTERNET BANKING PAYMENT 350430 TO GE ZHANG	IEEE QLD Travel Award	-\$500.00
6/11/2023	ANZ INTERNET BANKING PAYMENT 776744 TO Brisbane Conv Exhibition Centre	Vaughan Clarkson 77841 Short Course	-\$8,386.00
Expenses Subtotal			-\$31,981.57
Closing Balance 8 Nov 2023			\$18,515.04

IEEE NextGen Banking			Account 100270
Date	Item	Amount	
1/01/2022	Starting balance	USD	3,937.85
Income			
1/01/2023	Interest Calculation: 12/1/2022 - 12/31/2022 @ 2.18	USD	7.13
1/02/2023	Interest Calculation: 1/1/2023 - 1/31/2023 @ 2.42	USD	7.96
1/03/2023	Interest Calculation: 2/1/2023 - 2/28/2023 @ 2.69	USD	7.98
1/04/2023	Interest Calculation: 3/1/2023 - 3/31/2023 @ 2.86	USD	9.44
1/05/2023	Interest Calculation: 4/1/2023 - 4/30/2023 @ 3.14	USD	10.04
1/06/2023	Interest Calculation: 5/1/2023 - 5/31/2023 @ 3.27	USD	10.85
1/07/2023	Interest Calculation: 6/1/2023 - 6/30/2023 @ 3.47%	USD	10.45
1/08/2023	Interest Calculation: 7/1/2023 - 7/31/2023 @ 3.61	USD	10.88
29/08/2023	IEEE PES High Performing Student Branch Chapter Award for University of Queensland, PE31 (Queensland Section)	USD	300.00
1/09/2023	Interest Calculation: 8/1/2023 - 8/31/2023 @ 3.74	USD	11.38
1/10/2023	Interest Calculation: 9/1/2023 - 9/30/2023 @ 3.90	USD	13.40
27/10/2022	IEEE PES High Performing Chapter Award for Queensland Section Chapter, PE31/DEI32 R10 CH10096	USD	730.00
1/11/2023	Interest Calculation: 10/1/2023 - 10/31/2023 @ 3.97	USD	12.38
Income Subtotal USD			USD 1,141.95
Expenses			
12/06/2023	Sudhir S. Dixit - DL Hotel accomodation in Brisbane Reimbursement	USD	(383.59)
Expenses Subtotal USD			USD (383.59)
Closing Balance			USD 4,696.21
Assumed USD-AUD exchange rate			1.52
Nett cash available			\$25,653.28
Nett worth (nett cash available + assets - liabilities)			\$113,153.28
Assets: Term Deposits			Value
ANZ 014203-911003931			\$25,000.00
ANZ 014203-911003659			\$25,000.00
ANZ 014203-914758977			\$25,000.00
Assets: Conferences (book value)			Value
Radar 2023			\$12,500.00

Newsletter Editor



Mike Robinson,
blackmagic1943@gmail.com

Only two newsletters were produced in 2023.

I have made two important changes to the newsletter this year.

The first change is to include a new page named Bits and Pieces. This is to facilitate short, simple pieces of news, such as dates of events and/or announcements of general interest to the section's membership.

The second change is to distribute the newsletter to all of the section's membership. In the past the newsletter was sent only to members of the section's committees. This change means that every member of the Queensland Section is kept abreast of activities covered by the newsletter.

Women in Engineering



Punam Pawar
Punam.pawar@uq.net.au

Serving as Chair of the IEEE QLD Women in Engineering Group has been a pleasure. I stepped into the role in February 2023. The IEEE QLD WIE group was inactive in 2021 and 2022. We currently have only 23 early career and senior members in the group. I hope we will grow more in the years to come. In 2023, we organised two events.

Event 1:

A virtual networking event for the IEEE QLD WIE group members was held on 22nd June 2023. This event was primarily held to get to know our members, their expectations and requirements for future events and to promote the IEEE WIE Day (29th June) Launch. We had our early career members join the events and voice their expectations for future events with more networking opportunities.



Flyer of the IEEE WIE QLD Meet & Greet

Event 2:

The second event, “Connect with Young Professionals”, was organised on 26th September 2023. This event was organised in collaboration with the IEEE QLD YP group. We had two speakers for the event, Dr Akila Wijethunge and Eng Ashan Bandara, discussing the advantages of joining the YP community and the networking opportunities provided for early career professionals.

Connect with



YOUNG Professionals

An information session on how to elevate your career to the next level with IEEE Young Professionals. During this one-hour discussion, we will explore how being a young professional can enhance your skills and prepare you for a successful career.

Date: 26th September 2023
Time: 5.00 – 6.00 PM AEST
Zoom Link : <https://uqz.zoom.us/j/83977448545>

Our resource persons:



Dr Akila Wijethunge
Lecture University of Sri Jayawardhanapura, Sri Lanka.

Executive Committee Member of IEEE Region 10 (Asia Pacific) and Chair-Elect of IEEE Power and Energy Society Sri Lanka. . Former Chair of both IEEE Women In Engineering Sri Lanka and IEEE Young Professionals Sri Lanka. Former Executive Committee member of IEEE Women in Engineering Region 10 (Asia Pacific)



Eng. Ashan Imantha Bandara
PhD Research Fellow, The University of Queensland, Australia.

Affinity Group coordinator for the Oceania Region in the IEEE Region 10 Young Professional Affinity Group. One of the founding chairs of the New Initiative of IEEE Young Professionals Sri Lanka, IEEE Y2NPro. Former Treasurer of IEEE YP Sri Lanka.

Organised by: IEEE Young professionals, Queensland Section. Collaborate with IEEE WIE Queensland Section





Flyer of the Connect with Young Professionals Event

I hope we will have more members joining us and many more successful events for our members in 2024.

Life Members Affinity Group



John Gough
john@atwell-gough.com

The LMAG made a slow start to its activities this year. In the event, two meetings are planned. Both of these activities were designed to feature a lightly-technical talk which would be accessible, and of interest to, life members from all parts of the IEEE family.

The first activity was held on 24 October, and featured a talk from Professor David Abramson, director of the University of Queensland's research computing centre. David brought us up to date on the ways in which access to high performance computing helps scientists and engineers solve difficult research and design problems.



David Abramson speaks to the LMAG

The second activity will take place on 23 November. This is an AI themed event.

Aerospace and Electronic Systems Chapter



Vaughan Clarkson
v.clarkson@ieee.org

The Qld AESS chapter has had a good year in 2023. The short course programme that was begun last year, in conjunction with the South Australian chapter, continued this year with another two events.

The first course was titled “Introduction to Tracking and Sensor Fusion”. The lecturers were Branko Ristic and Du Yong Kim, both of RMIT University. It was held on Monday & Tuesday, 28th & 29th August, at the Brisbane Convention & Exhibition Centre (BCEC).

Attendance at the first course was a little smaller than we’d hoped—only 7 students. However, for the attendees themselves, it was all upside. The smaller group made for a convivial experience with lots of opportunities to ask questions and receive individual attention. The attendees were honoured in being the first to benefit from the colossal amount of effort Branko and Du Yong had put into preparing the notes. A thorough overview of the field was presented. The notes and Matlab code they shared with attendees will serve as an invaluable reference for years to come.

