IEEE

CIRCUIT

The Institute of Electrical and Electronics Engineers, Inc.

VOLUME 48 Issue 2 **July 2021**

Secretariat

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IEEE NEW SOUTH WALES SECTION
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http://sites.ieee.org/nsw/

Contents:

Editorial:

This is the twentieth newsletter I've edited. This one is being edited with the very latest stable version of Libre Office – 7.06.2.

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.

Sensor 2021 has been forced to go virtual, which isn't what they wanted. The flyer is still included, because it will go ahead, but strictly only on-line.

Vaccinations are under way but there's a long way to go before we will be able to generate a lot of activity to report.

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

Colin still wants to make Circuit more technically orientated - research, new techniques, new facilities, etc., but finding the content to make a real difference would seem to need a great deal more effort than anybody is willing to put in.

Chairman's Message

Hi Everyone,

I have been putting off the drafting of the Chair's report for the July issue of Circuit.
Thoughts have been going through my mind of what to say. Now the latest news this evening is that the Sydney area is now in lock-down for the next fourteen days till 9 July.

Until now things were gradually returning to normal. The June Section committee meeting was both face to face and virtual. Only a small number of us braved the cold weather to network with others in the face to face component.

I have been thinking of ways of getting more of us to be involved face to face. It is much easier to join a virtual meeting with no travel but one loses the incidental conversations where many new activities are conceived. As we are now in lock-down again, the July meeting will be virtual only. This highlights how quickly things can change.

What have we have planned for the rest of this year? We are planning for Unite 2021 on Friday 17 September, assuming we are not in lock- down. The Annual General Meeting will take place in November, but we haven't started planning it yet. Consideration has been given to have some social activities. Life Members had a luncheon earlier in the year but the recent one was cancelled due to lack of participants. Does the membership want social activities? Are we all too busy involved in our own things? Is the Section fulfilling your expectations? Some Chapters are quite active while others are nearly dormant. We are always looking for people to be involved in making things happen. If you either have some spare time or a burning desire for a particular event, we would be pleased to hear from you. The vitality of the Section depends on the involvement if its Members.

Next year is the 50th anniversary of an Australian IEEE section and plans are being formulated to celebrate this. It is expected that there will be a dinner and some involvement in Science Week. There is also a plan for another Milestone event. As things firm up, you will be advised on what is planned and how you can be involved.

I had better conclude my comments as the Editor is on my back to get the July issue out. I will be glad when things become semi normal again and we can have face to face meeting so I can get a real feel of what the Membership wants.

Regards,
Colin Elston, Chair – IEEE NSW Section

Editors note: this arrived much earlier than Colin's message for the last issue of Circuit, only a day after Bruce Poon's list of 440 new and upgraded members which is a real pain to get into Circuit - it take hours of tedious work. A day before would have made life easier. but it's nice to have Circuit finished before the section committee meeting.

Nomination Form for one position in the IEEE NSW SECTION
(For Executive and Appointed Officers)

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 2021 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:
Nominators must contact their nominee before submitting the form and confirm their acceptance of the time and other commitments required for the position.
Nominees must have had at least 2 years on the Committee to nominate for the key positions of Chair, Vice Chair, Treasurer and Secretary.
Nominees for Section Executive positions should be Senior Member or higher.
Self-nominations require the submission of additional information e.g. CV or SMIEEE referee
If you are nominating for more than one position, separate forms should be submitted.
Please note the closing date, completed forms to be emailed to:
Nominations Chair Mahmoud El Khodr ,e-mail: elkhodr@gmail.com who can provide more detail.
cc: Antony Zaglas e-mail: 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.

