



The Institute of Electrical and Electronics Engineers, Inc.

## **VOLUME 48 Issue 1**

Secretariat

AUSTRALIAN PROFESSIONAL CENTRE PO Box 576 CROWS NEST NSW 1585 Tel: +61 2 94318600

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IEEE NEW SOUTH WALES SECTION ARBN 078 576 495 ABN 34 078 576 495

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Web page: http://sites.ieee.org/nsw/

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#### **Editorial:**

This is the nineteenteenth newsletter I've edited. This one is being edited with the very latest stable version of Libre Office -7.04.2.

This continues to report our activities during the corona virus epidemic. There weren't many of them, since we exist to bring people together and this isn't a good idea in the middle of an epidemic.

Vaccinations should be under way by the time this issue gets on the web-site, but only the more elderly members will have been vaccinated by the time the July issue gets out, and we won't have been able to generate at lot of activity to report before the October issue either.

I've now got my first vaccination, but I'm old enough to be in the 1B group.

Colin wants to make Circuit more technically orientated - research, new technique, new facility, etc., but finding the content to make a real difference would seem to need a great deal more effort.

This means we need the help of our members to contribute and when we find that kind of content there are probably other outlets that could take it to a wider audience.

For a start, let's see what articles arrive for the June issue. Is there anything special at your workplace that others should know about?

## Chairman's Message

We congratulate the five members who have obtained the grade of Fellow and welcome the new members to the Section.

With the Covid-19 vaccine starting to rollout, things are hopefully returning to pre-coronavirus conditions, where face to face meetings can happen. We must still be careful in what we do. Sudden lock downs have occurred at short notice.

A number of the JILS presentations have had a face to face component. These not been well attended, with only a couple of people present. I understand the presenters like a live audience, as this gives them feedback, but people are cautious about gathering together.

We see the benefit that Covid-19 has brought, in that now members who were previously unable to physically attend events can now log in from remote locations. We need to ensure that - where possible - we retain the virtual component of our events, to include the maximum participation, especially for those in remote areas.

Last year I had planned to have some social activities but Covid-19 put a stop to that, as it did to so much else.

This year we have started with a luncheon on the Central Coast at Woy Woy, primarily for Life Members, but the invitation was open to all Members. I am planning on holding one of these luncheon events every second month, moving the location around. I am currently considering a location on the Parramatta River for the next one in May. If there is some interest, consideration could given to having some evening social events. If any Members have a favourite dining spot, please let us know and we will look into holding a function there.

Last year, we cancelled UNITE because of the coronavirus. This year there will be an UNITE, hopefully with a physical component, most likely in the Sydney area. But we do plan to have a virtual component as well, so that those unable to attend in person can benefit, and understand more about the activities of the Section, and how they can participate and take advantage of them.

If you have any topics or areas of interest that you believe the Section should consider, please let us know. We will try to make everyone aware of them at UNITE and explain how we will try to include them in our events.

Some members take up the challenge by planning activities. A case in point is Stefan Mozar who has planned a set of 10 lectures by international professionals for the Joint Broadcast Technology, Consumer Technology and Product Safety Engineering Chapter.

Part of the function of the Section is to make members aware of the engineering and related activities that are happening in Australia. Many of you are aware of activities occurring in your fields that most of us would not know about. Please pass this information on, so that the Section or the appropriate Chapter can create an event to highlight them.

I had better finish my message or Circuit will never make it out to the members. It has already delayed Circuit's release by a couple of weeks, and Bill isn't happy about it

Regards, Colin Elston, Chair, NSW Section

## **New Fellows**

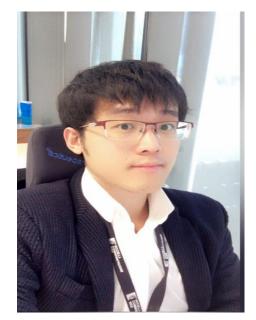
We have five new fellows this year



Prof. Alberto Avolio, BE, PhD (UNSW), FIAMBE Macquarie University -

for contributions to knowledge and monitoring of arterial hemodynamics

**Professor Avolio**, is Professor of Biomedical Engineering in The Australian School of Advanced Medicine at Macquarie University, Sydney, Australia. He has acquired international recognition in the field of cardiovascular haemodynamics.



