IEEE CIRCUIT

The Institute of Electrical and Electronics Engineers, Inc.

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Secretariat

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IEEE NEW SOUTH WALES SECTION
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Contents:

Editorial:

This is the twenty-sixth newsletter I've edited. This one is - as usual - being edited with the very latest stable version of Libre Office – 7.4.5.1.

We have two conference report and a number of conference flyers. Dylan Lu's NSW Universities Symposium on Sustainable Electrical Systems is particularly attractive - the two conference papers I carried over from his report both talk about useful innovations which aren't dramatic but which will make the products that use them a bit smaller, cheaper and better than their competitors, which is what marketing always want and clever design can deliver, from time to time.

Chair's Message for July 2023

We are now half way through 2023. For most of us, COVID is a thing of the past, but many of us would still prefer not to attend physical meetings. We can keep up to date by viewing on-line or by reading but then we miss the most important service that the IEEE offers, networking with colleagues.

Networking has two important advantages. It lets us discuss a variety topics, both work-specific and general, which is important to our well-being. And these discussions can generate ideas for events and prompt people to volunteer to make them happen.

We all need to be involved. It may be just making the effort to attend an event, but it would be really appreciated if you could help to stage an event. This help could be as simple as giving us the contact details of somebody who could help set up an event. The events could be presentations, lectures, site visits or anything else you can come up with.

After COVID put as all into hibernation, some chapters and groups are now active again while others are still dormant.

Has there been a recent event in your area of interest? If not, it may be that your interests lie in one of those groups that are still dormant, and you might like to help get it working again. Please let me know.

To help get networking back, I have been organising lunches on every second Tuesday and moving them around the metropolitan area. Plans to hold some in regional areas are in hand. If you would like one in your area, please let me know, and do try to suggest a suitable location.

The Section is requesting nominations for outstanding volunteers awards. Further details can be found in the following pages. While talking about nominations, there is the call for the executive positions for 2024. Are you prepared to take the challenge? If yes, organise to be nominated.

IEEE hosts many conferences around the world, so members and others can network and keep up to date with latest happenings in that area. A number of these conferences take place in NSW. Some have involvement of the NSW Section in organising, assisting and promoting. Some are financially supported by the Section. The Section has no involvement with many of them. The Section would like to have some involvement in all conferences held in NSW so that members, especially students, get to understand what is involved in organising conferences. If you are involved in organising conferences, please let the Section know, so that we can help you to make your conference more successful.

Why does the Section financially support some conferences? The Section only receives three (US) dollars per year per regular member from HQ to run the Section's events. Senior member are worth four (US) dollars a year, so there is a financial incentive for the Section to encourage members to move up to senior membership when they can. Some Societies do give Chapters and Groups additional funds. This total funding is considerably less than what the Section, Chapters and Groups budget/spend in a year, because we made a lot money from one successful conference in Sydney in the 1990's and have been spending it ever since. We have made money (but not as much) from subsequent conferences but extra money is always helpful, and financially supported conferences usually make profits that help the Section's finances. Without that members would have to pay (more) to attend events which are now usually free.

The Section and its OUs (Operational Units) are here to support the members. How are we doing?

We do need your feedback.

Do you have something happening that others should know about?

Is there something we can organise? Presentation on a particular topic, a tour of a particular facility, a seminar, a workshop or the like.

Thinking about what the Section does, the Section is involved in STEM out-reach, basically to support teachers. If you are willing to help with this work, please contact Graham Town.

Sensor Council Joint Workshop

A report on the joint work shop of the IEEE and the IMS NSW chapter on sensor fusion and machine learning (ML) for smart applications.

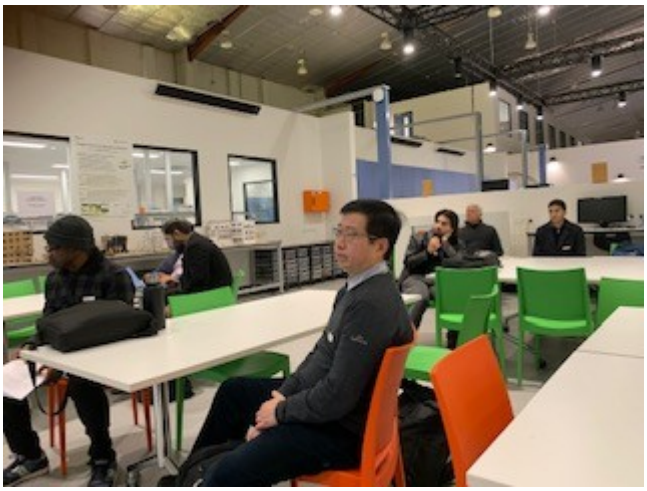
Date June 23, 2023, 8:30am to 5:30pm, 44 Waterloo Road, Macquarie University

The main focus of 2023 IEEE sensors council's workshop was on Sensors Fusion and ML for Smart Applications which includes autonomous vehicles, drones, swarm robotics and a few more exciting applications. Both lectures and hands-on activities were involved. The first half was on lectures and the 2nd half was on hands-on experimental activities where the participants made IoT based system starting from sensors, interfacing to embedded processor, wireless communication, uploading data to cloud, data visualization and machine learning.

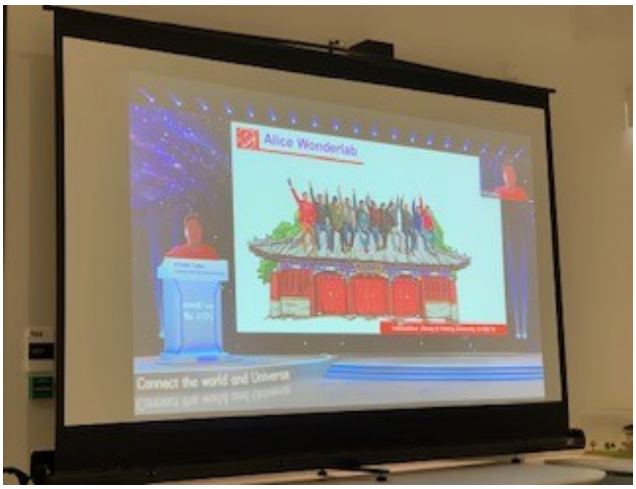
The talks were available on line via zoom along with face to face participation.