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. :

IoT Project demonstration on June 4, 2021 at School of Engineering, Macquarie University

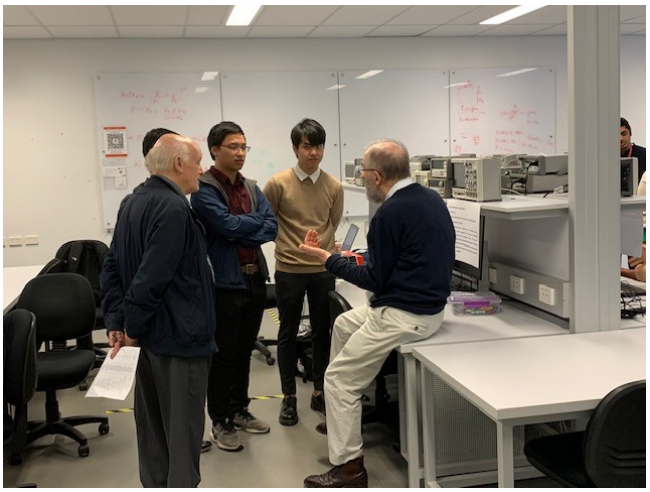
The students of the unit ENGG4201/8201 IoT System Design of Macquarie University demonstrated their hands-on project as a part of the technical activities of the IEEE Sensors Council NSW chapter.

The unit was delivered for the first time in 2021 and covered sensors, interfacing electronics, wireless communication, data uploading, cloud computing etc.

As a part of the assessment of the unit, the students need to select a project on their own and worked for the last 3 weeks to implement it. They were working on the project from week 10 and demonstrated their outcomes on Week 13, June 4.

The projects were judged by Mr. Colling Elston, Chair, IEEE New South Wales Section, Dr. Bill Sloman, Treasurer, IEEE New South Wales Section and Prof. Biswajeet Pradhan, Distingusihed Professor, University Technology Sydney. (Editors note: Colin and I didn't do all that much judging).

A few pictures were taken during the project demonstration.

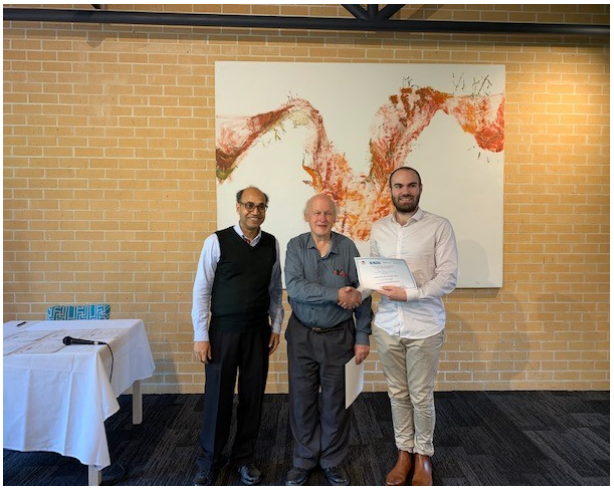


The judges (Dr. Bill Sloman and Mr. Colin Elston) interacting with the students.

Prof. Darren Bagnall interacting with the students

The students explaining their work to Prof. Ian Collings.

The students explaining their work to Prof. Tracy Rushton



First prize winner Chris with Colin and Subhas

Joint 2nd prize winners ENGG4210

People's choice winner with Bill and Subhas

Joint 2nd prize winners ENGG8210

Winners:

ENGG4210 IoT System Design
First: Christopher Sutton and Daniel Watson, project on Distributed and Wearable sensing
Joint 2nd:
Phil Mcmillan and Andrew Millar, project on Wireless node for precision agriculture
Keith Andrews and Cameron Aume, project on Satellite Tracking system
3rd place:
Vu Hoang, Tri Hai Vu and Quoc Hop Ta, project on Agriculture monitoring system
People's choice:
Humira Zaman and Trung Hieu Uong, project on IoT system to collect data to increase efficiency of solar panels

ENGG8210 IoT System Design
First: Fredo Chavez and Daryll Ralph D'Costa project on VISION
Joint 2nd:
Tejas Awasarmol and Sibin Thomas, project on Flood Monitoring Weather Reporting Systm
Devandra Deva and Nehal Dua, project in Facemask Detection System