Assoc. Prof. Derrick Wing Kwan Ng, University of NSW -

for contributions to resource allocation for wireless communication networks

Assoc. Prof. Kwan, is a Senior Lecturer and the Scientia Fellow at the University of New South Wales, Sydney, Australia. He has served as Editorial assistant to the Editor-in-Chief of the IEEE Transactions of Communications(2012-present), Editor of the IEEE Communications Letters (2012-2017), Editor of the IEEE Transactions on Green Communications and Networking (2016-present), Editor of the IEEE Transactions Wireless Communications(2016-present), Guest editor, IEEE JSAC, "WIRELESS TRANSMISSION OF INFORMATION AND POWER", 2018; Area Editor. IEEE Open Journal Communications Society(Sep. 2019 - Present) and Editor of the IEEE Open Journal of Vehicular Technology(Sep. 2019 - Present)



Prof. Willy Susilo, University of Wollongong

- for contributions to cloud computing security

**Prof Susilo,** is Professor and Head, School of Computing and Information Technology and Director of the Institute of Cybersecurity and Cryptology (iC2)

He has served as an associate editor on IEEE Transactions in Information Forensics and Computing, and an associate editor on IEEE Transactions in Dependable and Secure Computing.



## Prof. Shujun Zhang, University of Wollongong

## - for contributions to the development of advanced piezoelectrics for transducers

**Professor Zhang,** is a Professor at the Australian Institute for Innovative Materials and Institute for Superconducting and Electronic Materials

Professor Zhang is the associate editor-in-chief of IEEE Transaction on Ultrasonics, Ferroelectric and Frequency Control



## Assoc. Prof. Xiuping Jia, University of NSW(Canberra)

- for contributions to feature mining and classification of hyperspectral images

**Assoc. Prof. Jia** has served as Chair of the Joint ACT/NSW GRSS Chapter for several years. She is a Senior Lecturer at The University of New South Wales, Australian Defence Force Academy, Canberra, Australia. She is an Associate Editor of IEEE Transaction on

She is an Associate Editor of IEEE Transaction on Geoscience and Remote Sensing.

The IEEE NSW Section congratulates Profs Avolio, Ng, Susilo, Zhang and Jia for their achievements and thanks them for their contributions to IEEE and Engineering.

Contributed by Tony Zaglas, IEEE NSW Section Awards and Recognition Chair 2021



## **EULOGY Philip Dulhunty OAM LSMIEEE**

On 29<sup>th</sup> November, 2020, the IEEE and the Electricity Supply Industry in Australia lost a highly regarded colleague with the death of Philip Dulhunty OAM.

Philip joined the IEEE in September, 1969.

Philip was widely respected for the great contributions that he made to Australian industry, and some of the features of his lifetime are given in the following links:

https://www.cigreaustralia.org.au/news/latest-news/vale-philip-dulhunty-oam/

https://inthecove.com.au/2018/05/07/lane-cove-legend-phil-dulhunty-still-boxing-94/

In 1956 Philip very bravely employed me to work in his company Dulmison. I had completed 2 years of full-time study towards an electrical engineering degree, and for personal reasons was obliged to change my study regime to part-time.

My first responsibility was to produce the first product catalogue for the overhead transmission line hardware where Dulmison became a major supplier in Australia and overseas. I wonder if any of those catalogues have survived.

This meant that I had the privilege of working with Philip, and had the pleasure of getting to know him very well over the numerous years that followed. I am deeply saddened by his passing.

To read his autobiography is to get just glimpse of a very great man. He was man of the period, who achieved greatness in the electrical engineering industry even though his schooling stoppeded when he was 14 years old and living in a county town in NSW.

People like Philip don't stop learning when they leave school, and do tend to get better instruction than they were being offered at a secondary school in the country.

Dr Graeme Gwilliam

## DC Power Packet Dispatching System for Internet of Energy (IoE)

Summary of a Tutorial Delivered at IEEE Technically Co-sponsored International Conference on Smart Power and Energy Internet Systems (SPIES) 2020

This annual conference serves as a forum in which power and energy experts from academia, industry, and utilities across the globe can exchange ideas and experiences on emerging and enabling technologies.