The details of the agenda of the workshop were

8:30am to 9:00am: Registration and Morning tea
9:00am to 9:25am: Introduction of Sensors Council and activities
by Prof. Subhas Mukhopadhyay, Chair, IEEE SC NSW Chapter
9:30am to 10:00am: Drones research at Macquarie University,
by Prof. Richard Han, School of Computing, Macquarie University
10:00am to 11:00am : Keynote and distinguished lecturer talk
by Prof. Alice Zhang, Peking University, Beijing, China
Alice to Alita: Adventure of Self-Powered Smart System
11:00am to 11:15am: break
11:15am to 12:30pm: Presentations
11:15 – 11:30am: The development of a new calculable capacitor at NMiA by Brady Shearan
11:30am – 11:45am: Smart sensor node for Soil and Water quantification by Waqas Afridi
11:45am – 12:00pm: Smart Spinal Implant by Subhas Mukhopadhyay
12:00pm – 12:15pm: Sensors Fusion for making drones smarter by Alice James and Avishkar Seth
12:15pm-12:30pm: Real time anomaly detection in IoT system by Ollencio D-Souza
12:30pm to 2:0pm: Lunch and visit of Drones Research Lab of Macquarie University
2:00pm to 5:30pm: Hands-on activities on IoT
2:0pm to 3:30pm Basic introduction of IoT project. Arduino & Raspberry pi setup and programming it for sensor interfacing. Inter device communication and transmission of data.
3:30pm to 4:0pm: Afternoon Tea break
4:0pm to 5:30pm: Uploading data to cloud using LoRa and WiFi.
Development of API. Data Visualization and Machine learning.
A few pictures of the workshop are shown.



A few participants of the workshop



Prof. Alice Zhang delivering her talk on line

Mr. Ollencio D'Souza is delivering his talk

Visit of Drone Research Lab at Macquarie

Hands-on IoT activities by the participants

For details: Prof. Subhas Mukhopadhyay, Subhas.Mukhopadhyay@mq.edu.au Mob: 0421474818

Australian NSW Universities Symposium on Sustainable Electrical Energy Systems 2022

The creation of this special event, sponsored by the IEEE Industrial Electronics Society (IES), satisfies a need that we have identified over the past few years as COVID-19 had restricted conference travel and prevented students from having effective communication and networking with their peers.

Even though the international borders opened in early 2022, many universities in Australia were still limiting international travel for the year. This invitation was to all academic/faculty staff, researchers, postgraduate research students and engineers working on sustainable electrical energy systems across all NSW universities.

The program began with a welcome speech by Prof Dylan Lu, the Chair of the IEEE NSW Joint Chapter IE/IA/PEL. He was followed by Dr C.F.M.S. Reza who is a Ph,D graduate from the University of Sydney and is now working as a Principal Engineer at BP Light Source. He shared his experience working in the industry and highlighted some essential skills the electrical power industry required.
The program then moved to an oral session before lunch. After lunch, we had one poster session followed by another oral session. The event was well attended by 50 delegates that included industry delegates, academic staff, post-doctoral researchers and HDR students. We received 27 submissions and - based on the recommendations of the review panel (academic staff from different NSW universities) - four prizes are awarded to students with outstanding performances.

The winners are as follows:
Best Oral Presentation Award – Mahbubur Kiran (University of Wollongong) and Lei Wang (The University of Sydney)
Best Poster Award – Ye Zhu (The University of NSW)
People's Choice Award – Pablo Poblete (University of Technology Sydney)

Figure 1: Dr CMFS Reza shared his experience in the power industry after completing his PhD study.

Figure 2. Poster Session

Figure 3. Oral Presentation

Improvement in the Power Transfer Capability of Multi-Winding High-Frequency Magnetic Links with Interleaved Winding Topology

by Mahbubur Rahman Kiran*, *Student Member*, *IEEE*, Md. Rabiul Islam, *Senior Member*, *IEEE,* Kashem M. Muttaqi, *Fellow*, *IEEE*, *and* Danny Sutanto, *Life Senior Member*, ***IEEE***

from the School of Electrical Computer and Telecommunications Engineering, University of Wollongong, Wollongong, Australia, mrk978@uowmail.edu.au, mrislam@uow.edu.au, kashem@uow.edu.au, and soetanto@uow.edu.au

High frequency magnetic links (HFMLs) are found in many power electronic conversion systems, esuch as in modern power electronic converter and inverter circuits, including solid state transformers and electric vehicle (EV) charger, where HFMLs can be used as a magnetic link to interconnect multiple sources or loads in addition to its inherent capability to offer galvanic isolation. Efficiency, cost, and weight of such power converters largely depends on the efficient design of HFMLs. Some key factors such as core materials, core structures, winding layouts, and parasitic parameters should be considered during the design of HFMLs. Most existing conventional HFML incorporate an ordinary concentrated winding topology which lets the magnetic core saturate without ensuring possible maximum power transfer [1]. To overcome this technical problem, this article proposes new interleaved winding topology (IWT) which can significantly increase the power transfer capability with the same magnetic core and turn number.

Method: The method includes the selection of proper magnetic materials for the core, an optimized size and shape of the core, and developing the multi-winding HFML with new IWT based winding. Fig. 1 shows the 3D geometry of MWHFML with concentrated and IWT windings.

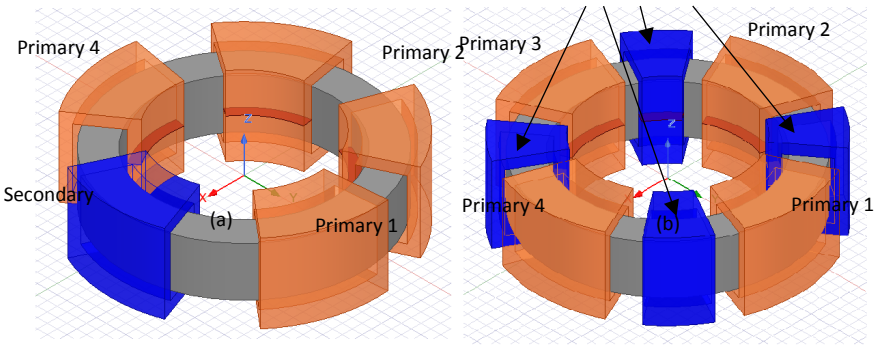


Fig. 1. 3D geometry of MWHFML: (a) concentrated winding and (b) interleaved winding.

Results: The MWHFMLs have been analyzed with the finite element method to verify of the proposed design method. A comparative analysis has been carried out in terms of magnetic flux distribution and power transfer capacity of the MWHFMLs. Fig. 2 shows the more uniform flux distribution and improvement in the power transfer capability of the MWHFML with IWT based winding.

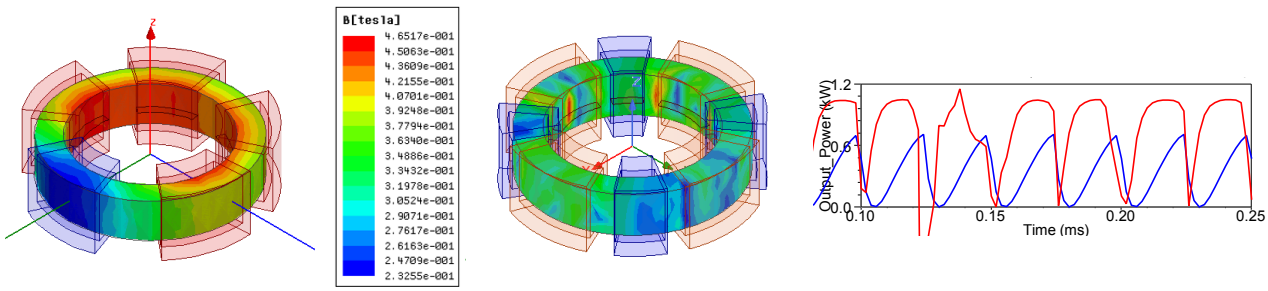


Fig. 2. Magnetic flux distribution with: (a) concentrated winding, (b) interleaved winding, and (c) output power comparison.