Table: Detail of all projects

Group Number	Group Members	Project Title for ENGG4201
Group 1	Keith Andrews Cameron Aume	Satellite Tracking system
Group 2	Christopher Sutton Daniel Watson	Distributed and Wearable sensing
Group 3	Duc Dung Vu Vu Hoang Tri Hai Vu	Agriculture monitoring system
Group 4	Quoc Hop Ta Hayden Calvert	Weather measurement system
Group 5	Phil McMillan Andrew Miller	Wireless node for precision agriculture
Group 6	Liam Carroll A K M Shafiuzzaman Chowdhury	Project Security sensor
Group 7	Humira Trung Hieu Uong	IoT system to collect data to increase efficiency of solar panels

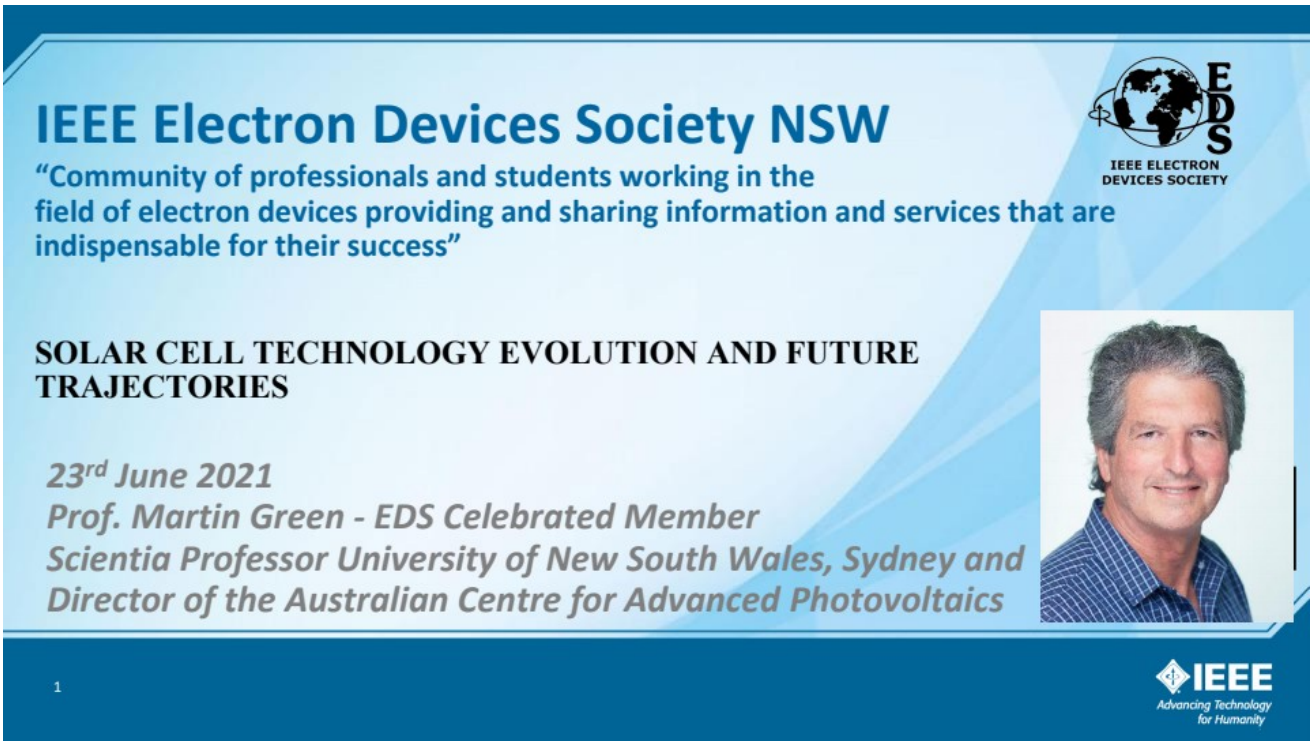
Group Number	Group Members	Project Title for ENGG8201
Group 8	Shaffan Naeem Bohong Cao Wilasinee Malee	Smart Logistics device
Group 9	tanmay karpe tarun teji	Continuous Monitoring of Methane and Temperature in Coal Mines
Group 10	Saurav Anil Dubey Pratik Dipak Raut	IOT based weather monitoring system
Group 11	Tejas Awasarmol Sibin Thomas	Flood Monitoring-Weather Reporting System
Group 12	Md Sajid Akbar Ishmam Mahmood	IoT Based Fire Alert System
Group 13	Md Redwanul Hasan Ridoy Syed Istiak Ahmed	Smart Compost System
Group 14	Devandra Deval Nehal Dua	Facemask Detection System
Group 15	Daryll Ralph D'Costa Fredo Chavez	VISION
Group 16	Tarun Teja Byra Vivek Yadav Nuchu	Monitoring Gas Levels & Seismic Activity in Tunnels
Group 17	Alekhya Prathuru Sai Deeksha Salapu	Rpi NFC logic with temperature
	Farhan Islam	

