JOINT TECHNICAL PROGRAM 2017 Electrical and Electronic Engineering
A program of general interest talks and visits, and a chance to network with people in your industry
(last updated 21 March 2017)

14th Feb 17
Host TelSoc

IoT of Things Network

Chris Wood B. Eng. with Hons in Electrical and Computer Systems, Chris has worked telecommunications industry at the beginning with Telecom Australia and later with Cable and Wireless with Hong Kong Telecom as systems architect, he has also started a company with UNI SA to develop and commercialise an industrial grade of augmented GPS system and in 2008 he co-founded Xped, an IoT technology platform for application layer.

His talk will cover the new trend and direction of IoT and human interaction to the technology and the potential this platform can provide.

28st March 17
Host IET

Site Visit: Biomedical- Associate Prof. John Costi Spinal implants and Flinders University Research labs site visit

John will talk about spinal implants and Flinders University Research labs at the site visit by Prof. John Costi (Professor of Mechanical Engineering). Prof. Costi will also give a talk about computational and experimental biomechanical testing of bone in six degrees of freedom and site tour to Flinders University Biomechanical engineering laboratory at Tonsley (where the Mitsubishi factory used to be located).

18th April 17
Host IEEE

Talk-A/P Keith Kikkert: "Towards a Renewable Electricity Supply: Opportunities, Threats & Requirements"

The cost of renewable energy is falling and for large scale installations the cost of wind farms and solar is now cheaper than the cost of installation of coal or gas generation. The cost of solar energy is falling more rapidly than wind so that large scale solar will be cheapest of all in the very near future. The difficulty with renewable energy is the short term variability. In SA there is often a 1 GW variation in wind power between windy day and a still day, so unless renewable energy can be stored or shifted around the country, the capacity of fossil fuel power generating capacity plant still needs to be close to the total maximum demand of SA.

Consumer based battery storage will in the near future have realistic payback periods, which will accelerate their uptake. Such a large introduction of customer owned generating plant will dramatically change the average power demand but may not change the peak power demands significantly.

By 2050, the UK, Germany and several other countries will only allow new electric passenger cars to be registered. Toyota will phase out petrol and diesel cars by 2050. If all cars are electric vehicles, the electric-power demand will double.

These trends will cause a significant change in South Australia's power generating mix, demands and economics. The presentation will discuss this and the steps that need to be taken to keep our lights on reliably.

16th May 17
Host EA

Solar Power Presentation

Sundrop Farms Port Augusta Plant – focusing on the Solar Thermal Plant

'In 2010 we began operating Sundrop Farms' first commercial greenhouse facility in South Australia. The greenhouse is situated at the top of the Spencer Gulf, near the city of Port Augusta. Given the lack of fresh water and the harsh climates, traditional horticulture isn't feasible in this area. With the help of our proprietary technologies, we have been growing delicious, natural and high-quality produce using Southern Ocean seawater and sunlight since then.

In 2014, we broke ground on a 20 hectare greenhouse which was completed in 2016. It uses a state-of-the-art solar tower to produce energy to power the plant growing systems and to heat and cool the greenhouses as required. It is 115m high and has 23,000 mirrors pointed at it. Our water once again comes from the Spencer Gulf, and is desalinated using our cutting edge thermal desalination plant.'

http://www.sundropfarms.com/facilities/

20st June 17
Host TelSoc

Site Visit: Red Flow – Battery

Telecommunications Society – Organisers:(Marek) Robert Tait

18th July 17
Host EA

""Uninhabited and Autonomous Surface Vessels"."

Dr Derek Rogers, FIEAust, CPEng Programme Manager and Engineering Manager, Centre of Excellence in Autonomous Vessels Maritime Systems, Saab Australia Pty Ltd.

"While aerial and underwater drones are increasingly prevalent, surface vessels are only now emerging due to the complexity of dealing with the sea-air boundary. Drones offer advantages for the dull, dirty and dangerous but more importantly they open up new operational concepts. In this talk Professor Rogers who is responsible for Saab's Centre of Excellence in Autonomous Vessels will discuss the various uses of uninhabited and autonomous surface vessels for defence, civil security and other applications along with regulatory, social and economic issues and the challenges of being a corporate entrepreneur or entrepreneur as it is better known."

15th Aug 17
Host IET

Site Visit: DPTI- Maged will confirm the site visit with Mohamed

IET – Emilio de Stefano and Maged Awadalla The visit will show DPTI's train simulator in use and how it is integrated into the driver training.

This visit will provide an insight to what DPTI is currently working on and what can be achieved in the future. DPTI only requires a list of names of students who will visit by the end of March.

19st Sep 17
Host IEEE

Site Visit: Adelaide Airport Limited Solar Installation
– Adelaide Airport Ltd (AAL) engaged Solgen to complete installation of a 1.17MW solar PV system on the roof of its multi-level car park from November 2015 to March 2016. At this time it's the largest rooftop solar installation in South Australia and the largest on an Australian airport. This project is central to AAL's commitment to reducing its carbon footprint, as demonstrated by becoming the first airport in the region to receive Airport Carbon Accreditation from Airports Council International. The event comprises a tour of the solar installation together with presentations by Stephanie Bolt, AAL Sustainability Manager, and Patrick Greene, Director, The Energy Project.

17th Oct 17
Host IET

STUDENT PAPERS NIGHT

Presentation at EA – Organisers: Emilio de Stefano and Maged Awadalla
Students from our three universities present their final year projects whilst competing in the IET Rex Jones Student Presentation Prize.