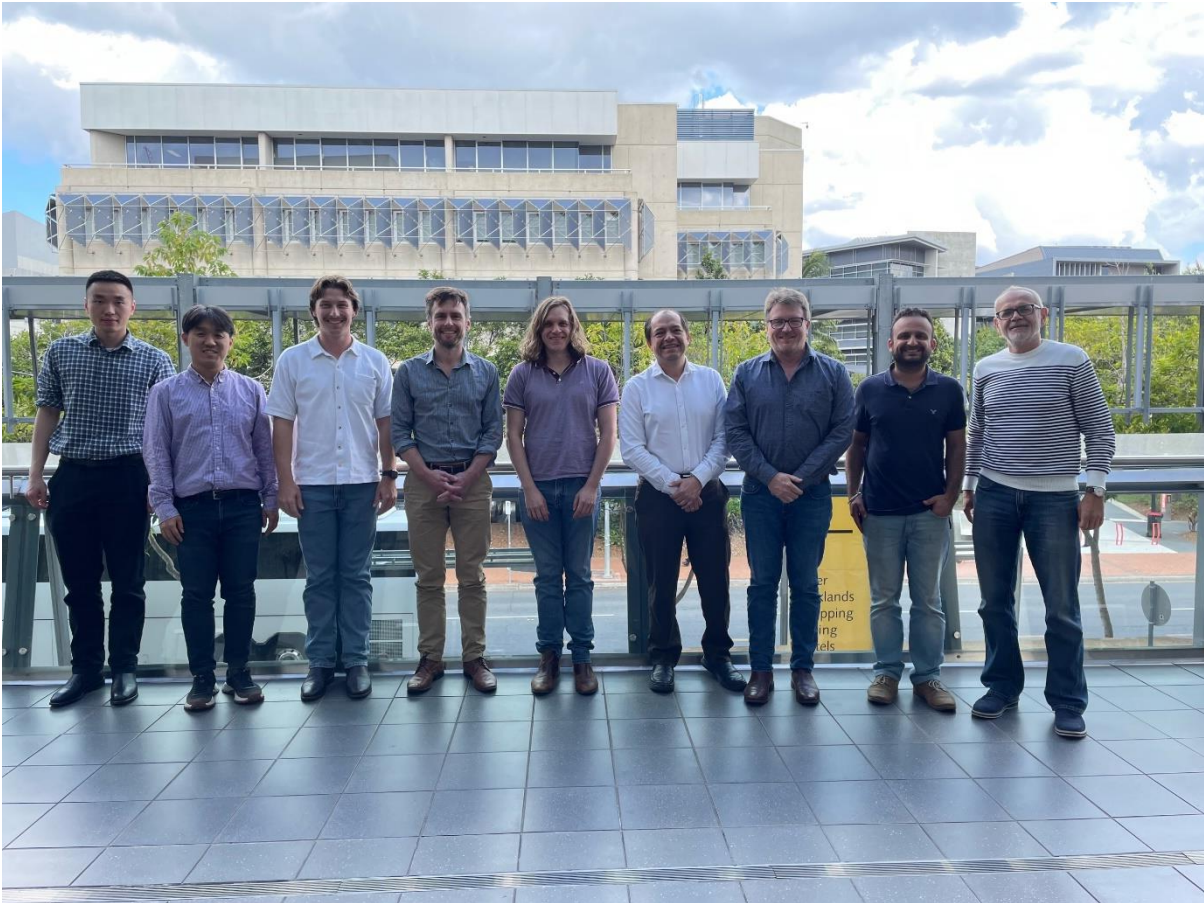
The second course is titled “Introduction to Electronic Warfare and Cognitive Electronic Warfare”. The lecturers are David A. Brown, of the Southwest Research Institute, and Karen Haigh, of Haskill Computing—both USA. The course will be held on Monday & Tuesday, 13th & 14th November (which is tomorrow and the next day, at the time of writing). The venue is again the BCEC. As well as being a joint production with the South Australian AESS chapter, this course is also a coordinated effort with the Australian chapter of the Association of Old Crows. The “Old Crows” is a technical professional organisation for individuals who have common interests in Electronic Warfare and other information-related capabilities.

While the first short course only just managed to break even financially, the second course is on track to make a sizeable surplus. There are 32 registered attendees, exceeding expectations. There will be plenty to learn and many opportunities for networking during the breaks.

The other big event in which the Chapter and the Section participated this year is the International Conference on Radar—Radar ’23. The conference was held from Monday, 6th November, to Friday, 10th November, at the International Convention Centre in Sydney. The conference rotates annually through five different national hosts. Some readers would remember that the last time Radar came to Australia, in 2018, it was held in Brisbane.

This year’s conference was a big success. It smashed all the Australian records. The final statistics are still being compiled but attendance exceeded 450 (Brisbane’s attendance was 315). Sponsorship revenue was also more than double any previous conference. Our Section was one of the underwriters of the conference, so we expect to make a windfall surplus when the accounts are finalised in the coming months.

My two-year term as chapter chair concludes this year. I’ve really enjoyed the experience. Next year, my vice chair, Robert Kennedy, will return to the chair. The chapter is in very good hands!



The Brisbane class for “Introduction to Tracking and Sensor Fusion”. The lecturers, Du Yong Kim and Branko Ristic, are second from left and at far right, respectively.



David A. Brown presents “Introduction to Electronic Warfare” in Brisbane.



Karen Haigh presents “Introduction to Cognitive Electronic Warfare” in Brisbane.

Computational Intelligence



Marcus Gallagher
marcusg@uq.edu.au

It has been a pleasure to serve in the Chair role for the Computational Intelligence chapter in 2023. This year, the International Joint Conference on Neural Networks (IJCNN) was held at the Gold Coast Convention and Exhibition Centre from June 18-23. IJCNN is one of the flagship IEEE CIS Conferences and there were more than 1000 registered attendees for the conference. One of our members, Prof Brijesh Verma, was the General Co-Chair for IJCNN 2023 and a number of our members and student members attended the conference. For more information see: <https://2023.ijcnn.org/>

This year seems to have gone by rather quickly. However, two local CI chapter events (technical seminars) are planned to occur before the end of the year.

We are currently short on volunteers for the CIS Chapter. If you have a little time and enthusiasm, please consider nominating for one of the positions. IEEE offers some excellent opportunities that we could take advantage of to have more activities within the Chapter. If you have any other suggestions for future activities in our local CIS Chapter, I would be very interested in hearing them. Please feel free to send me an email with your thoughts (marcusg@uq.edu.au).

Computer Chapter



Brian Lovell
lovell@eecs.uq.edu.au

The IEEE Queensland Computer Chapter had ambitious plans to submit a bid for hosting IEEE Tencon in 2025, coinciding with the 25th anniversary of the IEEE Queensland Chapter. Regrettably, the decision to pursue this endeavour was reconsidered due to concerning reports of low attendance and inadequate participation at Tencon 2023 in Singapore. The data suggested that organizing a similar event in Brisbane might not be financially feasible, prompting the discontinuation of the bidding process.

While the bid for Tencon 2025 was shelved, the IEEE Computer Chapter continued its commitment to providing valuable content for its members. Two distinguished speakers were identified to deliver talks for the chapter. However, the logistics of organizing these talks in 2023 proved challenging due to the speakers' existing commitments.

Moving forward, it is likely that these distinguished speakers will be able to fulfill their engagements in early 2024. This delay is seen as a strategic decision to ensure the quality and impact of the talks in a crowded calendar, allowing the IEEE Computer Chapter to maintain its commitment to delivering valuable content to its members.

Control Systems Robotics and Automation



Thierry Peynot
t.peynot@qut.edu.au

IEEE QLD Joint Control Systems/Robotics and Automation Societies Chapter concluded a good year 2023 with varied activities. We hosted or co-hosted 4 main events (by November), most of which were in a hybrid format, in-person and online. We had a wide variety of very engaging speakers addressing various aspects of Robotics and Automation Systems and/or Control Systems, and coming from different parts of Australia as well as from the UK and the USA. We also hosted a visit of the chair of the NSW RAS society, to further develop the links between our sections and societies.

Our committee was active in the general IEEE RAS/EMBS societies. Our vice-chair co-chaired the IEEE RAS/EMBS International Conference on Rehabilitation Robotics 2023, within RehabWeek23 in Singapore (24-28 Sept, 2023). The whole RehabWeek attracted more than 1000 participants, with ICORR being the largest conference within the event. Co-chairing the conference involved coordination with 36 associate editors and 11 session chairs, 10 best paper judges and managing 165+ peer-reviewed paper submissions. The involvement of the international IEEE community was significant, with over 282 paper reviewers.

Event 1: 16 Feb 2023

Co-organized with The University of Queensland, we co-hosted Prof. Dana Kulić from Monash University. Her talk on *Learning and Communication for Human-Robot Teaming* covered recent projects in the Monash Robotics HRI group. It covered learning for and during human-robot interaction, enabling robots to adapt to diverse human objectives, capabilities and preferences with focus on two applications: shared autonomy for drone piloting, and adaptive gait rehabilitation. She also covered approaches for effective robot team communication, including conveying robot state and capability, and guidance to improve performance. This hybrid event attracted ~45 people (incl. 20 IEEE members).

Event 2: 17 Oct 2023

In October, our chapter co-hosted an online seminar with the QUT Centre for Robotics from Dr. Jack Collins from the Oxford Robotics Institute, University of Oxford, UK, on “*Robot Learning for Interaction and Assembly*”. He presented an overview of the latest research of his group in Oxford into robot learning, covering a range of topics including object-centric modelling for robot perception, exploring avenues in skill acquisition, robot planning using generative modelling, robot assembly, and machine introspection. The event attracted ~32 people including ~11 IEEE members. Although Jack presented online live from the UK, we had a good audience attending in person from the QUT Centre for Robotics.