Group 18	Mirza Md Ishan Imtiaz	Smart Garden monitoring system
Group 19	Nathasha Jayasuriya Kuranage Showvik Chowdhury	Humidity and Light control system
Group 20	Syed Ali Ahmed Wenbo Gao Muhammad Saqib	Smart Home automation and security
Group 21	Muhammad Saad Iqtaida Ul Haq	Server Room Security System
Group 22	Amol Gurung Aasim Noor Khan	IoT based Greenhouse monitoring

The report was provided by Prof. Subhas Mukhopadhyay FIEEE

Subhas.Mukhopadhyay@mq.edu.au

Electron Devices Society Lecture



Online Webinar on Solar Cell Technology Evolution and Future Trajectories

On 23 June 2021, the ED NSW Chapter held an online webinar entitled "Solar Cell Technology Evolution and Future Trajectories" presented by the EDS Celebrated Member, Scientia Professor Martin Green from the University of New South Wales (UNSW) Sydney.

The webinar had over 50 registered participants, predominantly from Asia and North America. Prof Green presented an excellent overview of the history of the direct conversion of sunlight to electricity by solar cells. Solar energy is now the cheapest source of electricity in most countries.

It offers the lowest cost electricity the world has ever seen, with power purchase agreements (PPA) of 0.01 USD/kWh in a recent auction in Saudi Arabia. This tremendous reduction in the cost of solar electricity, particularly in the last two decades, resulted from the significant development of the solar industry in China, often by UNSW-trained entrepreneurs. In the last five years, the price reduction has been largely enabled by introducing the PERC (passivated emitter and rear contact) solar cell in industry, a higher efficiency silicon solar cell architecture that Prof Green invented at UNSW in the early 1980s. In addition to a new solar cell architecture, the industry has been reducing costs at every part of the value chain enabled by technological advancements such as continuous Czochralski pulling, diamond wire sawing, increasing the solar cell size, and shingling the solar cells to increase the fraction of the solar module that is covered with semiconductor.

The solar industry will still be able to increase the performance of silicon solar cells in the next few years until they reach the practical industrial limit of the single-junction silicon solar cell. After that, Prof Green believes that the industry will move to so-called tandem solar cells in which two solar cells with different bandgaps are stacked on top of each other. Stacking solar cells reduces the fundamental losses of the solar cell and consequently allows for higher energy conversion efficiencies.

Prof Green explained that initially one - and eventually perhaps two - higher bandgap thin film solar cells would be stacked on top of a silicon bottom cell extending the life of silicon in solar energy even further. Ultimately, the industry might move on to a complete thin film tandem solar cell based on their experience on the first few generations of silicon-based tandem solar cells. As the candidate for the top cell in the first silicon-based tandem is not yet decided, let alone the materials for the subsequent generations, Prof Green is confident that there is still a strong need for academic research in the area of solar energy!

