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IEEE NEW SOUTH WALES SECTION
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Volume 42 Issue 1**March 2013****Contents**

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Editorial

As we enter 2013 I look forward to the New Year and the opportunity to serve as Vice Chair for the NSW Section. I would like to thank all that voted for me and look forward to working with the Chair and Committee to provide better services for Members.

Last year 2012 was the first occasion the NSW Section conducted the election for Section Officers via the new vTools election facility. The voter participation was unfortunately quite low and was partially disrupted by the events surrounding hurricane Sandy. In any event I believe that the electronic voting system is fairer as more members have the opportunity to exercise their rights. I would like to thank all that voted and urge every Member to participate in future elections.

As always contributions to CIRCUIT by Members are welcome. If you have any interesting news to report, events that would be of interest or developments in research please do not hesitate to contact me.

Should anyone be interested in the position of CIRCUIT Editor, or committee participation, please contact our Nominations Chair John Robinson.



Antony Zaglas antonyz@ieee.org
 Editor, CIRCUIT Newsletter, NSW Section

1. Message from the Chair

Thank you for your vote of confidence for me to continue for the 3rd term as the NSW Section Chair in 2013. I will endeavour to maintain and improve the Section performance of previous years. I would like to thank Ian Boyd for his contribution these past two years to the Section as the Vice Chair and to welcome the new Section Executives: Antony Zaglas - Section Vice Chair; Mark O'Mally - Section Treasurer; John Ypsilantis - Section Secretary; and Dushmantha Thalakatuna - Assistant Secretary.

This year, Region 10 Meet will be held at Chiang Mai, Thailand from 2 to 3 March 2012. In addition to the R10 Meet 2013, the Australia Council will hold their 1st meeting a day earlier at Chiang Mai.

As we work on a new area of interest, we seek your feedback on member benefits that you would like to have from your Section. We will have volunteers to look into these member benefits from this year onwards.

For our educational activities, we have postponed the IEEE Teacher in Service Program (TISP) workshop in Sydney to Sept 2013, as there is much background work to be done with the local education boards and governing bodies to accept the IEEE TISP materials prior to the workshop.

For the Region 10 IEEE TENCON SPRING 2013 Conference in Sydney, Australia, we will be hosting it from 17 to 19 April 2013 at Radisson Blu. I would like to thank Stefan Mozar for his leadership as conference chairman as well as the conference committee for the organisation of this conference, where I look forward to meeting members from all over the world.

Let us look forward to many other international conferences lined up in 2013 and 2014 to be held in Sydney, Australia. I look forward to your participation in these activities.

And so, I wish you a most excellent year ahead.



Eddie Fong eddiefong@ieee.org
Chair, NSW Section 2011-2013

2. News in Brief

2.1 Awards and Recognition

Antennas and Propagation President and NSW Section Past Chair Prof Trevor Bird has been awarded the Region 10 Outstanding Volunteer Award. Prof Bird has been a tireless worker for the Society and the NSW Section over many years; he is currently serving on the IEEE NSW Section Nominations Committee. His award has been collected by Section Chair Eddie Fong at the Region 10 Meeting in Chiang Mai Thailand and will be officially presented to Prof Bird at the 2013 AGM.



Prof Bird was nominated by NSW Section Awards and Recognition Chair Dr Graeme Gwilliam

Antony Zaglas antonyz@ieee.org
Vice Chair, NSW Section

2.2 NSW and Australia Council Committees

2012 was a busy year, the highlight being the move to electronic voting improving democracy and transparency for the benefit of all members. 2400 qualified members were able to vote for 3 of the 4 major Section Officers (the Treasurer Mark O'Mally was omitted as he was voted in for a 2 year term at the November 2011 AGM meeting). Officers are all IEEE volunteers and were elected to serve a one-year term in 2013.

However it was disappointing that less than 5% of the qualified voters choose to vote. This year we are planning some incentives to improve the vote for 2014 Officers to be held next November. We have attracted new volunteers to take on some of the ever increasing workload.

John Ypsilantis was elected as Section Secretary, with Dushmantha Thalakatuna Assistant Section Secretary.

The Australia Council elections resulted in the

following being elected:

Lance Fung Chair(WA)

Abbas Bigdeli Vice Chair(QLD)

Mohan Jacob Secretary(NA)

Martin Leaver Treasurer(ACT)

Arkadiusz(Arek) Dadej Immediate Past Chair(SA)

The NSW Section nominations for Australia Council positions were unfortunately unsuccessful.

Please visit the IEEE NSW Section web page for details of all Committee Officers and positions at <http://ewh.ieee.org/r10/nsw/>

I would again ask members to please consider Nominating for service on the Section Committee as well as for elected office.