Conclusion: The power transfer and other electromagnetic performances of the proposed MWHFML are evaluated with concentrated and interleaved windings. The analysis shows, approximately 27% more electrical power can be transferred from multiple primary windings to single secondary with interleaved winding topology.

Reference: M. R. Islam, Y. G. Guo, and J. G. Zhu, “A high-frequency link multilevel cascaded medium-voltage converter for direct grid integration of renewable energy systems,” *IEEE Trans. Power Electron.,* vol. 29, no. 8, pp. 4167–4182, Aug. 2014.

Active Power Decoupling Integrated Active Clamp Flyback Converter

Lei Wang, Huan Li, and Sinan Li (sinan.li@sydney.edu.au, The University of Sydney)

I. Research Problem

Recent developments in fast-charging power delivery protocols are pushing AC–DC adapters into the hundred-watt power range. Conventional solutions in this power range, which use two-stage topology and a large double-line frequency buffer capacitor are generally costly and bulky.

This paper presents a patent-pending active-power-buffering integrated active-clamp flyback (iACF) converter [1], [2], that enables a single-stage adapter design with reduced capacitance requirements and higher efficiency. This is achieved by exploiting the inherent energy storage capability of the clamping capacitor, transforming it into an active power buffer. Compared to conventional ACF converters, iACF does not require hardware modifications, while retaining all the key features of ACF, i.e., soft switching and leakage recycling, which are retained. Operating principles and detailed controller design are discussed, and a 100-W laboratory prototype is built. The prototype achieves 94 % peak efficiency and up to 92 % size reduction of the buffer capacitor. The experimental evaluation shows that the new single-stage solution enabled by the proposed modulation method is superior to the conventional two-stage and single-stage solutions in terms of cost, conversion efficiency, and power density.

II. The Solution

iACF works by integrating active power buffering (APB) function into ACF topology (see Fig. 1). The basic idea of iACF is to perform power buffering of the twice-line frequency power difference between p_{in} and p_o by using the inherent clamping capacitor C_b of an ACF converter, instead of the output capacitor C_o as conventional ACF converters do. By allowing a greater voltage ripple on C_b, the energy storage requirements and thus the volume of C_b can be greatly reduced. The APB using C_b is made possible by controlling the ON time of the S_2 switch.

See Fig. 2, where a longer ON time of S_2 will in effect result in C_b being discharged over one switching period, while a shorter one will do the C_b charging. Thus, by controlling the ON time of S_2 properly, C_b can be used to buffer the full twice-line frequency power. as well, by controlling the ON time of S_1, active shaping of the input current profile can be achieved, allowing power factor correction to be performed.

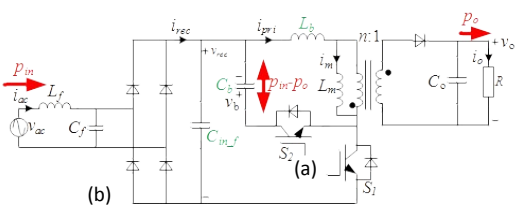


Fig. 1: Simplified schematic of iACF. C_b (a) charging and (b) discharging phase.

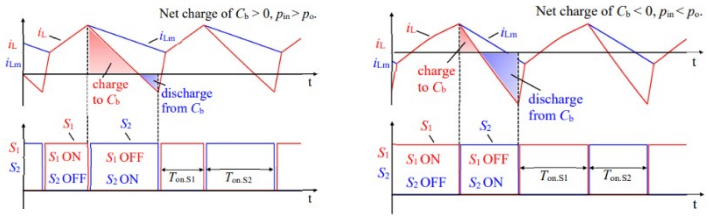
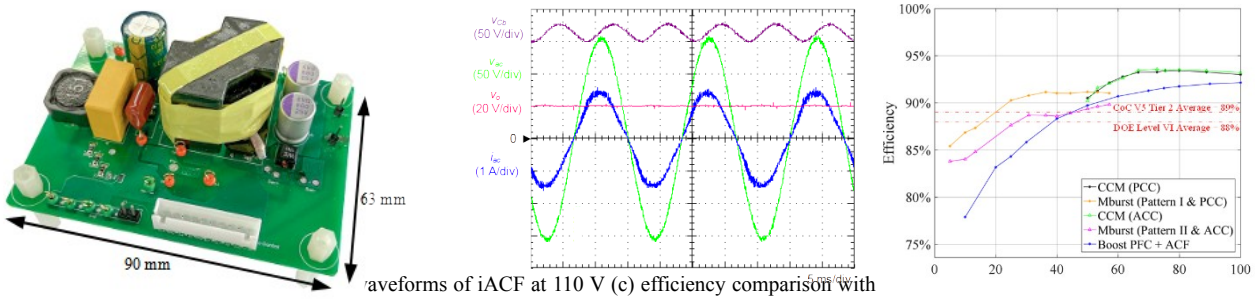


Fig. 2: Operating waveforms of iACF during

III. Results and Concluding Remarks

The experiment is carried out on a 100W iACF converter, with universal AC input and 20V DC output. An image of the prototype is shown in Fig. 3(a). Compared to the conventional two-stage solution, the proposed solution requires fewer power components and realizes high power density.

Unity power factor and constant output voltage are achieved (see Fig. 3(b)). With 20% voltage ripple on C_b, the prototype achieves a 57% reduction in the size of buffer capacitor. The low line efficiency of the prototype at heavy load (66W-100W) is about 93%, which is 1% higher than two-stage solution [3]. In addition, iACF also offers a higher efficiency at light load with a novel burst mode control, achieving up to 10% efficiency improvement over TI's two-stage solution (Boost PFC + ACF) [3], as shown in Fig. 3(c).



F aveforms of iACF at 110 V (c) efficiency comparison with existing solutions at 110V.

REFERENCES

[1] L. Wang, H. Li and S. Li, "Burst Mode Control of Active-Power-Decoupling Integrated Active Clamp Flyback PFC Rectifiers," in IEEE Transactions on Power Electronics, vol. 38, no. 5, pp. 6337-6350, May 2023.

[2] H. Li, S. Li, W. Xiao and S. Y. R. Hui, "A Modulation Method for Capacitance Reduction in Active-Clamp Flyback-Based AC–DC Adapters," in IEEE Transactions on Power Electronics, vol. 37, no. 8, pp. 9455-9467, Aug. 2022.

