

Institute of Electrical and Electronics Engineers  
Queensland Section (ABN 67 431 648 974)  
[r10.ieee.org/queensland](http://r10.ieee.org/queensland)

# IEEE QUEENSLAND SECTION NEWSLETTER

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Newsletter editor: Mike Robinson (blackmagic@computer.org)

## In this issue:

Newsletter editor's report . . . . .	2
Aerospace and Electronic Systems Chapter . . . . .	3
Microwave Theory and Techniques/Antennas and Propagation Chapter . . . . .	6
Power and Energy & Dielectrics and Electrical Insulation Societies Chapter . . . . .	8
Eta Kappa Nu Society . . . . .	14
Life Members Affinity Group . . . . .	16
Bits and Pieces . . . . .	17
Queensland Section Office Holders 2023 . . . . .	18

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# Newsletter editor's report



**MIKE ROBINSON**  
blackmagic@computer.org

Hello, and welcome to the latest edition of IEEE Queensland Section's newsletter.

Firstly I must offer my apologies for the late production of the newsletter.

I last produced a newsletter in 2015. At that time I was expert in the use of  $\LaTeX$ , the typesetting program with which the newsletter has been produced since July 2013.

The first  $\LaTeX$  newsletter was produced by Bob Ellen, who laid the foundations for the present format. When I assumed the newsletter editor position on a temporary basis in 2014 I expanded the format, adding names and photos of chapter chairs at the top of each chapter report.

Most of the delay in getting this edition published was brought about by my search for the source documents that made up the editions I published in 2014. I reasoned that it would be easier to modify one of those editions rather than go through the process of learning how to use  $\LaTeX$  again.

After three weeks searching through multiple backup disks I finally found the source documents for 2014.

$\LaTeX$  is a markup language, similar to HTML. It is also a cantankerous programming language, and like any programming language bugs creep in and have to be eradicated, adding further production delays.

However, we're back on the road again, and I hope readers will enjoy this newsletter, brief as it happens to be.

I have made two changes to the current newsletter format. One is the addition of the Queensland Section Office Holders at the end of the newsletter. This section of the newsletter was cobbled together over several days and from several sources; it was the major contributor to production delays. Please read it carefully if you expect your name and e-mail address to appear on its pages. If your name is not there when it should be there, or is there when it shouldn't be there, please let me know as soon as possible.

The second addition is a new feature named **Bits and Pieces**. This will include newsworthy items that don't require a full article, such as dates of the Annual General Meeting, or awards granted to Section members. Please feel free to contribute short informative items in the future.

In the past the newsletter was sent to Queensland Section officers only. From this newsletter on, all financial members of the Queensland Section will receive a copy of the newsletter. This important change will ensure that all members of the Queensland Section will receive news of Section and Chapter activities on a regular basis.

In conclusion I would like to thank everyone who contributed to this newsletter. I hope future editions will have more contributors.

# Aerospace and Electronic Systems Chapter



**VUAGHAN CLARKSON**  
v.clarkson@ieee.org

## Committee:

Chair: Vaughan Clarkson

Vice-chair: Robert Kennedy

With 2022 activities not being a complete disaster, I'm continuing a spell as AESS Queensland chapter chair into 2023. I'm very fortunate to be joined this year by Rob Kennedy, who is taking up the position of vice-chair. Readers of this newsletter will remember Rob as a former chair of AESS and a former Section treasurer. He's a dedicated volunteer and highly technically skilled in the AESS domain. Rob is Principal RF Systems Engineer at Gilmour Space.

In November, 2022, we held (for Queensland) an inaugural short course. The topic was "Fundamentals of Radar". The instructor was Prof. Maria Sabrina Greco of the University of Pisa. The course was a success. We attracted 18 attendees, some from interstate. It made a modest surplus. The feedback was very encouraging.

Buoyed by that good experience, Rob and I, in conjunction with the South Australia chapter, are organising a second short course. The topic this time is "Introduction to Tracking and Sensor Fusion". The instructors are A/Prof. Branko Ristic and Dr. Du Yong Kim, both of RMIT University. The dates are Monday and Tuesday, 28th and 29th August. The venue is again the Brisbane Convention & Exhibition Centre at South Bank. I attach a flyer to this report.

The national centrepiece of this year's activities is surely the International Conference on Radar,

Radar 2023. It returns to Australia on its five-year rotation. IEEE Queensland Section is underwriting the conference. Please mark the dates: 6th–10th November. It is taking place in Sydney at the International Convention Centre (ICC) on Darling Harbour. A further incentive to make the trip is that Radar 2023 is being held in conjunction with the giant INDOPAC naval exhibition, also at the ICC.