John Robinson jl.robinson@ieee.org
Chair Nominations, NSW Section

2.3 2012 AGM and Annual Dinner

The NSW Section Annual General Meeting (AGM) was held at the Radisson Hotel, 72 Liverpool Street, Sydney on 23 November 2012.

There were several Chapter and Affinity Group AGM's these being followed by the Section AGM. The annual dinner followed the Section AGM. There were over 50 at the AGM and over 70 Members and guests attended the dinner. Many thanks to Eddie Fong for organising the function, Ian Boyd for performing the MC duties and Michelle Boyd for attending to the registrations.



Society Presidents Prof Trevor Bird and Stefan Mozar



Chair Eddie Fong with EA Past Chair Amal Hanna

Prof Karu Esselle was presented the 2011 Region 10 Outstanding Councillor Award by Eddie Fong. Prof Esselle was nominated by the Macquarie University Student Branch Second Place winners in the R10 Exemplary Student Branch Award.



Chair Eddie Fong Presenting Jan Shvarzshnaider his Award

IEEE NSW Section sponsored the Sydney University 2012 Post Graduate Research Conference. Prize winners were Ms Mahboobeh Moghaddam for IT – with her paper “An Auction-Based Approach for Composite Web Service Selection” and Mr Yan Shvartzshnaider for EIE – with his paper “Information-Centric Architecture to Support Agile Disaster Response”

Mr Steve Shu Ning Bian was unfortunately not able to be present to receive the IEEE Sydney University Student Branch Best Seminar Prize for his paper presentation on “Lessons from the trenches: what I learned in the process of creating sensors to measure how fat babies are”.

During the Dinner entertainment was provided by the Grace String Ensemble. Many thanks to Eddie Fong for sponsoring and organising the entertainment.



Chair Eddie Fong Presenting Prof Karu Esselle his Award



Chair Eddie Fong Presenting Ms Moghaddam her Award



**Antony Zaglas antonyz@ieee.org
Vice Chair, NSW Section**

2.4 TENCON Spring 2013 Conference

The inaugural IEEE TENCON Spring 2013 conference will be held at the Radisson Blu Hotel in Sydney, Australia from 17 to 19 April 2013.

For program and additional details, please visit <http://www.tencon2013.org.au/>.

The Conference will include a “doctoral workshop” open to PhD students. It will provide Doctoral students with an opportunity to learn more about how to present papers, and how to improve or expand on their research. Best paper prizes will be presented in a few categories. Best student paper awards will also be presented.

Keynote speakers will include Prof Mary O’Kane NSW Government Chief Scientist and Engineer, Bob Frankston Co-inventor of the Spreadsheet, Prof Gerald B Sheblé(FIEEE) Professor & Ausgrid Chair in Power Economics UNSW, Prof Trevor Birdand(FIEEE) and many others.

The social program will include a Sydney harbour dinner cruise and there are many other interesting social events for spouses and opportunities to visit Sydney and its surrounds.

The Organising Committee welcomes offers of patronage from interested parties. The patronage packages listed below can help you showcase your brand’s excellence to the IEEE community.

- **Diamond Patron**
- **Platinum Patron**
- **Gold Patron**
- **Silver Patron**
- **Bronze Patron**
- **Other Patron Opportunities including Sponsoring of Student Prizes**

If you require more information, have any questions, or would like us to customize a package just for your company, please contact Tony Zaglas Conference Sponsorship Chair antonyz@ieee.org.

Registration Fees

- **IEEE Member: \$750.00**
- **IEEE Student Member: \$470.00**
- **Non-IEEE Member: \$830.00**
- **Non-IEEE Student Member: \$530.00**

The organising team looks forward to welcoming you to TENCON Spring, Sydney Australia in April 2013

Stefan Mozar
General Chair

Eddie Fong
General Co-Chair

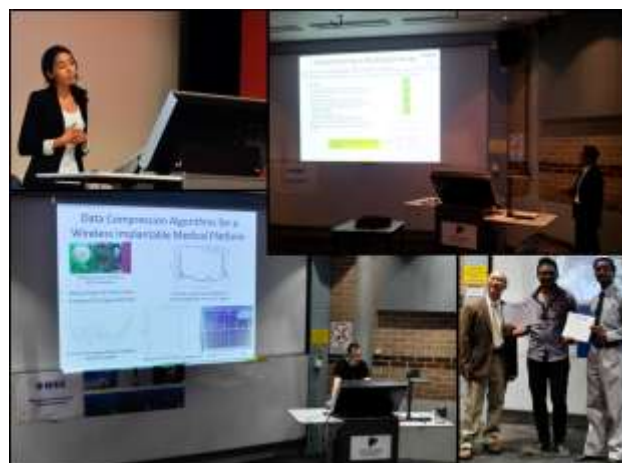
2.5 Macquarie University IEEE Student Branch Activities

IEEE Macquarie University student branch update
IEEE Macquarie University Student Branch has started a three minute thesis presentation “3MTTM” competition for the final year engineering undergraduate students at Macquarie University.