[3] Texas Instrument, 100-W USB-PD 3.0 AC/DC adapter reference design with Si MOSFET. [Online]. Available: https://www.ti.com/tool/TIDA010047.

The report included two more papers but, my editorial judgement suggested that they weren't of enough general interest to go into Circuit.

Radar 2023

In November, the 2023 International Radar Conference (Radar 2023) will be landing in Sydney for the first time. Radar 2023 is the premier international event on radar research, showcasing the latest and most exciting developments ranging from theory to practice.

Although radar has been around for over 75 years, there remain many challenges and opportunities for research and development, and there is still innovation going on in radar. This is driven by technological and information processing advances that are transforming old applications and opening a myriad of new ones.

From its beginnings as large, high power military installations enabling Radio Detection And Ranging of targets (see Figure 1), RADAR has diversified into small, versatile and smart sensors (see for example Figure 2), that are enabling a wide range of applications. Much as bats and dolphins use their sonar to sense their environments for navigation (perceiving their environment and identifying obstacles), and hunting (detection, identification, and localisation of prey), radar carries out a variety of jobs by emitting electromagnetic pulses and processing what gets reflected back by the the environment.

Beyond its military use for early warning by detecting and locating targets, radar has always been used for mapping, weather forecasting, navigation, particularly at night and in fog when optical visibility is limited, in air traffic control, seafaring, etc…

As an active sensor, radar operates at frequencies that are much lower than that of visible light, letting it see through some objects, as in ground-penetrating, foliage-penetrating and through-the-wall radar, and even beyond the horizon in the case of Over-the-horizon radar. Recently, as smaller and smarter radar units have become practical, its use has extended well beyond these applications to become a prime modality in a vast array of areas such as driver assistance (as in for instance adaptive cruise control that is already available in many cars), autonomous driving (see Figure 3), safety applications such as driver drowsiness detection which relies on vital signs monitoring (see Figure 4 for , medical diagnosis and monitoring, assisted living, etc…).

Recently, there has been another major development in the convergence of radar and communications with sensing and communications. This was largely motivated by over-crowding in the electromagnetic spectrum and the drive to minimise interference between different functions.

The theme of this year's radar conference is "dreaming the radar future". The conference will bring together academics, defence personnel and industry employees to talk about the latest advances in theory, systems, and applications. The conference will also have a number of tutorials on variety of topics, covering fundamental and emerging areas of radar. Events run at the conference will include a Young Professionals evening and an Equity, Diversity and Inclusion event.

A radar boot camp will also run on the weekend immediately prior to the conference. The Boot Camp is aimed at students and young professionals who are perhaps thinking about getting into radar and are interested in learning about it. The radar boot camp will have lectures by Internationally leading researchers and professors from Australia, Germany, the UK, and the USA. The radar boot camp will also include a lab tour and radar demonstrations.

The Radar Boot Camp will be held at UNSW Sydney on Saturday 4 and Sunday 5 November, while the Radar Conference will run at ICC Sydney from 6 to 10 November. The full list of topics and further information on the conference can be found at radar2023.org.

Figure 1: Large military radar dish [Wikipedia]

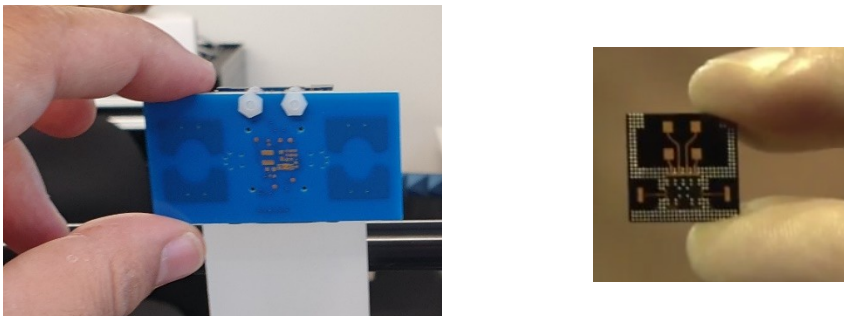


Figure 2: (a) small ultrawideband radar for human activity and vital signs monitoring, (b) Google Soli.

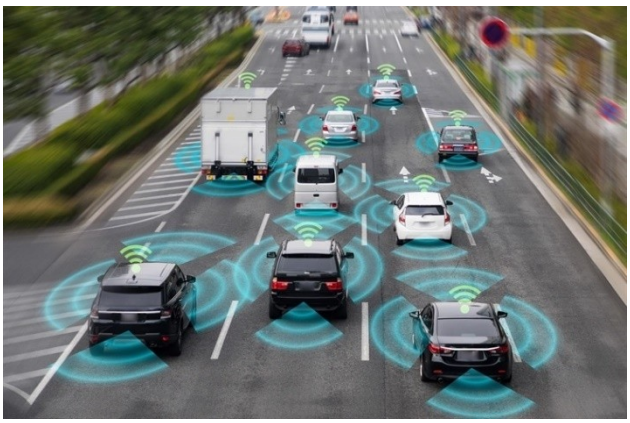


Figure 3: Automotive radar is poised to play a major role in autonomous driving.

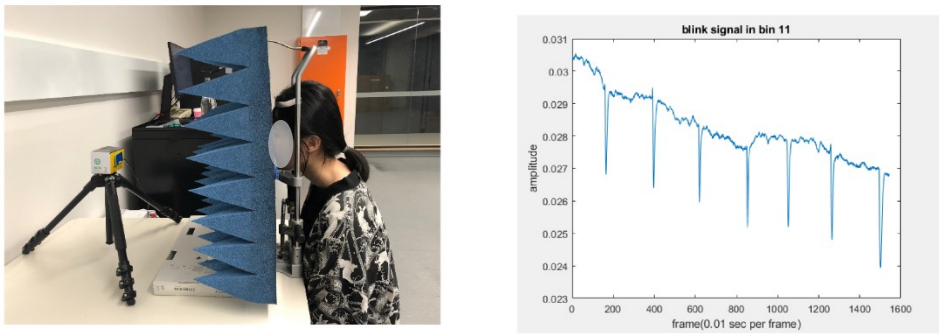


Figure 4: eyeblink detection for driver drowsiness: (a) experimental setup (the ultrawideband radar shown in Figure 2(a) was used and is in the little box mounted on the tripod), (b) the signal distinctly showing the eyeblinks.

22nd International Symposium on Communications and Information Technologies

ORGANISING COMMITTEE

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Zheng Zhou, BUPT, China
Kyung Sup Kwak, Inha University, Korea

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Patron Chairs
Yang Yang, UTS, Australia
Negin Shariati, UTS, Australia

Local Arrangements Chair
Peter Beadle, Academic Event Services, Australia

The 22nd International Symposium on Communications and Information Technologies (ISCIT2023) will be held in Sydney, Australia. Under the technical sponsorship of IEEE and IEEE Circuits and Systems Society, ISCIT2023 will provide a forum for researchers, engineers and industry experts to exchange and discuss new ideas, recent development, and breakthroughs in communications and information technologies. ISCIT2023 will also offer an exciting social program on the beautiful Sydney Harbour.