It is a timely topic given that our electric power systems are undergoing rapid transformation as a result of the strong push for renewables and the advances in many areas, such as semiconductor materials, manufacturing, electronics, computing, information and communications and power electronics technologies.

The second conference was held over the 15<sup>th</sup> to the 18<sup>th</sup> of September 2020. The third conference will be held in Shanghai, China in September 2021.

Because of the COVID-19, the organizing committee changed the SPIES 2020 conference to a virtual event. Dr CMFS Reza<sup>1</sup> and I were invited to deliver a tutorial on an emerging topic of this area.

We chose to present a tutorial entitled "DC Power Packet Dispatching System for Internet of Energy". The tutorial was pre-recorded, but it was live streamed during the session alongside a Q&A session using the chat tool and Q&A tool on Zoom. There were 30 participants in the tutorial session.



Fig. 1 Opening slide for the virtual tutorial session

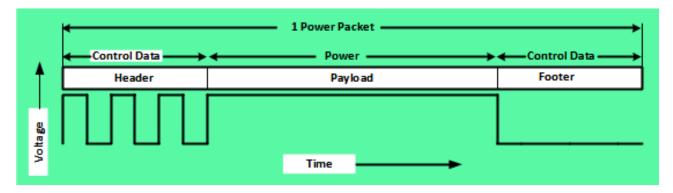
The tutorial started by pointing out that the rapid development of Internet of Things (IoT) has enabled the Internet of Energy (IoE), which integrates information and power to optimize both energy efficiency and power conversion efficiency of the distributed energy systems.

<sup>&</sup>lt;sup>1</sup>Dr Reza holds a PhD degree in Electrical and Information Engineering. Currently he is working as a Consulting Engineer – Power System Modelling at GHD (email: <a href="susan.reza@ieee.org">susan.reza@ieee.org</a>). GHD was Gutteridge, Haskins and Davey in Melbourne at one point. See <a href="https://www.ghd.com">https://www.ghd.com</a>.

The most straightforward approach to adopting IoE is to add an information layer to the controllers of different power equipment and coordinate the power flow at the expense of additional cost of communication system. An alternative solution is the power-line communication (PLC) technique which can transfer power and information flow simultaneously through the same transmission line. Traditional PLC technology is not designed to realize time-division and multi-path transmission of power flow.

Next, we conducted a brief review of existing technologies that are applicable for IoE. It includes Power-over-Ethernet (PoE), DC bus signaling (DBS), digital power grid, power flow colouring and power line communication (PLC). Each technology has its own strengths and limitations in terms of suitability for IoE implementation. Take the PoE as an example. It requires no addition cost to implement IoE on PoE as it uses the data conductors to send electric power. However, the maximum power it can handle is less than 100W.

The second part of the tutorial introduced an alternative option for IoE implementation, namely, power packet dispatching system (PPDS). This recently introduced technology provides capabilities similar to PLC technology but it works on a DC power system. The PPDS converts DC voltages into voltage pulses in an information packet format similar to that in communication systems, namely, header bits, payload and footer bits. Each packet is dedicated to a particular electrical load which has its address located in the header bits.



One key advantage of PPDS is that there is an energy mixer which can interface with different hybrid energy and power sources and generate voltage levels matched to that of the targeted load.

An energy router is placed in front of the cluster of loads to help distribute the power packets to the designated loads. The communication integrated power system has a simple structure that reduces multiple voltage conversion stages. Hence for short transmission distance (tens of meters) PPDS overall conversion is comparable with a conventional DC power system<sup>2</sup>.

One key challenge, is the absence of any explicit current limiting. We propose to add an over-current protection scheme to improve the system reliability. The key idea is to use the voltage level and duration of the voltage sag to determine if it is a transient burst or a persisitent over-load condition<sup>3</sup>.

The tutorial concluded with some suggestions for future research in the area, such as fault detection and isolation, more efficient power conversion and clustering to facilitate the adoption of PPDS for IoE applications.