*Prof. Greco at the lectern*



*Attendees with Prof. Greco*

On the list of things to do this year is to collaborate with the [Association of Old Crows](#). The Old Crows are a technical professional organisation that specialises in electronic warfare. We are

hoping to host a joint event towards the end of the year. Look out for an announcement in the coming weeks!

**AESS Short Course  
Introduction to  
Tracking &  
Sensor Fusion**



**28–29 Aug 23  
Brisbane**

**31 Aug–1 Sep 23  
Adelaide**



**Presenters: A/Prof. Branko Ristic (RMIT)  
Dr. Du Yong Kim (RMIT)**

**Brisbane Convention &  
Exhibition Centre  
Grey St., South Brisbane**

**Innovation House  
Technology Park  
Mawson Lakes Blvd.,  
Mawson Lakes**



# Microwave Theory and Techniques/Antennas and Propagation Chapter



**DR HUGO ESPINOSA**  
h.espinosa@griffith.edu.au

## Committee:

Chair: Dr Hugo Espinosa

Vice-chair: Dr Akbar Naqvi

Secretary: Dr Lu Zhang

Welcome to the Microwave Theory and Techniques/Antennas and Propagation (MTT/APS) Chapter.

I am pleased to welcome two new members to the team: Dr Akbar Naqvi, Research Fellow and IEEE APS Young Professional Ambassador 2023, and Dr Lu Zhang, Research Fellow; both from The University of Queensland. Welcome Dr. Naqvi and Dr. Zhang!

As in the last three years, the online delivery of some of the seminars has allowed us to collaborate with other Australian Chapters. These collaborations result in higher rates of attendance, participation, engagement, and networking opportunities. Special thanks to all Australian Chapters (SA, VIC, ACT, NSW, and NA), for their support in co-hosting our events, and for inviting QLD to co-host theirs.

Four seminars have been delivered so far by experts from industry, academics, and Distinguished Lecturers, with a few more seminars to be scheduled for the remainder of the year. The list of presentations is as follows:

- **Prof Shiyoshi Yokoyama** (Kyushu University, Japan). “Present and Future Spin-on

Electro-optic Waveguide Modulator”. Online March 24, 2023.

- **Prof Suramate Chalermwisutkul** (King Mongkut’s University of Technology North Bangkok, Thailand). “Antenna, Microwave and Electromagnetic Research for Smart Cities”. Online April 20, 2023.
- **Dr Rod Waterhouse** (Octane Wireless, USA). “5G and Beyond: A Diverse Set of Antenna Solutions for a Diversity of Requirements”. Online April 26, 2023.
- **Dr Weijie Gao** (University of Adelaide, Australia). “Terahertz communications accelerated by photonic technologies”. Online May 3, 2023.

The next presentation will be delivered by our Vice-Chair, Dr Akbar Naqvi, as part of the Young Professional Ambassador Program from the Antennas and Propagation Society. Dr Naqvi will talk about “Dielectric Properties of Healthy Human Skin and Challenges towards Dermal Anomaly Detection using Electromagnetic Techniques”. The presentation will be held online on June 16, 2023. More information about the presentation can be found [here](#).

The date and time for the next seminars will be announced in social media platforms and by eNotices.

We look forward to seeing you at our next events!

# Power and Energy & Dielectrics and Electrical Insulation Societies Chapter



**FEIFEI BAI**  
f.bai@griffith.edu.au

## Committee:

Chair: Feifei Bai

Vice-chair: Nilesh Modi

Secretary: Nadali Mahmoudi

Treasurer: David Battersham

IEEE Queensland Section's PES & DEIS Chapter has had a busy time over the last little while organising technical sessions and arranging travel awards.

## Super Technical Session 1

The chapter had its first Super Session on April 13th, which was received very well by industry and academia. The session's focus was on grid-forming technologies to achieve 100% renewable energy. We had four speakers from Tesla, Pacific Northwest National Laboratory, AEMO and Hitachi Energy. The following topics were covered in this session.

- [Connecting Grid-forming Batteries in the National Energy Market](#)
- Transient and Dynamic Modelling and Con-

trol of Grid-forming Inverters – A Transition from Microgrids to Bulk Power Systems

- Grid-forming Inverters: A Voluntary Specification
- Advanced Virtual Synchronous Machines - the most sophisticated forms of Grid-forming mechanisms are critical assets for achieving net-zero power generation

For this session we 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 all were addressed by the speakers. We received excellent feedback from the audience.