Circuit and Systems
- Analogue and Mixed Signal Processing
- Brain-Machine Interface Circuits and Systems
- Circuits and Systems for Communications
- Embedded Communications Systems
- Hardware Architectures for AI
- IoT, Wearable Devices and Smart Sensors
- Low Power Design and VLSI Physical Synthesis
- VLSI Architecture for Signal Processing
- Neuromorphic Computing
- 5G and Beyond Technologies

Wireless Communications
- Joint Communications and Sensing
- MIMO, Multi-user MIMO, and Massive MIMO
- Interference Alignment and Cancellation
- Heterogeneous and Small-Cell Networks
- Channel Modeling and Propagation
- Distributed and Cooperative Communications
- Smart Antennas and Space-Time Processing
- Communications Security
- Space Communications
- Reconfigurable Intelligent Surfaces
- URLLC

Next-Generation Networking
- 5G and 6G Networks
- IoT Networking, Data Management, Mining, Fusion and Energy Efficiency
- Cooperative Intelligent Transport Systems
- Networks for Smart Cities
- u-Health Networks
- WLAN, Mesh, and Vehicular Networks
- SDN, NFV, and Cloud-based Networking
- Network Provisioning, Monitoring, and Management
- Multi-Tier Fog/Edge Computing
- Emerging Internet Applications
- Energy-Efficient Design and Green Communications
- Network Security and Privacy

Artificial Intelligence for Communications and IT
- AI-Empowered Communications
- AI-Enabled Wireless Networking
- AI-Empowered Mobile Applications
- Fuzzy Logic and Neural Networks
- General Machine Learning
- Deep Learning
- Statistic and Probabilistic Methods
- Knowledge-Based Engineering
- Big Data Analysis
- Image, Video and Speech Processing
- Natural Language Processing
- Biomedical Information Analysis

Extended Paper Submission
5 May 2023

Tutorial/Workshop/Special Session Proposals
5 May 2023

Acceptance Notification
07 July 2023

Camera-ready
28 July 2023

iscit2023.org

IEEE EMBC 2023

The 45th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC) will be hosted in Sydney from 24th to 27th July 2023. This will be the first time ever that EMBC has come to Australia or New Zealand and only the second time in the Southern Hemisphere.

We currently have over 2,300 attendees registered drawn from the community of biomedical engineering professionals, clinicians and people who work in the industry. The biomedical engineering community of Australia and New Zealand has a rich history of remarkable scientific and technological contributions dating back to its First Nations (or indigenous) populations, supported by a thriving meditech industry.

This year's conference theme, "Engineering Better and More Resilient Healthcare for All," has particular relevance since the global pandemic. It emphasises our collective commitment to improving healthcare systems and responses worldwide. The scientific tracks will cover the standard topics of the EMBS technical committees, with an additional focus on innovations that address the conference theme. We are excited to showcase groundbreaking research and advances that will pave the way to better healthcare in future. To support this initiative, Theme 12 of the conference is “Translational Engineering for Healthcare Innovation and Equity”. You will also see that a substantial number of the Keynote talks and Special Sessions have a meditech translation emphasis

In addition to the stimulating scientific sessions, we have put together an exhibition featuring offerings from biomedical engineering companies, publishers, and biomedical engineering programs, institutes, and universities. This exhibition will offer networking opportunities for engineers, clinicians, scientists, and entrepreneurs, as well as providing a venue for students and young professionals to engage with industry leaders. The conference program encompasses workshops, mini-symposia, special sessions, oral and poster presentations, and dedicated sessions for students, young professionals and women in engineering, as well as sessions tailored for clinicians and entrepreneurs.

Nigel Lovell and Sally McArthur (Conference Chairs)

More details at http://embc.embs.org

Call for Papers and Proposals

2023 IEEE Region 10 Symposium

tensymp2023.org

TENSYMP 2023

6-8 September 2023 · Canberra, Australia

IEEE Region 10 | IEEE Australian Capital Territory Section | UNSW CANBERRA

The IEEE Region 10 Symposium (TENSYMP) is the flagship annual symposium organised by the IEEE Region 10 (Asia Pacific). The theme for 2023 is 'Technology for an Autonomous World'. An autonomous world is transforming industries ranging from automotive, aerospace, insurance to healthcare. The technological innovations in self-driving cars, environment-aware robots and intelligent buildings are becoming a reality and changing our world. Autonomous technology must operate at a high level of performance and reliability, across sensors, processing units at the edge and the cloud, data management and connectivity solutions.

TENSYMP 2023 will be held in Canberra, Australia from September 6-8, 2023. TENSYMP brings together research scientists, engineers and practitioners from across the region and the world to share their latest ideas. The symposium will showcase high quality oral and poster presentations, as well as Workshops sponsored by IEEE societies. Exceptional papers and contributors will be recognized with prestigious awards.

Topics of interest include

but not limited to

- Aerospace Technology
- Antenna, Microwave and RF Engineering
- Image and Video Processing
- Smart Technologies
- Blockchain/Distributed Ledger Technologies
- Artificial Intelligence
- Cloud Computing, Security and Privacy
- Humanitarian and Social Impacts of Technologies
- Low power VLSI devices, Circuits and Systems
- Telecommunications / 5G and Beyond
- Power Electronics and Systems
- Renewable Energy Technologies
- Control Systems and Engineering
- Systems, Man, and Cybernetics
- Computational Intelligence
- Geoscience and Remote Sensing
- Data Science and Engineering

Important Dates

Special Session / Workshop Proposals
15 April 2023

Paper Submissions
20 May 2023

Camera Ready Submission
25 June 2023

Registration Opens
30 May 2023

TENSYMP 2023
Technology for an Autonomous World

General Chairs

- Ambarish Natu
  Australian Government, Australia
- Xiuping Jia
  University of New South Wales, Australia

Program Chair Coordinator

- Hoe Tan
  Australian National University, Australia

Track Chairs

- Lily Qiao - Aerospace, Autonomous & Electronic Systems
  University of New South Wales, Australia
- Hieu Nguyen - Photonics, EDS & Nanotechnology
  Australian National University, Australia
- Hemant Singh - Computational Intelligence
  University of New South Wales, Australia
- Huadong Mo - Systems, Man and Cybernetics
  Australian National University, Australia
- Anthony Jones - Computer
  Australian Government, Australia
- Fei Ma - Signal Processing & Communications
  Australian National University, Australia
- Iman Shames - Control Systems
  Australian National University, Australia
- Yiqing Guo - Geoscience and Remote Sensing
  Commonwealth Scientific and Industrial Research Organisation, Australia
- David Powell - Antenna & Microwave Techniques
  University of New South Wales, Australia
- Chathurika Mediwaththe – Power and Energy
  Commonwealth Scientific and Industrial Research Organisation, Australia