Contributed by Professor Dylan Lu (UTS). Chair of IEEE NSW Joint Chapter Industrial Electronics, Industry Applications & Power Electronics

<sup>&</sup>lt;sup>2</sup> Reza, C. and Lu, D.D.-C. (2018), Design and implementation of a packeted DC power system using a modified power packet structure. *IET Power Electronics*, 11: 1603-1610. https://doi.org/10.1049/iet-pel.2017.0764

<sup>&</sup>lt;sup>3</sup> C. M. F. S. Reza and D. Lu, "Over-Current Protection for Power Packet Dispatching System," in *IEEE Transactions on Circuits and Systems II: Express Briefs*, vol. 67, no. 11, pp. 2617-2621, Nov. 2020, doi: 10.1109/TCSII.2019.2957501.

## **Life Members Lunch**



All Life Members were invited to attend a lunch at Woy Woy Fisherman's Wharf on Wednesday 17 March 2021. The lunch was attended by (from left to right) Ken Barber, myself (Tony Zaglas), Past Chairs Dr Graeme Gwilliam and Prof Ramutis Zakarevicius, Joe Venuti, Section Chair Colin Elston and Mrs Zakarevicius (the photographer).

Some of the Members travelled on the train from Central, whilst other joined at Hornsby and others travelled independently to the venue.

The restaurant required reservations and the usual COVID QR check in and checkout using the Service NSW app.

During the lunch various topics were discussed, including the Joint Lecture Series and the possibility of organising some presentations in the fields of those attending as well as the IEEE NSW/Australia Section 50<sup>th</sup> Anniversary in 2022. Also discussed was the consolidation of the Section's History, and sourcing editions of the newsletter CIRCUIT before 2001( editions of CIRCUIT after 2001 are available for viewing at Newsletters – IEEE NSW ).

Many thanks to Section Chair Colin Elston for organising the event and making the necessary Reservation booking.

Tony Zaglas Life Members Vice Chair

Editors note: I didn't go. I thought about it, but it felt a bit Covid-19 irresponsible. It still does.

#### 2021.ieee-sensorsconference.org





## **CALL FOR PAPERS**

## **Organizers**

#### **General Co-Chairs**

#### Mike McShane

Texas A&M University, USA

#### Subhas Mukhopadhyay

Macquarie University, Australia

## Technical Program Co-Chairs

## Kourosh Kalantar-zadeh

University of New South Wales (UNSW), Sydney NSW, Australia

#### Gijs Krijnen

University of Twente, The Netherlands

#### **Important Dates**

#### May 6, 2021

Proposals for Tutorials

#### May 6, 2021

Proposals for Focused Sessions

#### June 18, 2021

Paper Submission Deadline (Max 3 pages of text + 1 page of references)

#### August 9, 2021

Notification of Paper Acceptance

#### August 30, 2021

Submission of Final Papers

Visit the website for the most up to date information relating to abstract submission, tutorials, and special sessions information and deadlines.



IEEE SENSORS 2021 is intended to provide a forum for research scientists, engineers, and practitioners throughout the world to present their latest research findings, ideas, and applications in the area of sensors and sensing technology.

IEEE SENSORS 2021 will include keynote addresses and invited presentations by eminent scientists and engineers.

#### **Topics for IEEE SENSORS 2021 include**

- » Sensor Phenomenology, Modeling, and Evaluation
- » Sensor Materials, Processing, and Fabrication
- » Chemical and Gas Sensors
- » Microfluidics and Biosensors
- » Optical Sensors
- » Physical Sensors: Temperature, Mechanical, Magnetic, and others
- » Acoustic and Ultrasonic Sensors
- » Sensor Packagina
- » Sensor Networks and IoT
- » Sensor Applications
- » Sensor Systems: Signals, Processing, and Interfaces
- » Actuators and Sensor Power Systems
- » Sensors In Industrial Practice

#### **Focused Sessions**

IEEE SENSORS 2021 will have focused sessions on emerging sensor-related topics. Details related to the Call For Focused Sessions are on the conference website.