**2023 IEEE QLD Section PES/DEIS Super Session Series**  
**Grid-forming Technologies Towards 100% Renewable Energy**

IEEE Power & Energy Society  
**Women in Power**  
 Queensland Section

**OUR INVITED SPEAKERS**

**Mr Wen-Cheng Huang, Tesla, Australia**  
 Connecting Grid Forming Batteries in the NEM

**Dr Wei Du, PNNL, USA**  
 Transient and Dynamic Modelling and Control of Grid-Forming Inverters

**Ms Natasha D'Silva, AEMO, Australia**  
 Grid-Forming Inverters: A Voluntary Specification

**Dr Sasan Zabihi, Hitachi Energy, Australia**  
 Advanced Virtual Synchronous Machines

Zoom Webinar ID: 893 8345 5396

10:00am – 12:00 pm (AEST-Brisbane Time)  
 13 April 2023

IEEE Registration  
<https://events.ieee.org/2023/04/13/89383455396>

*Super Technical Session flyer*

**2023 Power Engineering Conference Travel Awards - \$4000 in total**

The chapter has announced travel awards for the [IEEE PESGM 2023](#), the 33rd Australasian Universities [Power Engineering Conference](#), and the 2023 IEEE International Conference on

[Energy Technologies for Future Grids.](#)

Please contact the PES & DEIS Queensland Chapter Chair **Dr Feifei Bai** for further information.

## Super Technical Session 2

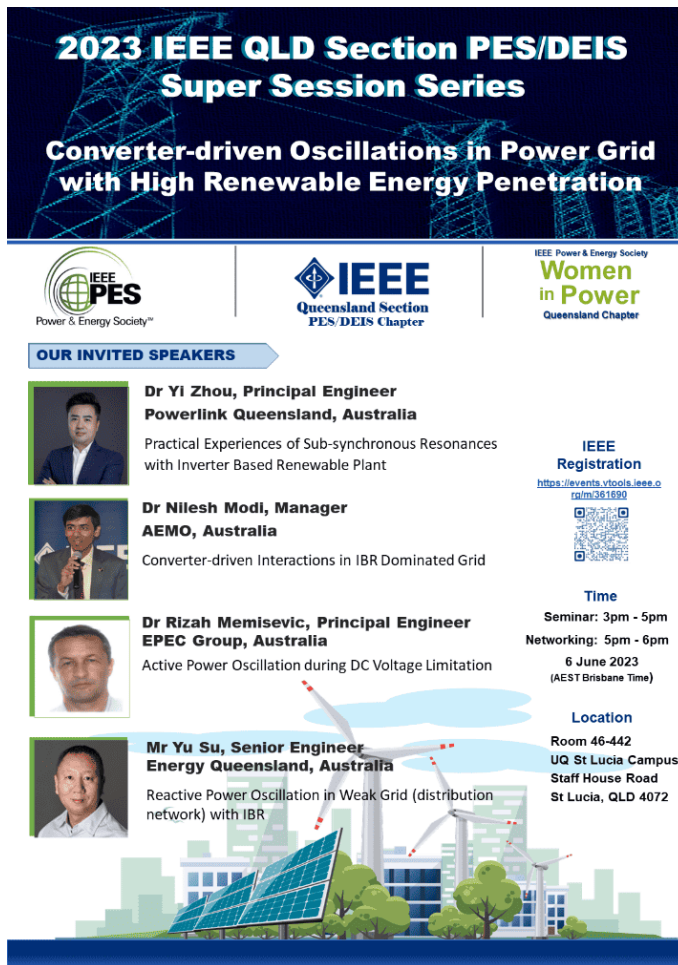
The chapter will hold its second Super Technical Session on June 6th. This session will cover Converter-driven Oscillations in Power Grid with High Renewable Energy Penetration.

Four speakers are again invited to talk about different topics in this session.

- Dr Yi Zhou (Powerlink Queensland): Practical Experiences of Sub-synchronous Resonances with Inverter Based Renewable Plant
- Dr Nilesh Modi (AEMO): Converter-driven Interactions in Inverter-based Resource (IBR) Dominated Grid
- Dr Rizah Memisevic (EPEC Group): Active Power Oscillation during DC Voltage Limitation
- Mr Yu Su (Energy Queensland) : Reactive Power Oscillation in Weak Grid (distribution network) with IBR

## Brisbane Lord Mayor's Convention Trailblazer Grant

With the support of the PES/DEIS Chapter, Dr Nadali Mahmoudi received the 2022-23 Lord



**2023 IEEE QLD Section PES/DEIS Super Session Series**  
**Converter-driven Oscillations in Power Grid with High Renewable Energy Penetration**

IEEE Power & Energy Society  
**Women in Power**  
 Queensland Chapter

**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

*Super Technical Session flyer*

Mayor's Convention Trailblazer Grant (up to \$5,000) to attend IEEE PES conferences.