Submitted by Prof. Bram Hoex vice-chair of the of the new Electron Devices Chapter

Editors note: The March 2018 Circuit included (on page 12) a brief obituary for Professor Stuart Wenham who had worked with Prof Green in this area at UNSW. Professor Green does happen to be a life fellow of the IEEE.

This report does emphasise the technical innovations that have helped cut the unit cost of solar cells. It doesn't mention the fact that if you merely optimise your production process to produce ten time the volume of product per year, you typically halve the unit price, which the Chinese did when they put the PERC solar cells into very high volume production. The fact that PERC cells produce more current per unit area than alternative technologies did motivate the Chinese to pick them as the parts that they were going to put into very high volume production, but the fact that solar cells now undercut any other form of electrical generation owes as much to massive financial investment by the Chinese as it does to spectacular academic expertise.

The Germans did exactly the same thing some twenty years ago, and managed to dominate the market until the Chinese spent a lot more money to pull off the same trick on a much larger scale.

Solar power generated only 2.7% of the world's electricity in 2019, so there's room for quite a lot more manufacturing capacity, and a bit more economy of scale. Whether tandem cells can ever be put together cheaply enough to be economically competitive isn't yet known. Places where solar farms compete with other uses of the same area may be prepared to pay more for cells with a higher output per unit area.

IEEE NSW Section Volunteer Awards 2021

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 August 2021.

Tony Zaglas, IEEE NSW Section Awards and Recognition Chair

2021.ieee-sensorsconference.org

IEEE SENSORS 2021

ICC Sydney – Sydney, Australia – Oct 31 – Nov 3, 2021

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 Packaging**
- **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

IEEE Advancing Technology for Humanity

IEEE Sensors Council

Please visit: **2021.ieee-sensorsconference.org**

New and upgraded Members of the NSW branch of the IEEE

For the period from the 1st March 2020 to the 31st July 2021.

New Fellows

None

Life Fellows

Just one - Neil H. Weste

Life Senior Members

We have no new life senior members

Life Members

We have two new life members.

John	O.	Edler	D.	G.	Wong

Senior Members

We have 21 new senior members. Sherry Moghadassi is particularly active, but may not be quite as new to the grade as the IEEE data-base has told me that she is

Joonsang		Baek	Kate	K.	Carruthers
Mohammad	Nazmul	Haque	Md.	Rabiul	Islam
Rafiqul		Islam	Sanjay	K.	Jha
Craig	T.	Jin	Ghassan		Kbar
James	A.	Lawrence	Zihuai		Lin
Adriana-Simona		Mihaita	Sherry		Moghadassi
Syamantak		Saha	Rajan		Shankaran
Mohit	Naresh	Shivdasani	Yam	Prasad	Siwakoti
Lei		Wang	Jia		Wu
Basit	Ali	Zeb	Luping		Zhou
Liming		Zhu			

Members

We have a lot more new members - 202 of them. It's nice to see that active members like Khushboo Singh, Luke Wicent Sy and Vivek Sharma have made the step up.

Rakesh	Sai	Adusumilli	Ashfaq		Ahmad
Haider		Ali	B. M.	Ruhul	Amin
Michael	James	Angell	Chirag		Arora
Rubin		Awale	Alpha		Bah
Kamini	Simi	Bajaj	Jeewan		Basnayaka
Alan	D.	Blair	Phillip	A.	Burns
Clement	Louis	Canonne	Siyuan		Chen