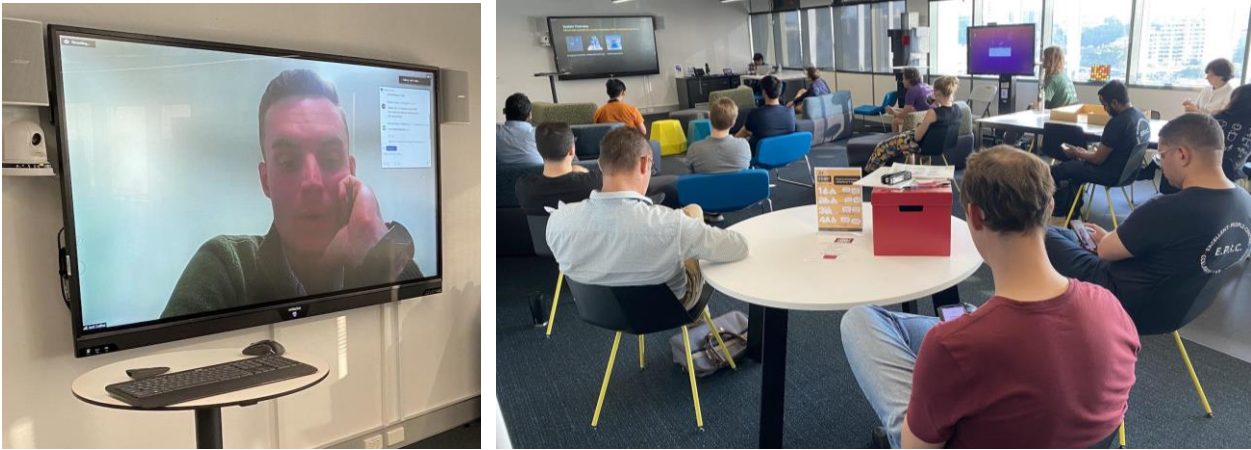


Fig. 1: Audience attending Dr. Jack Collins' seminar at QUT's Centre for Robotics

Event 3: 27 October 2023

We co-hosted Dr. Ahalya Ravendran from the University of Sydney to give a seminar on the topic of "Robotic Burst Imaging for Light-Constrained 3D Reconstruction" along with CSIRO. In this talk Dr. Ravendran introduced robotic burst imaging, a novel input scheme designed to enhance vision-based 3D reconstruction for robots operating in low-light conditions. Results of extensive testing using burst imagery captured on both a robotic arm and drones were presented demonstrating significant improvements in low light reconstruction, culminating in an 80% improvement in convergence rate for scenes captured in millilux conditions compared with conventional imaging schemes. It was shown that this work paves the way for exciting opportunities in the field of vision-based 3D reconstruction, enabling robots to operate effectively in challenging low light, without a need for specialised camera hardware. This seminar attracted 22 participants including 10 IEEE members.

Event 4: 6 November 2023

We co-hosted Dr. Jonathan Stock, Director of the National Innovation Centre at the US Geological Survey to give a hybrid seminar along with CSIRO. The topic of the seminar was "US Geological Survey's National Innovation Center: An engine to solve challenges with technology partnerships" and included work they do with NASA Ames as well. There was a strong focus on planetary geology and the limitations to human knowledge on what lies beyond the surface of the moon. He gave details of various studies done from the Apollo mission era to find more data of the lunar subsurface. This talk highlighted the role for remote sensing as well as robotic and autonomous systems in off-world exploration. This event was attended by a total of 60 people including ~40 online participants. There were ~15 IEEE members in the hybrid audience.



Fig. 2: Dr. Jonathan Stock presenting the seminar at CSIRO's Queensland Centre for Advanced Technologies.

Engineering in Medicine and Biology



Alejandro M-Calderon
alej.melendez@uq.edu.au

The EMBS QLD Chapter society started without a committee in 2023. Our committee was formed in August 2023 as result of no having anyone representing this society and the interest of the current committee to keep the EMBS QLD Chapter alive. Our committee was approved in September 2023. In this short period of time, our society has managed to organize/promote two local events (described below). In addition, Our committee was active in the general IEEE RAS/EMBS societies. Our Chair (Dr. Alejandro Melendez-Calderon, also Vice-chair of the RAS/CS QLD society) co-chaired the IEEE RAS/EMBS International Conference on Rehabilitation Robotics 2023, within RehabWeek23 in Singapore (24-28 Sept, 2023). Our Vice-chair (Dr. Camila Shirota) contributed as Associate Editor and best poster award Judge. The whole RehabWeek attracted >1000 participants, with ICORR being the largest conference within the event. Co-chairing the conference involved coordination with 36 associate editors and 11 session chairs, 10 best paper judges and managing 165+ peer-reviewed paper submissions. The involvement of the international IEEE community was significant, with over 282 paper reviewers.

Event 1: September 13, 2023

The Hopkins Centre organizes monthly research seminars under the Hopkins Hour (Research Series). In cooperation with the The Hopkins Centre, we co-promoted the September seminar on Co-designing technology solutions for translation into real-world application. This event hosted three speakers: Dr. Camila Shirota (EMBS Chapter Vice-Chair), Dr. Tenelle Hodson, and Dr. Kelly Clanchy. The research talks followed a Q&A discussion with Paralympian Matt McShane about User-Centred Design. Our event attracted 45 people (incl. 15 IEEE members).

Event 2: November 21, 2023

At the time of writing this report, this event is yet to occur. We are organizing an invited lecture by Dr. Cosima Prahm (Head of research at the Department of Plastic and Reconstructive Surgery at the BG Trauma Hospital Tübingen/University of Tübingen, Germany). In her lecture, "Interfacing clinical research and digital rehabilitation for extremity reconstruction in TechNeuroRehab", Dr. Prahm will talk about innovations in virtual rehabilitation and human-machine-interaction spotlighting the work of the PlayBionic working group at the University Clinic Tuebingen. The event will be hosted at The University of Queensland, and will be promoted as a hybrid event. We are expecting an attendance of ~50+ people.

Power and Energy/Dielectrics and Insulation



Feifei Bai
f.bai@griffith.edu.au

Queensland PES-DEIS Chapter has organised the following events during 2023.

Industry Super Technical Session-1

Topic: Grid-forming Technologies Towards 100% Renewable Energy

This event was hosted on 13 April 2023. We have invited four speakers Wen-Cheng Huang from Tesla, Dr Wei Du from US Pacific Northwest National Laboratory (PNNL), Natasha D'Silva from AEMO, and Dr Sasan Zabihi from Hitachi Energy. The topics are covering "Connecting Grid-forming Batteries in the NEM", "Transient and Dynamic Modeling and Control of Grid-Forming Inverters", "Grid-forming inverters: A Voluntary Specification", and "Advanced Virtual Synchronous Machines". The presentations cover the grid-forming inverter modeling, operation, and control from the simulation to the real operating in Australia. We circulated this event through IEEE eNotice, industry and academia contact email list, and IEEE QLD Section LinkedIn. We have received 248 registrations, the number of participants on the day was 189 including 99 IEEE members and 90 non-IEEE members. During the presentation, we received over 30 questions which are all addressed by the speakers. We have received excellent feedback from the audience. The event flyer and some screen snapshots are shown as below.





2. Industry Super Technical Session-2

Topic: Converter-driven Oscillations in Power Grid with High Renewable Energy Penetration

This event was hosted on 6 June 2023. We have invited four speakers Dr Yi Zhou from Powerlink Queensland, Dr Nilesh from AEMO, Dr Rizah Memisevic from EPEC group, and Mr Yu Su from Energy Queensland. The topics are covering “Practical Experiences of Sub-synchronous Resonances with Inverter Based Renewable Plant”, “Converter-driven interactions in IBR dominated grid”, “Active power oscillation during DC voltage limitation”, and “Reactive Power Oscillation in Weak Grid (distribution network) with IBR”. The presentations cover the technical challenges, solutions and operating experience to solve the converter-driven oscillation problem for both transmission and distribution networks. We circulated this event through IEEE eNotice, industry and academia contact email list, and LinkedIn. We have received 106 registrations, the number of participants on the day was 85 including 56 IEEE members and 29 guests. After the presentation, we had a one-hour networking event. The event flyer and photos are shown below.

2023 IEEE QLD Section PES/DEIS Super Session Series

Converter-driven Oscillations in Power Grid with High Renewable Energy Penetration



OUR INVITED SPEAKERS



Dr Yi Zhou, Principal Engineer
Powerlink Queensland, Australia

Practical Experiences of Sub-synchronous Resonances
with Inverter Based Renewable Plant



Dr Nilesh Modi, Manager
AEMO, Australia

Converter-driven Interactions in IBR Dominated Grid



Dr Rizah Memisevic, Principal Engineer
EPEC Group, Australia

Active Power Oscillation during DC Voltage Limitation



Mr Yu Su, Senior Engineer
Energy Queensland, Australia

Reactive Power Oscillation in Weak Grid (distribution
network) with IBR

IEEE Registration

<https://events.vtools.ieee.org/m/361690>



Time

Seminar: 3pm - 5pm

Networking: 5pm - 6pm

6 June 2023

(AEST Brisbane Time)

Location

Room 46-442

UQ St Lucia Campus

Staff House Road

St Lucia, QLD 4072



3. IEEE PES Distinguished Lecturer Seminar and IEEE PES Membership Promotion Event

Seminar: Advancing Innovation in Grid Resilience and Edge Technologies

By Dr. Jessica Bian, IEEE PES President, Distinguished Lecturer

Dr Jessica Bian is the President of the IEEE PES. She is a visionary leader and architect, has spearheaded electric industry's reliability metrics and grid risk assessment. Currently, she is the Vice President of Grid Services at Grid-X Partners. Before that, she was with the US Federal Energy

Regulatory Commission (FERC), in Washington, DC. Previously, she was the Director of Performance Analysis at North American Electric Reliability Corporation (NERC) in Atlanta, Georgia. Under her leadership, a total of 18 industry-wide reliability indicators were established to determine grid reliability, adequacy, and associated risks. She is widely recognised as a pioneer and trusted world leader in the field.