Women in Engineering Chair

- Jihui (Aimee) Zhang
  Australian National University, Australia

Student Activities Chair

- Thien Truong
  Australian National University, Australia

Young Professionals Chair

- Vamsi Krishna Jadala
  TiE Hyderabad, India

Life Member Activities Chair

- Dale Siver
  Retired, Australia

Awards Chair

- Fouad Karouta
  Consultant, Australia

Publications Chair

- Hwa Chiang Leo
  IEEE, Singapore

Local Arrangements Chair

- Sharon Lim
  Consultant, Australia

Registrations Chair

- Erandi Hene Kankanamge
  University of New South Wales, Australia

Publicity Chair

- Amit Kumar
  BioAxis DNA Research Centre, India

Finance Chair

- Russell Gentle
  Australian Government, Australia

Website Chair

- Jeta Vedi
  Australian Government, Australia

Register for this event at https://tensymp2023.org/program/#registration

Call for Papers

IEEE
Advancing Technology for Humanity

pels IEEE POWER ELECTRONICS SOCIETY Powering a Sustainable Future

TaiPEA Taiwan Power Electronics Association

UTS

General Chair
Dylan Lu
University of Technology Sydney, Australia

Technical Program Chair
Georgios Konstantinou
The University of New South Wales, Australia

The IEEE International Future Energy Electronics Conference, IFEEC 2023 as a biannual event, continues its traditions to bring together academicians, students, researchers and practising engineers from all over the world to present emerging topics on electronic technologies for future energy applications.

Keynote Speakers:

Prof. Toshihisa Shimizu
TMU, Japan
Passive Components for Advancements of Power Electronics

Prof Ron S.Y. Hui
NTU, Singapore
Wireless Power Transfer Technologies

Prof Firuz Zare
QUT, Australia
Impacts of grid-connected inverters in distribution networks: planning, regulations and standardisation

Prof Grahame Holmes
RMIT, Australia
Advances in the Control of Grid Connected Power Electronic Converters

Technical papers are solicited in the following areas: Power Conversion Technologies, Renewable Energy and Applications, Transportation Electrification, Motor Drives, Devices and Components, Smart-Grid Technologies, and Emerging Technologies.

All submissions will go through a single-blind peer review process to ensure confidentiality and fair review. Please refer to the conference website for a detailed list of technical topics and the digest submission method at https://ifeec2023.org/ or via http://www.ifeec.tw.

IEEE NSW Section Outstanding Volunteer Awards 2023

The IEEE NSW Section in 2018 ran the inaugural IEEE NSW Outstanding Volunteer Awards.
This year the Awards include;

- IEEE NSW Outstanding Volunteer
- IEEE NSW Outstanding Young Professional Volunteer
- IEEE NSW Outstanding Women In Engineering Volunteer
- IEEE NSW Outstanding Student Volunteer

More information as well as the Awards Policy and Nomination Form can be accessed at http://sites.ieee.org/nsw/awards-recognition/

Nominations will close on 31 July 2023.

Subhas Mukhopadhyay
IEEE NSW Section Awards and Recognition Chair

Nomination Form

For section executive officers(Chair/Vice Chair/Secretary/Treasurer) to be elected by electronic vote or at AGM(by the Members); Elected positions by Chapters and Affinity Groups (Chair/Vice Chair/Secretary/Treasurer); Non-elected positions (appointed Officers).

Closing date Tuesday 31 August 2023 midnight

NOTE: Chapter and Affinity Group Committee Executive positions are elected by the respective Chapter/Affinity Members.
For Section Position Descriptions see: https://site.ieee.org/nsw/section-position-descriptions/
Nomination Form Instructions:
Before completing the form, review the following guidelines for nominating a volunteer Candidate:

- **(a)** Nominators must contact their nominee before submitting the form and confirm their acceptance of the time and other commitments required for the position.
- **(b)** Nominees must have had at least 2 years on the Committee to nominate for the key positions of Chair, Vice Chair, Treasurer and Secretary.
- **(c)** Nominees for Section Executive positions should be Senior Member or higher
- **(d)** Self-nominations require the submission of additional information e.g. CV or SMIEEE referee
- **(e)** If you are nominating for more than one position, separate forms should be submitted.
- **(f)** Please note the closing date, completed forms to be emailed to:
  Nominations Chair Mahmoud Elkhodr Email: elkhodr@gmail.com

  cc: Antony Zaglas Email: antonyz@ieee.org

Nominee Contact Information
Given Name(s):

Surname:

IEEE Email or other address

Phone No:

Address Line 1:

Address Line 2:

Address Line 3:

IEEE Member No(must be Active IEEE Member of the NSW Section):

POSITION SOUGHT:

CV attached Listing IEEE Positions held and Other(last 10 years): Yes/No

Nominator Contact Information
Given Name(s):

Surname:

IEEE Email or other address

Phone No:

Address Line 1:

Address Line 2:

Address Line 3:

IEEE Member No:

The "click here to nominate" feature doesn't work. The link is below. This will work for the paper version, too. I'm not a fan of hyperlinks that don't tell you where they are taking you.

https://ieee.secure-platform.com/a/organizations/main/submissions/details/181052

New and Upgraded Members.

For the period from the 1st March 2023 to the 30th June 2023.

New Fellows

None

Life Fellows

We have one new life Fellow.

Branka	S	Vucetic

Life Senior Members

We have two new life senior members.

Robert	E	Morley	Darmawan	Sutanto

Life Members

We have four new life members.

Paul		Axon	Alex	Cheng
David	A	Coward	Krishna	Rajaratnam

Senior Members

We have 27 new senior members.

Tejas		Canchi	Robert		Carman
Xu		Chang	John	`	Fletcher
Yansong		Gao	Md.	Rabiul	Islam
Rafiqul		Islam	Mohammad	Behdad	Jamshidi
Sarah	J	Johnson	Kiu	H	Kan
Ghassan		Kbar	David	W	Lamb
Raymond	Wing-Fai	Leung	Fengji		Luo
Herbert	Francis`	Mailey	Deepak		Mishra
Surya		Nepal	Hendra	Ishwara	Nurdin
Mehmet	A	Orgun	Yogeshwar		Ranga
Rajan		Shankaran	Nabin		Sharma
Karthick		Thiyagarajan	Lei		Wang
Junyu		Xuan	Basit	Ali	Zeb
Cuo		Zhang			

Members

We have a lot more new members - 193 of them. Kushbo Singh is a familiar name. Not the Bollywood film star, but the recent Ph.D, now at UTS.