Click [here](#) for further details.

### Distinguished Lecturer Dr Jessica Bian

The chapter invited the IEEE Distinguished Lecturer and IEEE PES President Dr Jessica Bian to visit the chapter on June 20th 2023.

The arranged activities include a technical seminar by Dr Bian, a UQ research lab site visit, and a

discussion on the PES/DEIS chapter development. The technical seminar to be provided by Dr Bian is “Advancing Innovation in Grid Resilience and Edge Technologies”. The seminar details are shown in the following flyer. You are welcome to join this exciting seminar!

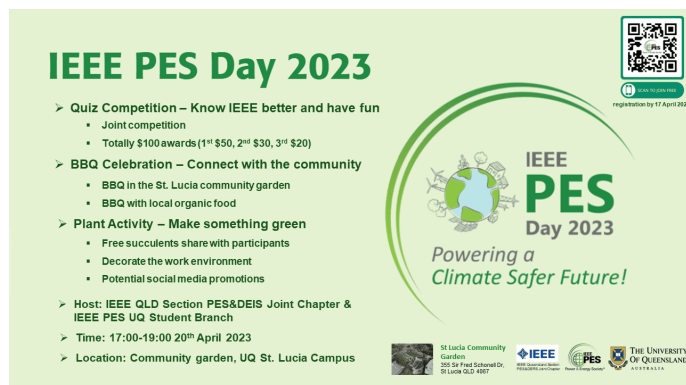


*Distinguished Lecturer flyer*

### Celebration of IEEE PES Day 2023

The chapter collaborated with the IEEE PES UQ student branch to celebrate IEEE PES Day 2023

on April 20th. The topic was “Powering a Climate Safer Future”. Details are shown in the following flyer and photo.



*PES Day flyer*



*PES UQ students*

### Participation in the Technical Session organised by HKN Mu Kappa Society

IEEE HKN Mu Kappa arranged a hybrid technical session by Professor Martin Green on May 19th 2023.

Marin shared his groundbreaking research and insights on the latest advancements in solar cell technology and its place in the sustainable future. The PES/DEIS Chapter assisted IEEE HKN MU KAPPA to circulate and promote this event.



*Mu Kappa flyer*

### IEEE PES Griffith University 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 May 31st 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.



*Griffith University PES students*

### IEEE MGA Volunteer Leadership Training (VoLT) Program

We congratulate our chapter chair, **Dr Feifei Bai** for successfully completing the 2022 VoLT program and receiving the VoLT certificate in 2023.

The certificate is shown below.



*Dr Bai's VoLT certificate*

# Eta Kappa Nu Society



**SAMUEL MOLL**  
samuel.moll@uqconnect.edu.au

## Committee:

Chair: Samuel Moll  
 Vice-chair: Yunda Xu  
 Secretary: Hankun Cui  
 Treasurer: Linfeng Liu  
 Media: Christopher Malau



*Professor Green on link from Sydney*



*Lecture attendees*

Few people can claim to have had the level of influence on the development of solar energy as Scientia Professor Martin Green, Director of the Australian Centre for Advanced Photovoltaics.

In a talk hosted by the University of Queensland's IEEE-HKN Mu Kappa Chapter on May 19th, Professor Green gave us a brief tour of his 50 years in photovoltaic research, from the heady days breaking record after record for solar cell efficiency, to the current holy grail of photovoltaics - the search for new materials that may ultimately supplant silicon in the formation of the multi-layer cells with the potential to approach efficiencies around 50%, almost double the current efficiency record.

Professor Green provided insights into the cost drivers and market forces behind solar cell production, including the phenomenal decrease in production costs and prices in recent years that has led solar to be one of, if not the, cheapest sources of electrical energy in terms of cost per megawatt.

He concluded on a truly uplifting note with the potential and progress of solar energy in addressing climate change, particularly with respect to emerging economies who have the opportunity to develop with the current improvements in solar cell efficiency.

The event was a great success for Mu Kappa

and the IEEE, with around 70 attendees, around half of whom were IEEE members, and a worthy follow-up to an event held the previous year featuring Dr. David Finn, Co-founder of EV charging phenomenon Tritium.