We circulated this event through IEEE eNotice, industry and academia contact email list, IEEE QLD Section LinkedIn and UQ IEEE PES LinkedIn. The number of participants on the day was around 40 including 80% IEEE member. During the presentation, we received over 20 questions which are all addressed by the speaker. We have received excellent feedback from the audience. The event flyer and some screen snapshots are shown as below.

IEEE PES
Power & Energy Society™

IEEE
Queensland Section
PES/DEIS Chapter

IEEE Power & Energy Society
Women in Power
Queensland Chapter

Topic
Advancing Innovation in Grid Resilience and Edge Technologies

Speaker
Dr Jessica Bian is the President of the IEEE Power & Energy Society (PES). She is a visionary leader and architect, has spearheaded electric industry's reliability metrics and grid risk assessment. Currently, she is the Vice President of Grid Services at Grid-X Partners. Before that, she was with the US Federal Energy Regulatory Commission (FERC), in Washington, DC. Previously, she was the Director of Performance Analysis at North American Electric Reliability Corporation (NERC) in Atlanta, Georgia. Under her leadership, a total of 18 industry-wide reliability indicators were established to determine grid reliability, adequacy, and associated risks. She is widely recognised as a pioneer and trusted world leader in the field.


Dr Jessica Bian
IEEE PES President
Distinguished Lecturer

Date: Tuesday, 20 June 2023
Time: 3pm - 4pm

Location: Room 03-309 Steele Building
UQ St Lucia Campus
Staff House Road
St Lucia, QLD 4072

IEEE Registration Link
<https://events.vtools.ieee.org/m/362888>





**JUMP START AND ADVANCE
YOU CAREER WITH AN
IEEE PES
MEMBERSHIP**

BENEFITS

- **Events** Reduced registration rates to dozens of leading PES regional and global events. Special discounts at PES-sponsored conferences
- **IEEE PES Resource Center** Free access to on-demand technical papers, webinars and online tutorials, Plain Talks, and educational credits (CEUs and PDHs) in the PES-dedicated IEEE PES Resource Center.
- **Magazines** Complimentary digital subscription access to the leading IEEE Power & Energy and IEEE Electrification magazines.
- **Chapter Activities** With 800+ global chapters, there's a local chapter for you to join for free.
- **IEEE Xplore** Additional discounted content available in the IEEE PES digital library in IEEE Xplore.
- **Find Jobs** Find jobs for student members through the use of PES-Careers—a free on-line career-matching service (www.pes-careers.org)

HOW TO JOIN PES

You must first be an IEEE member*:

- **Student Member** \$13.5 per year
- **Professional Member** \$80.50 per year

If you have an IEEE member, you can join PES with following fees*:

- **Student Member** First year **FREE**, \$1 for renewal
- **Graduate Student Member** First year **FREE**, \$18 for renewal
- **Member** \$35 per year

Click the registration link or scan the QR code to join us now:
<https://www.ieee.org/membership/join/index.html>

* Pricing is in US dollars.

For more information see:
<https://ieee-pes.org/>

IEEE QLD Section PES/DEIS Chapter Membership Development

4. Women in Power education activity

IEEE Queensland Section PES-DEIS Joint Chapter organised a joint hybrid event led by Dr Indira Alcaide Godinez from the Australian Energy Market Operator (AEMO) to introduce students to PSS/E, a high-performance and sophisticated power system simulation software extensively employed in both industrial projects and academic research. This event was a collaboration with PES Women in Power, UQ IEEE Power and Energy Society Student Branch and GU IEEE PES Student Branch on 11th August 2023, with around 20 in-person attendees in UQ and GU facilities and 20+ online attendees. This event allowed students and industry professionals to unlock more possibilities for your future learning and work in power system analysis.



PSS/E Training Seminar - Introductory

This Introductory Includes

- Power Network Model
- Slider Diagram
- Power Flow
- Dynamics

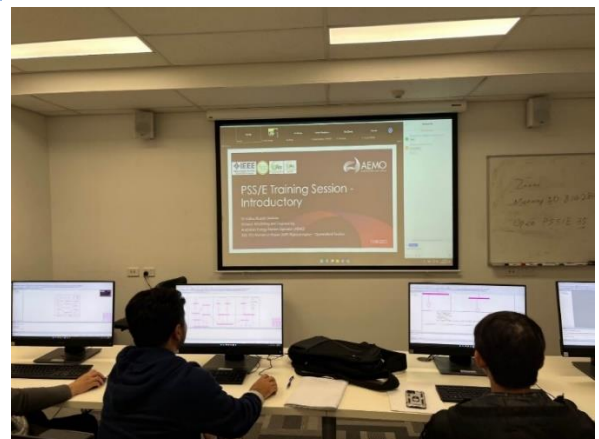
By
Dr Indira Alcaide Godinez
Australian Energy Market
Operator (AEMO)

PSS/E is a high-performance transmission planning and operations software for the power industry. Now mastering PSS/E is one of the most popularly required **SKILLS** in **JOB MARKET** !

**Time: 15:00 -17:00 pm,
11th Aug (Friday), 2023**

**Location: Industry 4.0 Energy Test Lab
Room 50-s202, Hawken Building
UQ, St. Lucia Campus**

**Limited 16 Seats Available
Scan and register now!**



5. IEEE PES Booth in CIGRE International Symposium 2023, Cairns

Dates: September 3, 2023, to September 7, 2023

Booth Management: IEEE Queensland Section PES/DEIS Joint Chapter, UQ IEEE PES Student Branch

Duration: Full length of the conference

Our IEEE PES booth at the CIGRE Symposium attracted a diverse global audience. The participation of IEEE PES in the CIGRE International Symposium for the first time as a booth exhibitor in Australia was a resounding success. Not only did it provide an excellent platform for engaging with a wide array of professionals, but it also served to strengthen the society's reputation and membership base. The strong interest expressed by both the academic and industrial sectors points to promising future collaborations and growth for IEEE PES. We consider this participation to be a significant milestone for our UQ IEEE PES Student Branch, and we're optimistic about leveraging the connections made during the event for future activities and collaborations.





6. Seminar by Prof Anjan Bose for “Evolution of Grid Operation and Control”

On 11 September 2023, IEEE Queensland Section PES/DEIS Chapter host Prof Anjan Bose for a seminar on the topic of “Evolution of Grid Operation and Control” with about 50 attendees from industry and academia.

We are pleased to host Prof Anjan Bose, Regents Professor and the Distinguished Professor of Electric Power Engineering at Washington State University in Pullman, Washington. Prof Bose worked in the electric power industry as well as academe for over 40 years. Prof. Bose is a Member of the US National Academy of Engineering and a Foreign Member of both the Indian and the Chinese National Academies of Engineering. Prof Bose met the academic staff and PhD students of Power, Energy & Control Engineering Discipline at the UQ School of Electrical Engineering and Computer Science. We have had very lively discussions about our current research activities. Prof Bose has shared his thought with us and enlighten the audience on challenges towards “energy transition”.



7. Webinar by Prof C.Y. Chung for “Advanced Prediction Techniques Applied to Smart Grids”

IEEE Queensland Section PES-DEIS Joint Chapter hosted Prof C.Y. Chung, the Head of Department and Chair Professor of Power Systems Engineering at the Hong Kong Polytechnic University (HKPolyU), for an amazing Webinar on 7th July 2023. His presentation was on 'Advanced Prediction Techniques Applied to Smart Grids'. His presentation was attended by 20+ industry engineers, academics, and students. He presented a brief review of the recent outcomes of some smart grid challenges addressed by novel prediction techniques at the generation, transmission, and distribution levels. We had a wide range of attendees, totaling 21 IEEE members and non-members.