Vijina		Abhijith	Mohamed	Khaled	Abu Mahmoud
Warwick		Adams	George		Africa
Awais		Ahmad	Amr	Al	Abed
Hamzeh		Aljarajreh	Reem	Mounzer	Almasri
Simbarashe		Antonio	Ulises	Alejandro	Aregueta Robles
Md.		Asadujjaman	Mert		Aydin
Yamin		Aye	Ann	Mary	Baby
Shahram		Bahman Rokh	Wei		Bao
Shaun		Bartlett	Reza		Barzegar
Graham	D	Beirman	Graeme		Best
Christopher	M	Bevan	Michael	J	Boers
Hamideh		Bour	David	J	Bowman
Andrew	Matthew	Brodie	Sarah		Bruggisser
Mark		Butlin	Verity	Ann	Carney
Tarek		Chaalan	Sudipta		Chakraborty
Dawnlicity		Charls	Stephen	W	Chase
Yuqian		Chen	Yijun		Chen
Sheng		Chen	Eva		Cheng
Qingqing		Cheng	Hon	Wah	Cheng
Chee	Mun	Chong	Kerry		Chorvat
Guoyu		Chu	Thai	Son	Chu
Richard		Clements	Sergio		Coniglio
Chris	C	Constance	Dean	A	Cooper
Adelle	C	Coster	Fei		Deng
John		Eisenhuth	Shaikh	Nayeem	Faisal
Masoud		Fetanat	Tony		Forward
Niki	Erina	Frampton	Amin		Gharipour
Andrew		Gillett	John		Graham
Simon		Gross	Mandar	L	Gujrathi
Ferhat		Hajdarpasic	Bavly		Hanna
Ashley		Horne	Steven		Howell
Mohannad		Hussien	Ibrahim	Anwar	Ibrahim
Reenu	Tresa	Jacob	Christopher	Linton	Jenkins
Jessica	Yajie	Jiang	Yongcheng		Jing
Marcel		Julliard	Samuel		Karumba
Kaveh		Khalilpour	Jinman		Kim
Arslan		Kiyani	Felix	Honglim	Kong
Rahul		Krishna	Robert	C F	Lai
Tin		Lai	Abdallah		Lakhdari
Mark	E	Larsen	Edmund		Li
Keqiuyin		Li	Yi		Li
Xiangyu		Li	Changhao		Li
Caroline	Jie Ting	Lim	Anna	Yun-Wen	Liu
Hangyue		Liu	Yinyan		Liu
Ged		Lodder	Sam		Lumley

Jianbo
Chamara Manoj
Gregory
Melvin
Kim L
Gelareh
Quynh Tu
Tuan
Peng
Isura
Sugiharto Michael
Jayson
Tee Howe
Svetlana
Stuart Bailey
Maoying
Jessica
Yogambha
Tirthankar
Troy
Christopher
Abhish
Mohammad Seydali
Khushboo
Stephanie L
Lizhao
Heidi B
David Charles
Nazatul Haque
Chang K
Victor
Alex
Kanchana
Tu
Thomas Aldert
Richard Martin
Bernardino Rillo
Qin
Ziqing
Jiatong
Lai
Gregory Leigh
Lan
Yufei
Dallas
Yang
Rowan
Xin
Xuyun
Jiahong
Dongzhan
Hans
Ma
Madarasingha
Mar
Mazid
McNally
Mohammadi
Ngo
Nguyen
Ni
Nirmal
Ong
Patrick
Peh
Postnova
Purcival
Qiao
Rahman
Ramaswamy
Raychaudhuri
Ridgewell
Rowbotham
Saha
Seyf Abad
Singh
Smith
Song
Stratti
Such
Sultan
Sung
Tam
Taverner
Thilakarathna
Tu
van Bruggen
Vickery
Viray
Wang
Wang
Wang
Wei
Wright
Wu
Xu
Yan
Yang
Yap
Yuan
Zhang
Zhao
Zhou
Zoellner
Dillon Ross
Quazi Ehsanul Kabir
Pushpa Kumara
Neil A
Scott
Ja Ba Dam
Duc-Lam
Tien Dung
Michael P
Hamed
Ariane Francesca Roche
Phoebe May
Xueping
David Robert
Zhipeng
Raad S
Rowan
Ahalya
Ian J
Oliver
Shuvashis
Ilyas
Muhammad Basit
Koon Yu
Shaleeza
Saulius
Otis
Thavanathan
Jian
Deborah
Zihao
Andrew M
Abhishek
Mingxiao
Gene
Eduardo
James
Tianhui
Guangchen
Clyde Robert
Joseph F
Brendan
Xuekuan
Xinzhi
Jie
Pengwei
Howard
Chentao
Chengchen
Xinchi
Qiaoxi
MacEwan
Mamun
Mataraaratchi
McLachlan
Miller
Nay
Nguyen
Nguyen
Nielsen
Nosrati
Paguia
Pearce
Peng
Pratten
Qi
Raad
Ramamurthy
Ravendran
Renwood
Ridler
Saha
Saleem
Shahab
Siu
Sohail
Stepulis
Stubbs
Sujendan
Sun
Szapiro
Tang
Terry
Tiwary
Tu
van Grecken
Villasenor Alvarez
Vohradsky
Wang
Wang
Webster
Winter
Wright
Xie
Yan
Yang
Yang
Yuan
Yue
Zhang
Zhou
Zhu

New Graduate Student Members

We have 176 new graduate student members. Md Hasin Reza Siddiquei is a familiar name - he's a active member.

Amani		Abusafia	Muneeb		Afzal
Waleed		Ahmed	Yazeed		Al Zahrani
Inam	Alsayed	Alanazi	Abdulrahman	A	Alharbi
Hadeel		Alhosaini	Balsam		Alkouz
Abdullah		Almohammadi	Najlaa	Saad	Alshatri
Adel	Saeed	Alzahrani	Samrah		Arif
Basim		Azam	Ivan		Bakhshayeshi
Yitong		Bao	Gisele	Juliette	Bentley
Laurence	Antony	Boss	Chris		Bull
Hongkyoon		Byun	Hu		Cao
Waqas	Ahmad	Chaudhary	Fredo	Paraginog	Chavez
Zhengkun		Chen	Ann		Chong
Indra	Neil	Choudhury	Phillip	Andrew	Cunningham
Michael	Allan	Darmanian	Sagar		Deokar
Prerna		Dhull	Antoni		Dimitriadis
Royston	Gavin	Dsouza	Yumeng		Du
Haowei		Duan	Wei		Duan
Daniela		Elia	Elizabeth		Englezos
Zheng		Feng	An		Feng
Brahma	Teja	Gandhari	Jingying		Gao
Gabriel		Garcia	Rachel		Gray
Jiwei		Guan	Yiru		Guo
Yichao		Hao	Md. Ershaul		Haque
Akm	Nadimul	Haque	Renjie		He
Siying		He	Muhammad		Iqbal
Seikh	Mohammed Shahidul	Islam	Michael		Italiano
Alice		James	Majid		Jazebi
Wael	G	Jefry	Yue		Jiang
Gary		Jin	Rhea		Johnson
Jincymol		Joseph	Zian	Shah	Kabir
Md	Sarwar	Kamal	this space intentially left blank		
Nuwan Prabath	Karunarathna	Karathota Kandambige	this space intentially left blank		
Amal	Mohan	Keerikkattil	Asif		Khan
Anushka		Kharbanda	Aline		Knab
Travis	John	Knigh	Yajing		Kong
Navin		Kumar	Ilhwan		Kwon
Moe	Hein	Kyaw	Tian		Lan
Hoang	Trung	Le	Yaowei		Li
Jizhizi		Li	Huan		Li
Qi		Li	Mingjian		Li
Fujian		Li	Jinghang		Li
Chen		Li	Hengrui		Liang
Yueyue		Liu	Tangyou		Liu
Yue		Liu	Xuemeng		Liu
Qi		Liu	XunLu		Lyu
Guangzhi		Ma	Srikanth		Maarishetti
Asaad		Makhalfih	Max		Mammone