#### **Publication of Papers**

Presented papers will be included in the Proceedings of IEEE SENSORS 2021 and in IEEE Xplore pending author requirements being met. Authors may submit extended versions of their paper to the IEEE Sensors Journal.

#### **Industry Day**

A special track designed to encourage industry participation will include industry showcase/demonstrations, industry networking, and an industry panel luncheon. Special flexible one-day registration will be available to facilitate industry participation.

#### Special Issue in the IEEE Sensors Journal

A small number of best papers presented at the conference will be invited to contribute extended abstracts towards a special issue of the *IEEE Sensors Journal*. An invitation is not a guarantee of publication but an indication of content desirable to the journal, as well as the recognized quality of the work as submitted to and presented at the conference.

#### **Exhibition Opportunities**

The Conference Exhibit area will provide companies and other organizations with an opportunity to display and promote products, services, equipment, books, journals, publications, and/or other items to attendees from around the world.

For further information contact Coral Miller, cmiller@conferencecatalysts.com





Please visit: 2021.ieee-sensorsconference.org

## New and upgraded Members of the NSW branch of the IEEE

For the period from the 1st July 2020 to the 30th September 2020.

## **New Fellows**

Five but they have their own page, with photos.

## **Life Fellows**

Just one - Anthony K. Milne

## **Life Senior Members**

We have four new life senior members

Chris	R	Drane	Vikram	A	Manuja
Singaravel		Murugesan	Stephen	J	Phillips

#### **Life Members**

We have eighteen new life members.

Ning	Y	Chan	Alex		Cheng
Gary	R	Elsley	Gregory	В	Fisk
Michael	J	Goonan	John	W	Holm
Gregory	P	Hunter	David	C	Levy
Robert	В	Mcintosh	Frank	R	O'Hare
Nickens	N	Okello	Duncan	R	Raymont
Colin		Sutton	David	T	Tester
John	P	Thomson	Matthew	J	Underwood
Giuseppe		Venuti	Lawrence	K	Wong

## **Senior Members**

We have sixteen new senior members

Muhammad	Usman	Afzal	Shaghik		Atakaramians
Rohitash		Chandra	Raymond		Chiong
Hossein		Dehghani Tafti	Qinghua		Guo
Raheel	Maqsood	Hashmi	David	L	Jones
Nikesh	Anand	Lalchandani	Justin		Lipman
Wei		Liu	Jayashri		Ravishankar
Suranga		Seneviratne	Nicholas	P	Sheppard
Ajay		Taneja	Faisel		Tubbal

Members

We have a lot more new members - 72 of them

Tom	Blau	Anthony	Buckton

Ricardo	Jose	Campo	Yulian		Cao
Richard	James	Cartwright	Jason		Caruana
Dilek		Cetindamar	Shan		Chen
Siyuan		Chen	Andrew		Chiou
Dave		Cortie	Kevin	L	Cousins
Nguyen	Dinh	Cung	Michael	Н	Drewry
Warunika	Sithumini	Ekanayake	Mitchell		Emmerton
Huan		Fu	Jai		Galliott
Walter		Haindl	Philip		Hawkes
Stuart	Peter	Hawkes	Johny	Sarkis	Hawy
Rebecca		Henriques	James	C	Herbert
Ben		Hooper	Zhanwei		Hou
Ibrahim	Anwar	Ibrahim	Sisira Soori	iya Bandara	Karunaratne
Roger	G	Kermode	Gopichand		Lakshmana Prasad
Ka	Wing	Lee	Karen		Livesey
Christopher	C	Martinu	Sean		McGinty
Ozkan		Mehmet	Sarah		Murphy
Muhammad	Kashif	Naveed	Nasiha		Nikolic
Khan		Nishiyama	Chad		O'Neill
Scott		O'Brien	Ethan	Chia Sing	Oo
Ariane France	sca Roche	Paguia	Tony	C	Paul
Harry		Pittock	Franck		Poubeau
Matthew		Priestley	Steven		Regidor-Yanez
Graham	Robert	Seach	Thomas		Shilling
David	В	Smith	Roger		Sommers
Yang		Song	Ian		Stevens
Heidi	В	Stratti	Nazatul	Haque	Sultan
Robert	Stephen	Terry		Iimanshubhai	Thaker
Sweta		Thakur	Chandra		Thapa
Phuong		Tran	Nipuna	Hansika	Weerasinghe
Yunchao		Wei	Dan		Xiao
Jirong		Xu	Jiajia		Yang
Jian		Yang	Saif	U	Zaman
Xuyun		Zhang	Meng		Zhou
Linchao		Zhu	Xinqun		Zhu
			1		

## **Associate Members**

We have five new associate members.