Real-time Thermal Rating (RTTR) vs. Static Thermal Rating (STR)

Measuring RTTR

- Relieve congestion
- Avoid/defer new investment
- Lower risk (avoid blackouts)

Usually

Sometimes

Static Thermal Rating (STR)

- Inaccurate
- Conservative

Heat balance equation

- Joule & Magnetic Heating (P_J), Solar Heating (P_S)
- Convective Cooling (P_C), Radiative cooling (P_r)
- CIGRE, IEEE

$$P_J + P_S = P_C + P_r$$

Affecting factors

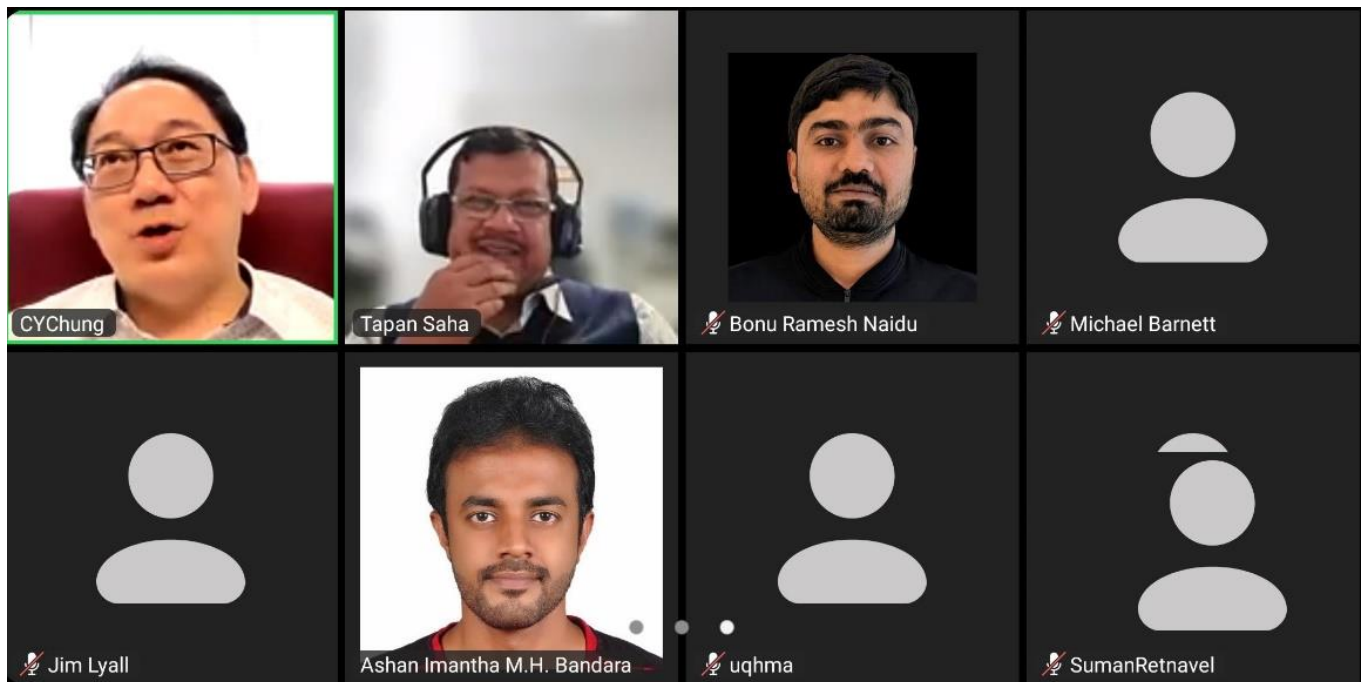
- Solar radiation
- Wind speed
- Wind direction
- Ambient temperature

Source: CIGRE standard

IEEE PES UNIVERSITY

IEEE

Advanced Prediction Techniques Applied to Smart Grids by Prof. C. Y. Chung



8. 2023 IEEE PES Day

Our chapter collaborated with the IEEE PES UQ student branch to celebrate the IEEE PES Day 2023 with the topic of “Powering a Climate Safer Future” on 20 April 2023. The detailed activities are shown in the following flyer and photo.

IEEE PES Day 2023



SCAN TO JOIN FREE
registration by 17 April 2023

- **Quiz Competition – Know IEEE better and have fun**
 - Joint competition
 - Totally \$100 awards (1st \$50, 2nd \$30, 3rd \$20)
- **BBQ Celebration – Connect with the community**
 - BBQ in the St. Lucia community garden
 - BBQ with local organic food
- **Plant Activity – Make something green**
 - Free succulents share with participants
 - Decorate the work environment
 - Potential social media promotions
- **Host: IEEE QLD Section PES&DEIS Joint Chapter & IEEE PES UQ Student Branch**
- **Time: 17:00-19:00 20th April 2023**
- **Location: Community garden, UQ St. Lucia Campus**



IEEE PES Day 2023
Powering a Climate Safer Future!

St Lucia Community Garden
355 Sir Fred Schonell Dr,
St Lucia QLD 4067

IEEE
IEEE Queensland Section
PES&DEIS Joint Chapter

IEEE PES
Power & Energy Society

THE UNIVERSITY OF QUEENSLAND
AUSTRALIA



9. IEEE Queensland Section is pleased to help you to become an IEEE Senior Member

This event was on 3 Oct 2023. Our Chapter is the host to support the IEEE Senior Membership development and 2023 IEEE Day Celebration by preparing the event flyer, event promotion through social media, and organize the BBQ. We circulated this event through vtools and our chapter LinkedIn. We have received 31 registrations, the number of participants on the day was 27. During the event, we received over 8 members would like to apply for the senior membership with the support of our section senior members. The event flyer and some activity photos are shown as below.

IEEE DAY 2023



Become an IEEE Senior Member



Senior Membership Elevation & BBQ

Bring your CV and become a senior member!

Time: 5pm-6:30pm, 3 October 2023

Venue: St Leo's Catering, College Rd, St Lucia, QLD 4067

Registration: <https://events.vtools.ieee.org/m/374150>

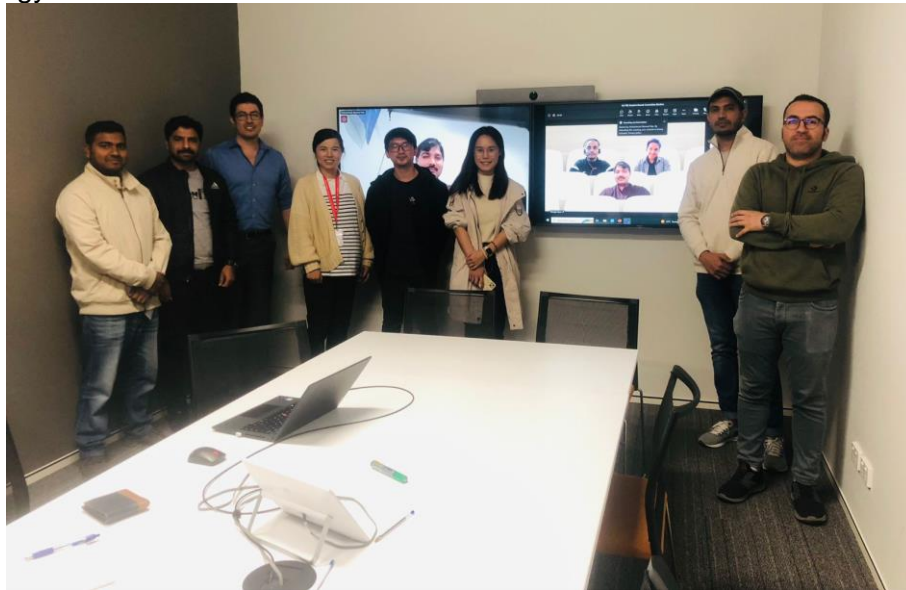
(Please register for the event for catering purpose.)



10. Initiate the Griffith University PES Student Branch

We established the very first IEEE PES Griffith University student branch in May 2023 and we hosted the first branch officer election on 31 May 2023 at the Nathan campus of Griffith University. Dr Feifei Bai is the branch advisor and Dr Hugo Espinosa is the branch counsellor. The executive committee members are Yue Qu (Chair), Hamza Mubarak (Vice Chair), Muhammad Naveed Naz (Secretary), Simon Yao (Treasurer), and Muhammad Ajmal Khan (Media officer). After the election, we discussed the PES member development plan and event development. We are expecting more activity involvement and development from Griffith student PES members.

The primary focus of the branch is to create a platform that fosters collaboration, knowledge sharing, and professional development in the power and energy domain. We believe that by bringing together individuals with a shared passion, we can amplify our collective potential and contribute to shaping a sustainable energy future.



11. 2023 Conference Travel Award

Six students have received the travel award as IEEE PES Graduate Student Member with an accepted paper to be presented during the conference. The student Hankun Cui from The University of Queensland received the 2023 Australasian Universities Power Engineering Conference (AUPEC) travel award with AUD 500. Five PhD students have received 2023 IEEE International Conference on Energy Technologies for Future Grids (IEEE ETFG 2023) travel award with AUD 500 for each including Ge Zhang (The University of Queensland), Jiajie Feng (The University of Queensland), Nafis Ahmed Chowdhury (Griffith University), Hamza Mubarak (Griffith University), and Ahmed Amirul Arefin (Griffith University).

12. IEEE PES Queensland Chapter 2022 Outstanding Engineer Award and IEEE PES Queensland Chapter 2022 Outstanding Volunteer Award

IEEE Queensland PES/DEIS Chapter called for nominations from the Chapter Members for these 2022 awards. Two nominations were received for the IEEE PES Queensland Chapter 2022 Outstanding Engineer Award and their names will be announced during the AGM dinner. One is for less than 15 years' experience engineer and the other is for more than 15 years' experience. One nomination was received for the IEEE PES Queensland Chapter 2022 Outstanding volunteer award, which will be also announced during the AGM Dinner.

13. 2022 IEEE PES High Performing Chapter Program (HPCP) Award

IEEE Queensland PES/DEIS Chapter received the 2022 IEEE PES High Performing Chapter award of US\$730. 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.