Mathumathi
William
Hosnee
Rahma
MingCheng
Jia Hui
Geetha
Rishitha
Quang Bach
Haibo
Obaidur
Hallur
Mohammad Javad
Rui
Raymond
Viraj Rangana
Hamidreza
Kamran
Lin
Greta
Kapila
Rebecca
Jacob Neil
Faranak
Muhammad
Hiep
Wenning
Chuhan
Xiyu
Kithmini
Wenbo
Bin
Elham
Yuan
T
Yu
Borui
Yang
Weiming
Shijia
Zeyang
Rong

Manoharan
McDonald
Mobashir
Mukta
Nie
Ooi
Pai
Pasunuti
Phan
Qiu
Rahman
Reynisson
Salehpour
Sang
Schleibs
Senevirathne
Shafei
Shaukat
Shi
Stojanovic
Susantha
Sykes
Taylor
Tohidi
Umar
Vo
Wang
Wang
Wang
Weththasinghe
Xu
Yang
Yazdani Bejarbaneh
Yuan
Zhang
Zhang
Zhang
Zhang
Zhi
Zhou
Zhou
Zhu

Abdul
Claire
Jayden
Minh Tran Duc
Andre
Karan
Aswin
Thomas Anthony
Watcharakorn
Feiou
Alejandro
Xinhui
Krishna Ajit
Pattaraporn
Thomas
Avishkar
Dhyey
Hamish Peter
Md Hasin Reza
Tom Fang
Nikhil Pokkandath
Mehedi
Zhiyi
The Xuan
Monisha Mushtary
Xinyu
Hao
Xinyi
Wenhao
Jiexiang
Kai
Zhengjie
Lijia
Chenxi
Xu
Zao
Dawen
Yuhan
Jie
Ming
Xuelan
Wei

Matin
McFarland
Moore
Nguyen
Nunez
Pahuja
Palanisamy
Perrau
Pinthurat
Que
Ranchal Pedrosa
Rong
Samani
Sangaroonsilp
Searle
Seth
Shah
Shaw
Siddiquei
Su
Swaminadhan
Tajrian
Tian
Tran
Uttsha
Wan
Wang
Wang
Wang
Wu
Xu
Yang
Yu
Zhang
Zhang
Zhang
Zhang
Zhang
Zhou
Zhou
Zhu
Zong

New Student Members

We have 72 new student members.

Fahad		Al Maraee	Meshal	Moahmmed	Alsharif
Danial		Bavi	Wenyu		Cai
Ben		Carroll	Lloyd	Ly	Chan
Yunshu		Chen	Quanhao		Chen
Kehao		Chen	Yufei		Cheng
Dominic		Clarke	Charles	Anthony	Crisp
Nicholas	Ryan	Darcy	Brodie	Karl Samuel	Davis
Mitchell	Andrew	Dederer	Stephan	Vince	Fonti
Jacob	John	Hopkins-Windle	Mohammad	Shahadat	Hossain
Jason	Conrad	Howarth	Huanzhi		Hua
Liam		Irving	Vishal	V	Jaiswal
Xingjue		Jiang	Cooper	James	Joyce
Rim		Khalil	Birat		Khanal
Akriti		Kumal	Christina	Jessica	Lauw
Jesse	Patrick	Lawler	Teng	Chi	Leung
Jinshu		Liu	Daniel	Geoffrey	Lloyd
Emma		Lu	Adam		Lucas
Md.	Riazuddin	Mazumder	Quang	Viet	Nguyen
Elish		Patel	Tom		Penyikie
Osura	Sumal	Perera	Madison	Parker	Phillips
Neil	Ian	Parinas Quisumbing	Md.	Zobaer	Rahman
Reece	Walter	Reynolds	Katrina	Ann	Rolley
Rueben		Rosario	Rhys		Schmold
Qinyu		Shi	Petros		Stamatis
Stevan		Stanojevic	Alexander		Starchak
Felice		Tan	Sara		Tayari
Che-Wei		Tsao	Netani Mocelutu Masiqera		Tukana
Momir		Vrankovic	Zhi		Wang
Zhongxu		Wang	Yingqi		Wang
Fubara	George	Warmate	Yixiao		Wu
Alan		Xie	Ran		Xing
Alice		Xu	Yuxin		Xue
Zilin		Yang	Yaxi		Yang
Jiayi		Yang	Shuchang		Ye
Xiwen		Zhai	Xiaotian		Zhang
Yisheng		Zheng	Yuxuan		Zhou

New Affiliate Members

We have four of them.

Maxim	Borovi	Gary	Matthew	Brookes
Wentao	Lu	Brent		Valleau

New Associate Members

We have nine of them.

Lucy		Armitage	Youssef		Ben Bouchta
Arik		Friedman	Orsolya	Sara	Kekesi
Rachel		Macfarlane	Kayleen		Manwaring
Manish	Narsipura	Sreenivasa	Basem		Suleiman
Ubaldo		Torre			

Any student members who would like to be on the Student Branch Committees and any members, especially academic staff, who would like to be their mentors, please contact
Arslan Kiyani arslan.kiyani@mq.edu.au (student activities chair) or bruce.poon@ieee.org (0414 662 766) to register your interest.

There are a number of members who are qualified to be senior members. If you are interested to upgrading your membership, please do not hesitate to contact Bruce Poon at 0414 662 766.
"Membership" for Life members are free. However, you do need to renew it annually.
Renewal is simple and easy and can be done via the IEEE web site.
If you have not renewed your Life Membership, please log onto IEEE website to do it.

Submitted by Dr. Bruce Poon – e-mail bruce.poon@ieee.org

Circuit is currently provided electronically from the IEEE NSW Section web site

https://site.ieee.org/nsw/newsletters/

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Don't bother if you were already getting it by mail in 2022.

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Post to: Bill Sloman, **Circuit Editor, Unit 60, 1Tewkesbury Avenue, Darlinghurst NSW 2010**