21st Nov 17
Host EA

Royal Australia Air force Wedgetail Technology Capability
Presentation at EA – Organisers: Marcelo

CPD Points : It is recommended that attendance at each of these presentations be counted as one CPD point under *Engineers Australia* guidelines

Venue: Engineers Australia, Sir Robert Chapman Theatre, Level 11, 108 King William St., Adelaide (except visits).
Dates: Meetings are generally held on the third Tuesday of each month.
Time: Light refreshments commence at 5:30 PM and the meeting at 6:00PM (except site visits and workshops).

For each event, a flyer presenting details of the event will be posted on the websites of EA, IEEE, IET and TSA (see the details overleaf). These websites will also inform about any changes to the above program. Bookings to the visits should be made using the EA's website. Numbers for visits are normally limited so book early - preference will be given to EA, IEEE, IET and TelSoc members.

ALL VISITORS ARE WELCOME!

THE COMMITTEE
The Committee normally consists of two representatives from each of the participating Institutions and Societies. The Chairperson is one of these representatives. The Minute Secretary is agreed by the previous year's Committee and is normally from the Institution/Society which will chair the Committee in the following year.

2017 JTP Electrical & Electronics Committee
Anthony Mew, Engineers Australia – Electrical College
Marcelo Botelho, Engineers Australia – ITEE College
Marek Kwiatkowski, TelSoc
Prof. Reg Coutts, TelSoc
Mark Pszczel, IEEE
Emilio de Stefano – IET
Mohammed Haque - IEEE

The Telecommunications Association (TelSoc) is a multi-disciplinary society whose aim is to promote knowledge, understanding and excellence in telecommunications and its applications including the digital economy. TelSoc's goals are: to keep members abreast of the latest developments and policies in telecommunications and the digital economy; to provide high quality networking with peers; and to promote excellence in the telecommunications community. TelSoc also plays a major role in collecting and preserving Australia's telecommunications history and has been doing so since the founding of the original society in 1874. Individuals involved or interested in telecommunications and the digital economy are most welcome to join TelSoc.
Website: http://telsoc.org

ENGINEERS AUSTRALIA is the national professional body for engineers, technologists and associates and with over 90,000 members is the country's largest and most diverse engineering association. Engineers Australia promotes the science and practice of engineering and represents public policy in engineering. Engineers Australia assists members to achieve their personal and professional goals by providing an extensive range of benefits, facilities and services at all stages of their careers. This is accomplished through graduate development programs, publications, presentations, workshops, site visits, technical presentations and career services. Engineers Australia defines the critical competencies required by professional engineers and engineering technologists in Australia, determines whether individual practitioners have demonstrated their capacity to deliver engineering services at these levels and administers the National Professional Engineers Register. Engineers Australia also accredits courses offered by tertiary education providers, under the Washington Accord, for international recognition and facilitates reciprocal membership of overseas institutions through Mutual Recognition Agreements.
For more information call: Ashlea Klingberg, Member Programs Coordinator, Engineers Australia, South Australia Division, Level 11, 108 King William St, Adelaide SA 5000
Office: (08) 8202 7100   Direct : (08 8202 7141)   Fax: (08) 8211 7702
Email: mailto:CFaulkner@engineersaustralia.org.au
Website: http//www.engineersaustralia.org.au

The **INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE)** has over 360,000 members in about 175 countries worldwide, with nearly 40% of the membership outside the USA. IEEE's technical activity is managed under the TAB (Technical Advisory Board) by 37 Societies and 4 Technical Councils, all of which have world coverage, and geographically under the RAB (Regional Activities Board) in 10 regions. Region 10, which includes Australia, is the last region formed, covers the Asia-Pacific, about half of the world's population, and has been the fastest growing IEEE region in recent years. All Australian states except Tasmania and the Northern Territory have at least one section (Queensland has two), and these sections form the IEEE Australia Council. The IEEE South Australia Section has about 450 active members, with 5 technical society chapters, a GOLD affinity group and 3 Student Branches. The Section has staged a number of major international conferences in Adelaide and elsewhere including ICASSP 94, APMC 2000, RADAR 2003 and ASCC 2004. For further information contact: The Secretary, IEEE SA Section, PO Box 53, Elizabeth SA 5112.
Email: south.australia@ieee.org
Website: http://ewh.ieee.org/r10/s_australia/

The **INSTITUTION OF ENGINEERING AND TECHNOLOGY (IET)** is an international organisation with over 150,000 members throughout the world who have joined together to promote the advancement of electrical and electronic science and engineering. The IET was formed in 2006 from two separate institutions: the Institution of Electrical Engineers (IEE) dating back to 1871 and the Institution of Incorporated Engineers, dating back to 1884. The IET publishes material on a wide range of related fields, with the ultimate aim of sharing and advancing knowledge to enhance people's lives around the world. The IET comprises of over 100 Professional Local Networks that exist all around the world that link students, industry and academia with a common interest, promote the importance of science, engineering and technology to the general public and provide opportunities for engineers to share and develop knowledge and network with each other. The South Australian and Northern Territory (SA & NT) Local Network is managed by a diverse and active group of volunteers, comprising of University students, engineering professionals, retired engineers and academia. Individuals are most welcome to join the local network and discover upcoming events. Additional details are available on the IET's local web page home page (see below). Local contact details: Ms. Sophie Ball, Honorary Secretary, IET SA & NT Local Network.

Email: sball@theiet.org
Website: www.theiet.org/sant