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

Region 10 IEEE PES Chapter Chair Meeting will be held in Chiang Mai, Thailand on 6 December 2023. Dr Feifei Bai, Chair of the PES/DEIS Queensland Chapter will attend this event with presentation. Two PES student branch chairs Ge Zhang from The University of Queensland and Yue Qu from Griffith University also received the IEEE PES support to attend the chair training meeting to be held in Chiang Mai, Thailand on 6 December 2023.

15. Lord Mayor's Convention Trailblazer Grant

The PES/DEIS Chapter nominated Dr Nadali Mahmoudi to apply for the Lord Mayor's Convention Trailblazer Grant with \$5,000 and Dr Mahmoudi has successfully secured this grant to attend the IEEE PES conference. The grant, an initiative of the city's official Convention Bureau, Brisbane Economic Development Agency (BEDA), empowers the city's talented, curious, and high-performing professionals and researchers to make their mark by attracting valuable industry conferences to Brisbane. It also brings an opportunity to attend a leading international conference, make a positive impact on power industry, and cultivate valuable networks with the goal of positioning Brisbane as a world-class host city for future conventions and business events.

16. IEEE MGA Volunteer Leadership Training (VoLT) Program

We congratulate our chair, Dr Feifei Bai for successfully completing the 2022 VoLT program and receiving the VoLT certificate in 2023. The certificate is shown below.



Microwave Theory & Techniques/Antennas & Propagation Societies



Hugo Espinosa
h.espinosa@griffith.edu.au

Welcome to the Microwave Theory and Techniques/Antennas and Propagation (MTT/APS) Chapter. Since the beginning of 2023, we have hosted and co-hosted several online and in-person technical seminars from the MTT/APS communities. Such seminars were delivered by experts from industry, academics, and Distinguished Lecturers.

The online delivery of some of the seminars allowed us to collaborate with other Australian Chapters. The host chapter organised the event, and all other Australian chapters supported it by promoting it within their networks and assisting, as required. These collaborations have resulted in higher rates of attendance, participation, engagement, and networking opportunities. Special thanks to the following Chapter Chairs and their teams: Yang Yang (NSW), Fatemeh Babaeian (Victoria), Shengjian Jammy Chen (SA), Tao Huang (Northern Australia), and Greg Durnan (ACT), for their support in co-hosting our events, and for inviting QLD to co-host theirs.

Eight events have been organised so far, with an upcoming in-person seminar scheduled for November 14th, 2023. The list of presentations is as follows:

1. Prof Shiyoshi Yokoyama (Kyushu University, Japan)
"Present and Future Spin-on Electro-optic Waveguide Modulator"
 Online March 24, 2023
2. Prof Suramate Chalermwisutkul (King Mongkut's University of Technology North Bangkok, Thailand)
"Antenna, Microwave and Electromagnetic Research for Smart Cities"
 Online April 20, 2023
3. Dr Rod Waterhouse (Octane Wireless, USA)
"5G and Beyond: A Diverse Set of Antenna Solutions for a Diversity of Requirements"
 Online April 26, 2023
4. Dr Weijie Gao (University of Adelaide, Australia)
"Terahertz communications accelerated by photonic technologies"
 Online May 3, 2023
5. Dr Syed Akbar Raza Naqvi (The University of Queensland, Australia)
"Dielectric Properties of Healthy Human Skin and Challenges towards Dermal Anomaly Detection using EM Techniques"
 Online June 16, 2023
6. Prof Jae-Sung Rieh (Korea University, South Korea)
"Terahertz Integrated Circuits and Applications"
 Online August 10, 2023
7. Prof Yi Huang (University of Liverpool, UK)
"Wireless Energy Harvesting and Power transfer from RF to Optical Frequencies"
 Online September 27, 2023

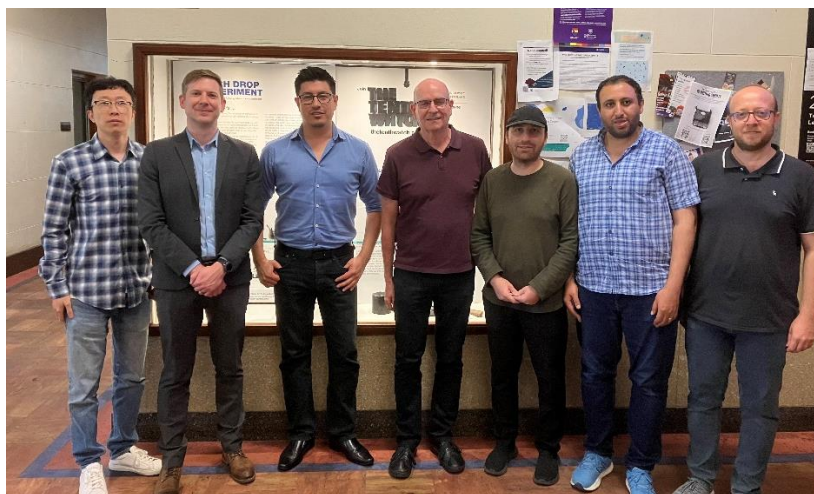
8. A/Prof Pei-Yuan Qin (University of Technology Sydney, Australia)
"E-Band Multibeam Transmitarrays for Unmanned Aerial Vehicle Aided Communications"
 Online October 24, 2023

9. Prof Jeffrey Nanzer (Michigan State University, USA)
"Distributed Phased Arrays: Challenges and Recent Progress"
 In-person November 14, 2023

The presentation delivered by Dr Akbar Naqvi 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://ieeeps.org/committees/yp>.



In November 14th, 2023, we had the pleasure to host a Distinguished Lecturer at The University of Queensland in Brisbane. Prof Jeffrey Nanzer from Michigan State University, USA, visited all Australian Chapters delivering a presentation on Distributed Phased Arrays: Challenges and Recent Progress. Below are some of the photos of Prof Nanzer's presentation, including a social dinner with Prof Christophe Fumeaux, Dr Konstanty Bialkowski, and Dr Lu Zhang.



In July 2023, Chapter Chair Dr Hugo Espinosa was awarded the 2023 IEEE APS Donald G Dudley Jr Undergraduate Teaching Award with the following citation:
 "In recognition of his innovations in teaching and curriculum development, successfully equipping emerging generations of engineers with the skills needed to address important sustainability challenges"

This is a prestigious international award given once a year by the IEEE Antennas and Propagation Society (APS). The Award recognises outstanding and original contributions to undergraduate education in the general field of electromagnetics. More information about the award can be found here: <https://ieeeps.org/awards/winners-of-2023-ap-s-awards-announced>. The award was presented at the IEEE APS Conference Awards Ceremony in July 2023 in Portland, USA (<https://2023.apsursi.org>). During the conference in Portland, Dr Espinosa was invited to be part of the IEEE APS Young Professionals Panel Discussion, where APS awardees shared highlights of their technical achievements, career and life paths, thoughts, reflections, and guidance (https://2023.apsursi.org/yp_program_events.php). Below are photos of the IEEE APS Awards ceremony in Portland.



The year is almost coming to an end, and we would like to thank the QLD Section for their invaluable support throughout the year. We look forward to organising more interesting presentations in the near future. I would also like to thank Vice Chair Dr Akbar Naqvi and Secretary Dr Lu Zhang for their invaluable contributions, hard work, and dedication to the Chapter.



University of Queensland IEEE Student Branch

Committee:

Chair: Deren Teo (deren.teo@uq.net.au)

Vice Chair: Wendi Ma (wendi.ma@uq.net.au)

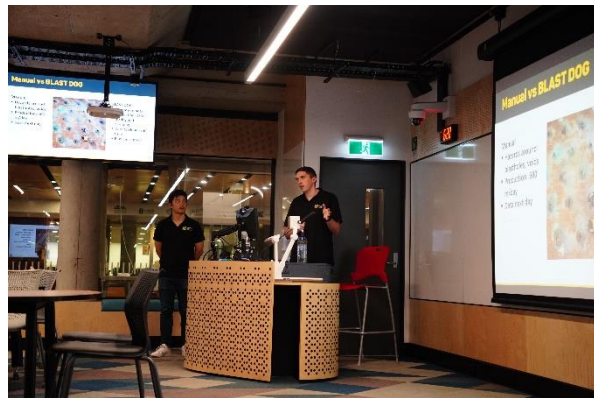
Secretary/Treasurer: Yuanlong Jiang (yuanlong.jiang@uq.net.au)

Counsellor: Richard Yan (ruifeng@eecs.uq.edu.au)

This has been an eventful year for the IEEE UQ Student Branch, having hosted four technical events and a membership drive, most of which were resounding successes. Next year, we will be handing over the reins to a fresh committee and hope they will be able to continue and build upon this success.

Our events kicked off in March with the Queensland Section's own Vaughan Clarkson representing his company, Whipbird Signals. Vaughan gave an insightful presentation on his career as an engineering consultant and the importance of being a registered engineer.