Xiaoshuang		Chen	Hon	Wah	Cheng
Tian		Cheng	Chee	Mun	Chong
Philip		Chung	Yuk	Y.	Chung
Joseph	Vincent	Cincotta	Sandhya		Clement
Enzo		Cocotti	Adelle	C.	Coster
David		Cotton	Kevin	L.	Cousins
Peter		Curran	Geoff		Currie
Hassan		Dehghani	Fernando	Javier	Diaz
Yong		Dou	Michael	H	Drewry
Zehao		Duan	Nicholas		Ekins-Daukes
Patrick	William	Facey	Peter		Faggion
Raphael		Falque	Ashif	Aminulloh	Fathnan
Sheik Mohammad Mostakim		Fattah	Masoud		Fetanat
Andrew	J.	Fleming	Natalia		Galin
Samir		Gautam	Frederik		Geth
Pradip	K.	Goon	Swaroop		Gopalam
Vincent		Gramoli	Chrispin	Alfred	Gray
Julian		Grodzicky	Anna		Guller
Hui		Guo	Yang		Guo
Minh	Nhat	Ha	Ferhat		Hajdarpasic
Waqas		Hassan	Murtaza	A.	Hassanali
Karina		Hehs	Chulani		Herath
Ridwone		Hossain	Chris		Howard
Steven		Howell	Ye		Huang
Mubashir		Hussain	Muzaffar		Hussain
Rowan		Huxtable	Saeid		Iranmanesh
Md.	Mainul	Islam	Sachini	Nisansala	Jayasooriya
Asanga	Priyankara	Jayawardana	Sarah	J.	Johnson
Simon	Peter	Johnston	Muhammad	Ashad	Kabir
K. M.	Mohibul	Kabir	Anthony	Peter	Kalcina
Shakir		Karim	Rajwinder		Kaur
W.		Keerthipala	Brendan		Kelly
Qasir	Irfan	Khan	Muhammad	Usman Ali	Khan
Say	H.	Khor	Andrew	J.	Kleinert
Rinta		Kridalukmana	Jatinder		Kumar
Mohammed	Hussein	Kurdi	Ali		Lalbakhsh
Cedric		Le Gentil	Edmund		Li
Xuesong		Li	Liwei		Li
Mengze		Li	Bo		Li
Chunhao		Li	Anna	Lidfors	Lindqvist
Hock	Siong	Lim	William		Lin
Jingyu		Lin	Wanchun		Liu
Liyang		Liu	Tianqi		Liu
Uvin	Kojitha	Liyanapathirane	Shibo		Lu
Mark		Macfarlane	Chamara	Manoj	Madarasingha
Imran		Makhdooom	Quazi	Ehsanul Kabir	Mamun
Gregory		Mar	Naddir		Masri
Pushpa	Kumara	Mataraaratchi	Christof		Mayer
Atul	Singh	Minhas	Yamin		Mo
Yashodhan		Moghe	Nabil	Abduljalil Abodo	Mohammed
Steven		Mok	Alan	T.	Murray