Kathleen Beirne Brandt Ole Nigel Guangze Herring Zeng Gerrard Morsley Kent

## **Affiliate Members**

We have two new affiliate members

Joseph Kam Brian M Stasak

## **Graduate Student Members**

We have 103 new or upgraded graduate student members. Abhirup Dikshit and Anna Lidfors Lindqvist won prizes recently (which I paid out as treasurer). Vivek Sharma is an active volunteer so he has got money from me to cover spending on activities

Maysam		Abbasi	Abolfazl	Abdollahi
Mst	Nargis	Aktar	Hamid	Alinejad-Rokny
Md.	11411815	Asadujjaman	Julia	Axelrod
Ann	Mary	Baby	Felipe	Barboza da Silva
Jeewan	iviaiy	Basnayaka	Noah	Biddle
Timothy	David	Boye	Brooke	Campbell
Bianca	David	Chen	David	Cotton
James		Coyte	Thilini	Dahanayaka
Raman		Dhiman		Dikshit
Samir		Gautam	Abhirup Amin	
				Gharipour
Nargess Houman		Ghassempour Hatamian	Marjia Mingijan	Haque He
Yi			Mingjian Ridwone	_
		He		Hossain
Zheming		Hu	Yao	Huang
Jamil	C 1: -	Ispahany	Reenu Tresa	Jacob
Sadari	Samanmalie	Jayawardena	Shuyue	Jia
Xuan		Jiao	Chris	Johnathon
Kyrylo		Karpenko	Grant Paul	Kelly
Grace		Kennedy	Muhammad Usman Ali	Khan
Rinta	-	Kridalukmana	Balakrishnasarma	Kugeswarasarma
Quy	Don	Lam	Fucun	Li
Yun		Li	Yiwen	Li
Anna		Lidfors Lindqvist	Derick	Lima
Hangrui		Liu	Hangyue	Liu
Zhe		Liu	Chang	Liu
Baihe		Ma	Harry	Marquis
Khawaja	Fahad	Masood	Sourabh	Mishra
Yamin		Mo	Rahma	Mukta
Ahmed	Sameer	Musleh	Syed Haider Abbas	Naqvi
Andrew		Nell	Tien Dung	Nguyen
Harry		O'Donnell	Gaoyang	Pang
Stefania		Peracchi	Jessie `Ann	Posar
Ling		Qi	Javad	Rezazadeh
Shuvashis		Saha	Venkata Soma Sekhar	Sahukara
Nazmus		Sakib	Samta	Sapra
Paul		Scott-Taylor	Arun	Sebastian
Mohammad	Mousa	Shalby	Yashothara	Shanmugarasa
Vivek		Sharma	Yu	Shen
Rukshani	Nilakshika	Somarathna	Tianhang	Sun
Sureshan		Suntharalingam	Abbas	Tabandeh
Sean		Tan	Jin Yeong	Tan
Omid		Tavallaie	Diya	Thomas
Xiaoyi		Tian	Aron	Turner
Eduardo		Villasenor Alvarez	James	Vohradsky
Heng		Wang	intentional gap	<i>-</i> j
			mondia Sup	

Dinindu Koliya Harshanath	Webadu Wedanage	Xiaowei	Wu
Chixin	Xiao	Xiaoyan	Yang
Jian	Zhang	Jue	Zhang
Chenxi	Zhang	Dawen	Zhang
Zezheng	Zhao	Ping	Zhao
Yibowen	Zhao	Tianming	Zhao
Xuelan	Zhu	Jiayi	Zhu