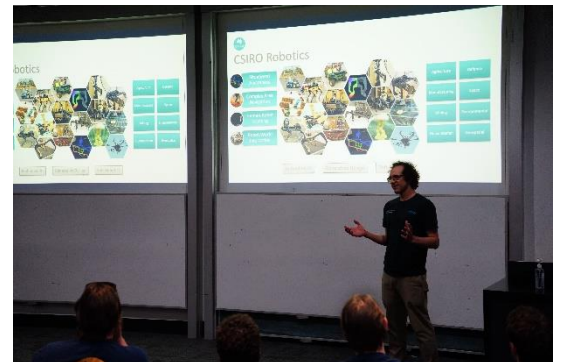
In April, our branch hosted the company Universal Field Robots (UFR) in collaboration with UQ MARS. UFR introduced their work and how they automate heavy machinery for mining and defense applications to deliver highly efficient solutions for their clients. This event was very popular among the mechatronic cohort, with one of our highest attendances to date.



We restarted in Semester 2 with a membership drive on UQ Market Day, one of the main events of UQ's orientation week. This happened in coordination with the IEEE UQ PES Student Branch and IEEE HKN Mu-Kappa Chapter. Though as a non-UQ Society we weren't able to secure a Market Day stand, we were able to set up in the Hawken Building (50) near the First Year Engineering Learning Centre, and successfully recruited a number of new student members.

Our success continued in August with a talk on AI people recognition, delivered by UQ's esteemed Professor Brian Lovell, co-hosted by UQCS. Brian's presentation was eye-opening in the many ways AI is already used to identify people, both conspicuously and discretely.

Finally, we concluded an eventful year with a technical introduction to soft robotics, delivered by Josh Pinski and Xing Wang from CSIRO Data61, once again co-hosted by UQ MARS. Josh and Xing showcased the latest advancements in soft robotics, discussed their potential applications, and provided insights into the future of soft robotics research. They also brought along many props for the attendees to experience soft robotics up close and personally.



Next year, though our present committee will have graduated, we wish the succeeding committee the best in growing student awareness of IEEE and encouraging students to pursue IEEE-relevant fields. Our student branch has made strong connections in recent years with several relevant UQ Societies, and hope that these connections continue to strengthen and prove mutually beneficial in the future.

Griffith University IEEE PES Student Branch

Committee

Chair: Yue Qu

Vice Chair: Hamza Mubarak

Secretary: Muhammad Naveed Naz

Treasurer: Weichong Yao

Web master: Muhammad Ajmal Khan

Advisor: Dr. Feifei Bai

Student counsellor: Dr. Hugo Espinosa

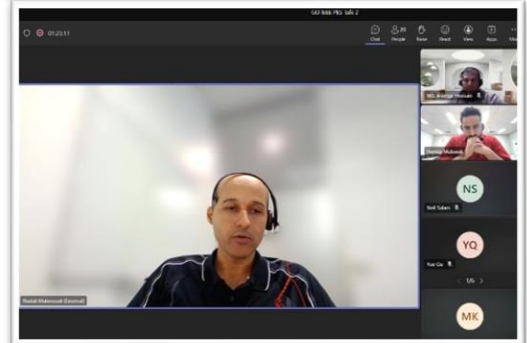
Griffith University IEEE PES Student Branch, as a new member of IEEE Queensland Section, had a milestone and successful year. Within six months, we built strong partnerships with several organizations in the IEEE Queensland section, co-organizing a seminar event and a PSS/E training event. Subsequently, we successfully held a series of GU IEEE PES Talks independently, which were recognized and welcomed by many students.

- On 20 June 2023, we co-organized a seminar titled "Advancing Innovation in Grid Resilience and Edge Technologies" with IEEE QLD Section PES/DEIS Chapter, IEEE PES Women in Power QLD Chapter, and UQ IEEE PES SBC. During this event, Dr. Jessica Bian, the President of IEEE Power & Energy Society, emphasized the importance of staying at the forefront of technological advancements to meet the evolving challenges faced by the power and energy sector. Additionally, she discussed the benefits of IEEE PES Membership, particularly from an industry perspective, and underscored the value of standards and the IEEE resource center. Her fantastic presentation attracted a diverse audience of over 40 industry engineers, academics, and students.
 
- On 11 August 2023, we co-organized a PSS/E training event with UQ IEEE PES SBC. The event took place simultaneously at GU Nathan 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 2023, we successfully held our first independently organized event - Griffith University IEEE PES Talk. This event was held both online and in person, divided into two parts: a seminar and networking session. In the seminar segment, we invited Dr. Jinhui Wu, a Research Fellow at University College London (UCL), to speak on "Predictive Control and Its Applications." He introduced the principles of predictive control in a simple and concise manner, using multiple examples to demonstrate the application prospects of predictive control. His presentation greatly stimulated the audience's interest in predictive control. During the networking session, all on-site participants enjoyed delicious pizza and drinks while communicating and exchanging ideas, which helped establish good relationships and potential resources for
 



all participants and professionals. This event has been well-received and will continue as a series of activities.

- On 7 November 2023, we held the second Griffith University IEEE PES Talk and invited two distinguished professionals in the electrical field to give speeches, Dr. Md Alamgir Hossain (a Research Fellow at Griffith University) and Dr. Nadali Mahmoudi (an Electricity Network Advisor at EPEC Group). Dr. Alamgir emphasized the significance and importance of hydrogen-based power systems in achieving a sustainable energy future and shared insights into Australia's first Hydrogen DC microgrid lab, presenting a case study of the Sir Samuel Griffith Centre's hydrogen-renewable power system. Dr. Nadali provided an overview of NEM transitioning to renewable energy and emphasized the pathway, challenges, and opportunities. This talk provided valuable guidelines for advancing existing technology and transitioning towards more sustainable power systems and research facilities. Students and many professionals enjoyed this event and were very active in asking questions.



University of Queensland IEEE PES Student Branch

Committee

Chair: Ge Zhang

Vice-Chair: Ning Ma

Secretary: Jiajie Feng

Treasurer: Shijie Yao

Advisor: Professor Tapan Saha

At the very beginning, profound gratitude is owed to Professor Tapan Saha, Dr. Feifei Bai, and Dr. Nilesh Modi for their unwavering support and immense contributions that significantly propelled our branch's projects and initiatives this year. I also want to express deepest appreciation to my committee members who have been a cornerstone in the successful execution and enhancement of our branch's operations and activities.

This year marked substantial progress in our digital presence. A pivotal achievement was establishing a LinkedIn platform that remarkably broadened our outreach. Our efforts have cultivated an environment where our posts have achieved a record high of 130 daily visits, reflecting the enhanced engagement and visibility of our branch's activities and initiatives.

Strengthening bonds and fostering collaborations have been a central theme this year. We proudly enhanced our cooperation with sibling branches such as UQ IEEE SBC and newborn Griffith University IEEE PES SBC. Together, we embarked on various enriching initiatives that bolstered our communal ties and enhanced our collective learning and growth.

In March, the IEEE PES Day celebration, was a monumental success with participation from members across the Queensland region. The event included engaging activities such as Quiz competitions and a delightful barbecue in the St Lucia community garden, fostering a relaxing and enjoyable social platform for our members.



Figure. PES Day Celebration

Throughout the year, we efficiently managed and promoted several academic lectures organized by the IEEE QLD Section PES & DEIS Chapter, playing a crucial role in the successful execution of these enriching events. Our branch had the honor of hosting eminent scholars and high-level administrators, including IEEE PES president Dr Jessica Bian, and Professor Anjan Boes. Their presence laid a robust foundation for the sustainable development of our SBC. In collaboration with Women in Power and Griffith University SBC, we successfully conducted a PSSE training course, further contributing to our community's professional development.



Figure. Visit of Prof. Anjan Bose



Figure. Visit of Dr. Jessica Bian



Figure. IEEE QLD Section PES & DEIS Chapter Super Session Series

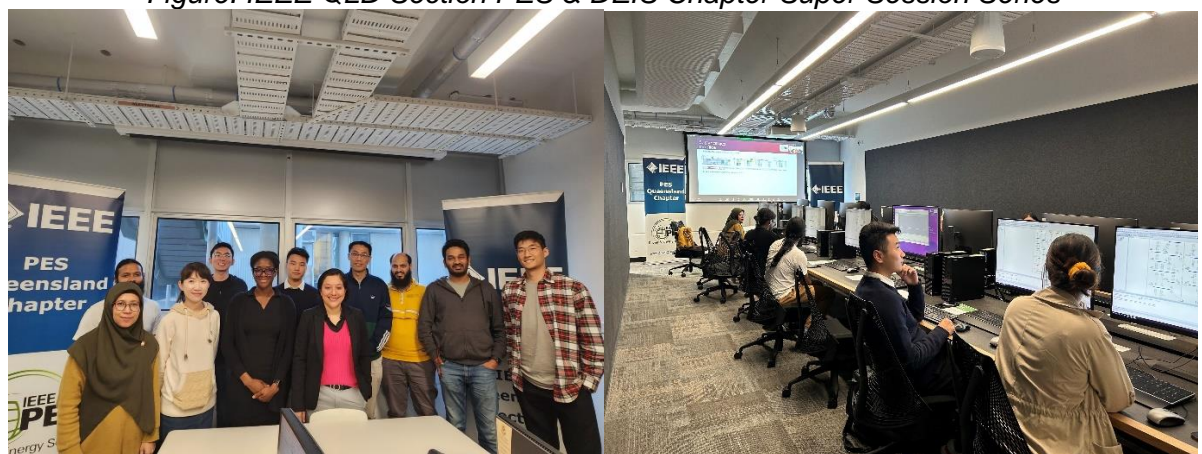


Figure. PSSE Training Event by Dr. Indra from AEMO



Figure. Hybrid Membership drive event in The University of Queensland with UQ IEEE SBC

A pioneering accomplishment this year was establishing a booth at the CIGRE Cairns, marking the first time the IEEE PES had its dedicated space at an academic conference in Australia. This innovative step has reinforced our presence and influence in the scholarly community.