Chau Thi	Minh	Nguyen	Phuong	Thi Huyen	Nguyen
Huynh		Nguyen Van	Rukhiya		Nigar
Baodi		Ning	Mehdi		Nobakht
Samrat	Moorti	Pant	Mehrdad		Parsaei
Minh	Nguyet	Pham	Nav		Phokela
Sumedha	Nitin	Prabhu	Somanath		Pradhan
Rajneel		Prasad	Zahra		Rahimpour
Md.	Ashib	Rahman	Safdar		Rasool
Hualin		Ren	Anne	E.	Robins
Fiacre	Emile	Rougieux	Scott		Russell
Frances	V	Russell	Abhish		Saha
Animesh		Sahoo	Karam		Sallam
Abubakar	Sadiq	Sani	Arun		Sebastian
Konstantin	M	Seiler	Avishkar		Seth
Irfan		Shahid	Negin		Shariati
Pankaj	Kumar	Sharma	Vivek		Sharma
Qiaolin		Shi	Yunchuan		Shi
Khushboo		Singh	Sukhdeep		Singh
Paramvir		Singh	Stephanie	L.	Smith
Brandon		Speedie	John	T.	Spillane
Michael		Stevens	Pingyang		Sun
Hajime		Suzuki	Luke	Wicent	Sy
Jin	Yeong	Tan	Ronak	Himanshubhai	Thaker
Diya		Thomas	Carlos	Alfredo	Tirado Cortes
Jun		Tong	Tu		Tu
Aidan		Turner	Nagarajan		Valanoor
Marthinus Johannes van der		Westhuizen	Jue		Wang
Haiming		Wang	Fan		Wang
Yunqi		Wang	Qigejian		Wang
Aaron		Wedd	John		Welsh
Buddhi		Wickramasinghe	Simon		Wild
Amila		Withanaarachchi	Douglas	J.	Wright
Haiyang		Wu	Chixin		Xiao
Ying		Xu	Shihao		Yan
Xinzhi		Yan	Xiaoyan		Yang
Qi		Yao	Chanyeol		Yoo
Chentao		Yue	Qian		Zhang
Weizheng		Zhang	Yueyuan		Zhang
Xiang		Zhang	Haimin		Zhang
Yuanfang		Zhang	Tieling		Zhang
Muming		Zhao	Zezheng		Zhao
Ping		Zhao	Fang		Zhen
Xi		Zheng	Tengjun		Zuo

Associate Members

We have two new associate members.

Bo	Du	Oscar	Mayorca

Affiliate Members

We have four new affiliate members

Aleem	Mohammed	Juliana	Peniazeva
Anusha	Withana	Wenlang	Xie

Graduate Student Members

We have 144 new or upgraded graduate student members.

Ezwan	Shah	Abd Majid	Zubair		Abdullah-Vetter
Waqas Ahmed	Khan	Afridi	Lavanshu		Agrawal
Al Jumlat		Ahmed	Fowzia		Akhter
Sultan		Al Ghamdi	Md.	Morshed	Alam
Stefano		Aldini	Ahoud		Alhazmi
Hamzeh		Aljarajreh	Suhair		Alotaibi
Asem		Al Raddi	Azadeh		Arnaz
Amit		Aryal	Arief	Rachman	Ashar
Shajir		Askari	Reza		Barzegar
Julie	Stephany	Berrio Perez	Asmita		Bhattacharya
Saugata		Bose	Joel		Bottin-Noonan
Yoann		Buratti	Mark		Cardamis
Xiaomin		Chang	Yijun		Chen
Kai		Chen	Jianjun		Chen
Yuqian		Chen	Ishmam	Ahmed	Chowdhury
Giovanni		d'Urso	Yao		Deng
Prerna		Dhull	Antoni		Dimitriadis
Laura	Ivone	Dominguez	Yumeng		Du
Milos		Dubajic	Saurav	Anil	Dubey
Md.	Forkan	Elahi Anupam	Xiaochen		Fan
Yeman		Fan	Licheng		Feng
Matthew		Gibson	Vivasha		Govinden
Artur		Grigorev	Heranudin		Heranudin
Ambrose		Hill	Jason		Hodges
Mengying		Hu	Huaxi		Huang
Ragy		Ibrahim	Umair		Iqbal
Md.	Rafiqul	Islam	Klaudiusz	Kamil	Jakubowski
Sadari	Samanmalie	Jayawardena	Sanjay		Jha
Jignesh		Kakkad	Oscar		Karnalim
Huda	Hanif	Khan	Surendra		Khattri
Habes	Ali Ahmad	Khawaldeh	Stefan		Kiss
Arslan		Kiyani	Onder	Vincent	Koc
Scarlet		Kong	Jianming		Kuang
Hong	Quan	Le	Kunming		Li
Yue		Li	Tiancheng		Li
Mengdi		Liu	Xinyuan		Liu
Jingjing		Liu	Guannan		Lou
Yizhou		Luo	Sihan		Ma
Anupam		Makhija	Sidra		Malik
Mathumathi		Manoharan	Zhehua		Mao
Philip	Jakob	Mehrgardt	Ardalan		Mirzaei