## **New Student Membership**

## We have 41 new student members

James		Balding	Noor Alhuda	Mahmoud	Bani Mousa
Sarah		Bruggisser	Yuqian		Chen
Benjamin	Leigh	Davey	Pete		de Zwart
Yuhao		Ge	Minh	Nhat	На
Victor		Hernandez Moreno	Nb		L
Jeevika	Nikesh	Lalchandani	Chunhao		Li
Siyuan		Li	Asad		Lilani
Jiannan		Liu	Jonela		Lobo
Santhosh		Madangarli	Zaidoon	Adel	Magaref
David	John	Mansfield	Hannabeth	Felicity	Marchant
David		Merxhushi	Ardalan		Mirzaei
Jayden		Moore	Baodi		Ning
Halayudhar	Reddy	Palle	Andrew	Luke	Parker
Jeremy	Thomas	Parker	Luke		Pearson
Uswaththa Li	yanage Samalil	ka Lakmali Perera	Angus		Ritossa
Yuden	Yanru	Sae-Ueng	Suman		Saha
Sara		Salim	Omer		Seker
Yunchuan		Shi	Isheeta		Sinha
Mahendra		Subedi	Anshul		Trivedi
Anton		Tutoveanu	Anne	Marie	Vuong
Xinghao		Yang			

 $Submitted \ by \ Dr. \ Bruce \ Poon-e-mail \ \underline{adsphere@optusnet.com.au}$ 





## IEEE Limited Offer\*

# If you are a 3rd, 4th or a post-grad student in 2021\*\*

The IEEE NSW Section will sponsor your student membership fee!

#### **Instructions:**

- 1. Go to <a href="www.ieee.org/join">www.ieee.org/join</a> and register as Student Member.
- 2. Type in all your details. On the check-out process, press 'Print & Mail/Fax order' instead of 'Proceed to checkout'. From the browser menu, print to PDF.

Ensure your postal address and contact details will be valid for the next 12 months or more. Instead of sending the form to IEEE HQ USA, please forward a PDF copy of this application with <a href="Member/Customer number">Member/Customer number</a> under "Order Information"

(Name of the File: your name-IEEE NSW student membership offer.pdf) and a copy or your current student card (Name of the File: your name.pdf) to:

Arslan Kiyani ----- IEEE NSW Student Activities Chair e-mail: <a href="mailto:arslan.kiyani@gmail.com">arslan.kiyani@gmail.com</a> cc Dr Bruce Poon ----- IEEE NSW Membership Development Chair. e-mail: <a href="mailto:bruce.poon@ieee.org">bruce.poon@ieee.org</a>

If you are students of the following universities, please cc a copy of your application to the student branch (SB) chairs :

Macquarie University SB Chair: Vivek Sharma (vivek.sharma@students.mq.edu.au)
University of New South Wales SB Chair: Logan Peters (peters\_l@hotmail.com)
University of Sydney SB Chair: Mir Nahidul Ambia (mir.ambia@sydney.edu.au)
University of Technology Sydney: Huynh Nguyen Van (Huynh.NguyenVan@student.uts.edu.au)
University of Western Sydney SB Chair: Ms Manisha Arde (19643120@student.westernsydney.edu.au)
University of Wollongong SB Chair: Yani Theoharis (pit289@uowmail.edu.au)

\* The number of free student memberships is <u>limited</u> and will be awarded on a first come first serve basis. This offer excludes membership to individual IEEE societies which may be purchased separately. This offer is available only to students located in New South Wales. The free student membership offer covers the first year of membership only. Offer not available to current IEEE student members.

Deadline for submission is 4:00pm on the <u>30<sup>st</sup> of April 2021 or when quota is filled</u> (whichever comes first) and all applications will be processed from the beginning of April 2021.

\*\* Please attach a copy or your current student card.

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

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

Members will be notified by email when a new issue is posted on the Website. Future copies of *Circuit* will only be sent by paper mail on request.

## If you require Circuit to be mailed to you in 2021 please complete the form below:

Don't bother if you were already getting it by mail in 2020.

Please Detach

		receiving future	editions of <i>Circuit</i> by post
Member No:			Postcode:
(H)	` '	(M)	FAX
		nit 60, 1Tewkesbury Avenu	



## Patents | Trade Marks | Designs

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