Mu Kappa has also held various events supporting students at UQ on their journey to becoming well-rounded engineering professionals, such as support sessions providing an introduction to control systems and electronics through the medium

of prototype boards like the Arduino, as well as co-hosting IEEE Day with special guest of honour Mr. Deepak Mathur.

With such high-profile and engaging guest speakers and a dedicated and dynamic team, Mu Kappa is well-situated to continue to deliver world-class events to IEEE members and the UQ and greater Brisbane academic community.

# Life Members Affinity Group



**JOHN GOUGH**  
john@atwell-gough.com

## **Committee:**

Chair: John Gough

Vice-chair: Mike Robinson

Queensland Section has a Life Members Affinity Group (LMAG), which held its first meetings in 2022.

The idea of an LMAG is to provide a mechanism for life members to stay in contact with the profession, and to meet with other life members who share both their career experience and technical interests. Meetings can have a social or a technical emphasis, or perhaps a mixture of both.

Members of the IEEE automatically become life members when the sum of their age in years and the years of their membership adds up to 100. Life membership is not conferred until January 1st in the following year. At that time new life members receive a congratulatory letter from the IEEE President and CEO, a gold-coloured IEEE membership

card, and a Life Membership certificate.

Queensland Section has somewhat in excess of 60 life members. Life members no longer pay annual membership dues.

As convener of the Queensland LMAG, I'm planning to hold at least three meetings during the remainder of 2023. Typically, any technical focus will be in an area of technology that is of general interest for life members, no matter what area of engineering was the focus of their professional life.

Current life members can contact me just to touch base, or to suggest a topic for future meetings, by emailing me at the address above.



## Bits and Pieces

**The 2023 Annual General Meeting** and dinner will be held on November 24th. The venue will be confirmed at the July committee meeting.

**The first Queensland Section newsletter** to be distributed by e-mail is located [here](#). Prior to May 1997 newsletters were distributed by post. None of them have survived.

The May 1997 newsletter was discovered in a drawer at Queensland University several years ago. It came into my possession almost 20 years ago.

It makes interesting reading; several IEEE Queensland members mentioned in the newsletter are still active in the Section's affairs.

**A Life Member Affinity Group (LMAG)** has been operating in the Queensland Section since 2022. Its first report appears in this newsletter.

If you are wondering about your eligibility to join the LMAG, please read the LMAG report for full details.

**Professor Brian Lovell**, chair of the Queensland Computer Society chapter, will be putting in a bid to host TENCON in Brisbane in 2025.

[TENCON](#) is a Region 10 technical conference. It was last held in Brisbane in December 1997. A booklet describing TENCON97 is available [here](#).

**A Power and Energy Society** student branch was established at Griffith University in May 2023. Congratulations to Yue Qu for getting the student branch established.

The petition to start the student branch is located [here](#), and the letter confirming the branch's establishment is located [here](#).

**Congratulations also to Hugo Espinosa**, who was recently awarded the 2023 IEEE APS Donald G Dudley Jr Undergraduate Teaching Award, 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 Antennas and Propagation Society (APS) of IEEE. The Award recognises outstanding and original contributions to undergraduate education in the general field of electromagnetics.

The award will be presented at the IEEE APS Conference Awards Ceremony in July 2023 in Portland, Oregon, USA. See [2023.apsursi.org](https://2023.apsursi.org). This conference is attended by more than 2,000 participants. As the 2023 recipient of this award, Dr Espinosa will deliver a speech during the awards ceremony.

## Queensland Section Office Holders 2023

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<b>Internet of Things Society</b>		
<b>Joint Chapter</b>		
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<b>Robotics and Automation Society</b>		
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<b>Dielectrics and Electrical Insulation Society</b>		
<b>Joint Chapter</b>		
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<b>Communications Society</b>		
<b>Geoscience and Remote Sensing Society</b>		
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<b>Society on Social Implications of Technology</b>		
Chair	Samuli Haataja	s.haataja@griffith.edu.au
Secretary	Elizabeth Englezos	e.englezos@griffith.edu.au
<b>Life Members Affinity Group</b>		
Chair	John Gough	john@atwell-gough.com
Vice-chair	Mike Robinson	blackmagic@computer.org
<b>Women in Engineering Affinity Group</b>		
Chair	Punam Pawar	punam.pawar@uq.net.au
<b>Young Professionals Affinity Group</b>		
Chair	Ben John	b.t.john11@gmail.com