Guzel		Nagaeva	Usman		Naseem
Prakat		Neupane	Ai	Thi Diem	Nguyen
Srinivas	M	Patnaik	Luke		Pearson
Sang	The	Pham	Linh		Pham
Huy	Cong	Phi	Watcharakorn		Pinthurat
Geedhika	Kallidil	Poduval	Asim		Pokhrel
Shridhar		Prabhuraman	Yanyi		Pu
James		Qin	Haytham		Radhwi
Obaidur		Rahman	Shiwani		Rasaily
Muhammad	Zain Bin	Riaz	Jack		Romanous
Subhash		Sagar	Manas		Saha
Suman		Saha	Pattaraporn		Sangaroonsilp
Din	Muhammad	Sangrasi	Pejush	Chandra	Sarker
Babar		Shahzaad	Hamish	Peter	Shaw
Brady		Shearan	Muhammad	Asif Alam	Siddiqui
Sajid	Akbar	Sium	Yang		Song
Muhammad Saad		Tariq	Bharat		Thapa
Kwun Yiu	Cadmus	To	Darren		Tsai
Thanh	Long	Vu	Terence		Vu
Jennifer		Wakulicz	Matthew	Keith	Walsh
Xiaoyi		Wang	Zhen		Wang
Ridho	Wastu	Widyawan	Lan		Wu
Jingyao		Wu	Muxin		Xu
Li		Yu	Michael	Ruisi	Yu
Shiduo		Yu	Dawen		Zhang
Yuting		Zhang	Yusai		Zhang
Shuai		Zhang	Yinzhe		Zhang
Susan		Zhang	Zhenyu		Zhang
Jiaheng		Zhao	Zhilin		Zhao
Qi		Zheng	Weiming		Zhi
Weina		Zhu	Yechen		Zhu

New Student Membership

We have 64 new student members

Fariha		Afsana	Bassam		Albaydani
Meshal	Moahmmed	Alsharif	E. M. Geethan	Sathsara	Ambanpola
Cameron		Aume	Thushal		Babukumar
Jarryd		Bedford	Lachlan		Campbell
Melvin		Chan	Richard		Clements
Thomas	William	Courtney	Bob		De Abel
Wenxuan		Duan	Liam		Elton
Georgia		Fardell	Yomali		Fernando
Preston		Fisher	Tarun		Gangolli
James	Alexander	Greer	Carel	Abraham	Greyling
Nathan		Hawkins	Yunjing		He
Syed	Imam	Imam	Cameron		Jones
Ethan		Joseph	Nicholas		Killeen
Killian		Kinsella	Evan		La Fontaine
Yihuan		Liao	Yang		Lin
Jing		Lin	Jamie	Anthony	Lorenz

Luke		Mariani	Jazmin		Martinez
Alexander		McKenzie	Alisa		Milaor
Beverley	L. P.	Mwenda	George		Najarian
Charlton	Flynn	Newell	Sean		O'Rourke
Halayudhar	Reddy	Palle	Kevin		Pham
Pratik	Dipak	Raut	Thomas		Reid
Jason		Ren	Muhammad	Saad	Salman
Peter		Santamaria	Rohan		Smith
Chris		Strazzari	Trung	Hieu	Uong
Prakriti		Upadhyay Wagle	William	Harry	Vallis
Rui		Wang	Qingxiang		Wang
Lewis	Maxwell	Watts	Kyle	Luke	Whitton
Shyam	Lakshmanan	Wijayakumaran	Chantelle		Wyllie
Yikun		Yang	Lehan		Yang
Yu		Yi	Yuming		Zhang
Chenhan		Zhang	Belinda		Ziesig

Submitted by Dr. Bruce Poon – e-mail adsphere@optusnet.com.au

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