Figure. IEEE PES Booth in CIGRE 2023

We are also proud to announce that we are selected to be sending representatives to the R10 IEEE PES SBC Leader In-person Training in Chiang Mai, Thailand, in December 2023. This opportunity will possibly enable us to contribute at the R10 IEEE PES SBC Management Committee after the training.



Figure. Invitation from IEEE R10 PES SBC

In conclusion, this year has been conducted by remarkable achievements, resilient collaborations, and innovative strides forward. We also hold 100% confidence in the future prosperity and development of the new committee and UQ IEEE PES SBC.

IEEE HKN Mu-Kappa Chapter

Committee

Chair: Raveena Wadhwani

Vice Chair: Grace Margaretha

Secretary: Linfeng Liu

Media Officer: Zachary Sean Grice

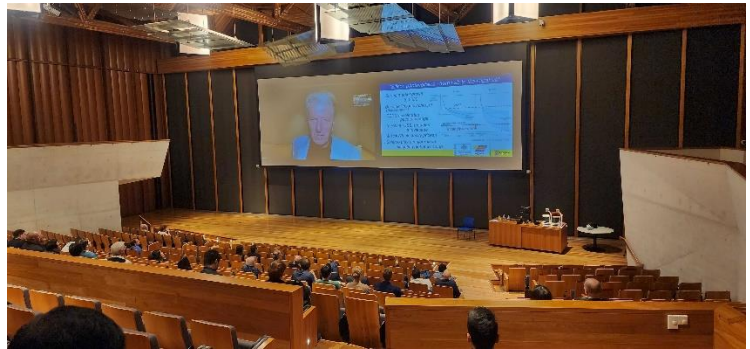
Treasurer: Yunda Xu

Faculty Advisor: Professor Tapan Saha

Website: <https://hkn.ieee.org/hkn-chapters/all-chapters/mu-kappa-chapter>

Professor Martin Green Technical Talk

Professor Martin Green, Director of the Australian Centre for Advanced Photovoltaics (ACAP) and Scientia Professor at UNSW, delivered a presentation on photovoltaic advancements to an audience of 69 in-person attendees and 3 online viewers. Notable attendees included Professor Michael Bruenig, the Head of UQ's Information Technology and Electrical Engineering School, and 22 IEEE members. Professor Green shared insights into his 50-year journey in photovoltaic research, discussing the evolution from record-breaking solar cell efficiency to the ongoing search for new materials to enhance multi-layer cell efficiency. He also touched upon the cost drivers and market forces in solar cell production, highlighting the remarkable decrease in production costs and the role of solar energy in addressing climate change, particularly in emerging economies. The event also provided refreshments as an opportunity for networking, making it an informative and engaging gathering.



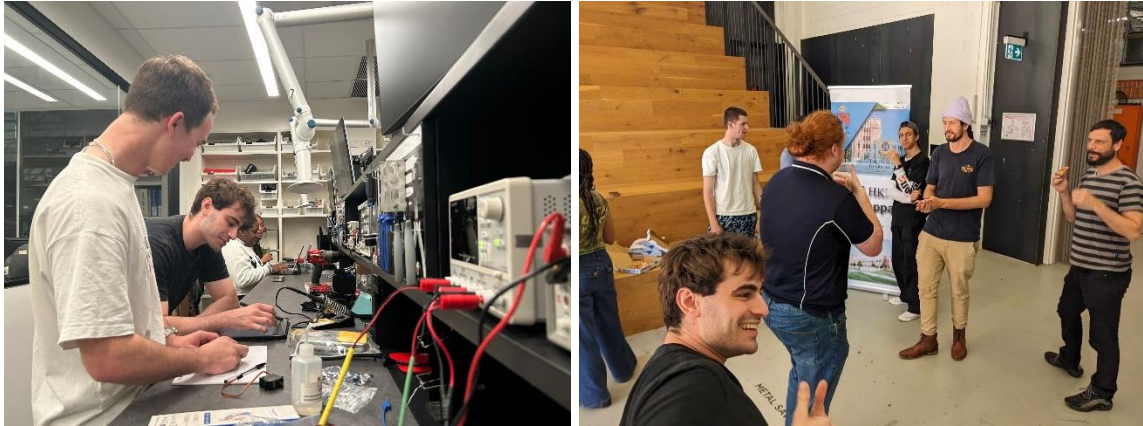
IEEE Membership Drive

The recent IEEE Membership Drive, in collaboration with the IEEE UQ Student Branch and IEEE PES UQ Student Branch, was a successful event held at the Hawken Engineering Building at the University of Queensland. It effectively communicated the advantages of IEEE HKN membership, with informative flyers capturing attendees' curiosity. The partnership between these organizations showcased their unity in promoting academic excellence, leadership, and professional growth. A few students expressed interest in joining IEEE, recognizing the unique networking opportunities and leadership programs. In summary, the event achieved its goal of raising awareness about the benefits of IEEE membership through visually appealing flyers and engaging interactions, attracting a cohort of prospective members.



Control Systems Demonstration and Arduino Help Session

This year, we hosted two Introduction to Arduino sessions, primarily for first-year undergraduates but open to all students. These sessions repeated a previous year's event and covered Arduino basics, the ATmega328, power distribution, and practical demonstrations of logic implementation in the Arduino IDE, such as DC motor control and light-following or IR-remote-controlled servo mechanisms toggled by a button. Additionally, Mu Kappa organized a demonstration, targeting first-year project students but open to others, focusing on the ATmega328 on Arduino boards, power principles, programming, library usage for sensor and actuation systems, and simple control system design.



Founders Day Celebration

The IEEE HKN Founders' Day celebration was a memorable event that paid tribute to the organization's visionary founders while uniting members in a spirit of academic excellence and professional growth. Attendees came together to commemorate the organization's founders over pizzas and engaging conversations.



IEEE-HKN Student Leadership Conference (SLC)

Zachary Grice, recording secretary, attended the SLC on behalf of the University of Queensland Mu Kappa chapter, and experienced the breadth of opportunities available within the association. He met with many different members from all across the world, building networks that will greatly improve the connectedness of the Mu Kappa chapter to other chapters.

Zachary took part in many of the events offered, on the first day, learning about EPICs in IEEE, and how to engage in the many opportunities offered throughout that program. After this workshop a reception was held for networking, which allowed many chances to build connections.

The second day he attended the workshop: Power Conversion and Sustainability for a Clean Energy Future presented by the IEEE Power Electronics Society, learning how our industry is changing for the future and looking towards cleaner energy. This was followed by a recruitment fair where many employers and graduate programs were showcased. The next workshop attended: Our Chapter Needs Money: Finding Funding and Applying for Chapter Grants showed how to effectively engage in fundraising and applying for chapter grants, specifically the Chapter Support Grant.

Time was then made for Lunch and a Group photo, then another workshop that was attended: Passing the Gavel: Successful Officer Transitioning, which provided information on a smooth transition of the leadership group within a chapter and a framework document to use as a guide which will be very useful for the chapter. Following this the recruitment fair was opened up again where Zachary engaged further with the opportunities offered by the community. Then another workshop was attended: Leveraging Resources: Our Department, University, IEEE, and Beyond which showed how to better engage with resources surrounding the chapter.

The night finished with a dinner and awards banquet where many great achievements were showcased with students and members being shown gratitude for their achievements. Our chapter successfully achieved and was awarded the Key Chapter 2022-2023 and also a prize for travelling the furthest out of any chapter.

The final day closed out the events with breakfast followed by region meetings with Zachary taking part in the regions 7, 8, 9 and 10 meeting, which was also attended by the Politecnico Di Torino, Mu Nu chapter of Italy. This chapter was founded on the same day as Mu Kappa and this meeting allowed both chapters to achieve a higher level of camaraderie which will carry on long after the SLC.

Overall this event will be majorly beneficial to not only Zachary's future prospects, but also the Mu Kappa chapter as a whole.