The main aim of the event was to provide the students a platform to present their thesis work within a limited time. This branch activity was held on 30th November 2012 and the event was attended by undergraduate and postgraduate students, faculty/ department staff and IEEE members. Cash prizes of \$100 AUD and \$50 AUD were awarded to first and second place winners. In addition to these awards, a people’s choice award of \$50 AUD was also awarded along with certificates. The activity concluded with an interactive social session followed by refreshments.

Another activity in November was an IEEE distinguished lecture from Dr. Arun K. Bhattacharyya on Floquet modal based Analysis of Finite and Infinite Phased Array Antennas which was held on 26th of November 2012. This distinguished lecture was a joint activity with IEEE NSW AP/MTT chapter, IEEE Student Branch @ Macquarie and IEEE Macquarie University MTT Student Chapter.

In December 2012, IEEE branch members provided their support to First Lego League (FLL) robotic competition at national level held on 08th December 2012. The members represented Macquarie university IEEE student branch and the IEEE NSW section in this event by volunteering as technical judges. IEEE branch members also volunteered as technical judges for the FIRST™ Tech Challenge (FTC) held on the following day at Macquarie University. Further information on MQ IEEE student branch activities can be found at <http://engineering.mq.edu.au/~ieeesb/>.





Photos of IEEE student branch activities organized by the MQ student branch covering IEEE distinguished lecture From Dr. Arun K. Bhattacharyya and 3MTTM thesis presentation competition. Top right to left; IEEE distinguished lecture From Dr. Arun K. Bhattacharyya, Participants of 3MTTM thesis presentation competition.



Syed Muzahir Abbas
Chair-IEEE MQ student branch

2.6 Sydney University IEEE Student Branch Activities

Sydney University IEEE Student Branch Activities

The University of Sydney welcomed students joining for the semester 1, 2013 through extraordinary information and excitement filled orientation week held on 27th February -1st of March. Among these days, 27th of February was a very special day for the IEEE student branch at the University of Sydney. The engineering lawn near the Peter Russell Nicole building in the Darlington campus of the University of Sydney was specially allocated for engineering related institutions. With many other highly reputed engineering institutions, our student branch also had a booth. We, committee of the branch, were excited to launch our very first activity of this year. We were ready with information, resources, freebies and above all friendly smiles. Around 11 in the morning, just after the faculty welcome finished, students started gathering in the engineering lawn. In our booth we received numerous students seeking information on the IEEE and the student branch. The post-

graduate students much appreciated the scheme of free IEEE student memberships offered through the branch. Besides, everyone was excited about the scholarly talks that the branch arranges every month. The most important thing I found during the orientation day was the direct communication with the students. While most of us are really busy and have to usually rely on electronic communications, there is nothing more rewarding than interacting with students and spread our enthusiasm about the IEEE student branch. I believe, by the end of the orientation day, we were successful to plant seeds of that enthusiasm among the new students. To make the event successful, Luke Zhang, vice-chair, Gillian Pan, treasurer and Robert Webster (in photo), membership development chair, worked very hard. A special thanks to them. Besides, Mr. Bruce Poon of IEEE NSW section membership development chairman supported this event with his suggestion.



With the semester officially started from 4th of March, we have a very active semester ahead of us. We will continue to arrange talks and seminars from national (within and outside of our university) and international distinguished speakers. Besides, we will also arrange talks from post-graduate and undergraduate students so that they can continue to excel their research through the interaction and their presentation skills. We are starting the semester with two scholarly talks from Associate Professor Salil Kanhere, University of New South Wales on 25th and Professor Hong Yan, City University of Hong Kong on 26th of March respectively. All talks will be accompanied with light refreshments. The details of the talks are as below:

Date: 25/03/2013, **Time:** 1-2 pm

Location: Room 261, Building J03, School of Electrical and Information Engineering, University of Sydney.

Speaker: Associate Professor Salil Kanhere, School of Computer Science and Engineering, University of New South Wales, Sydney, Australia.

Title: Participatory Sensing: Crowdsourcing Data from Mobile Smartphones in Urban Spaces

Abstract: The recent wave of sensor-rich, Internet-

enabled, smart mobile devices has opened the door for a novel paradigm for monitoring the urban landscape known as participatory sensing. Using this paradigm, ordinary citizens can collect multi-modal data streams (e.g., audio, video, sound, location coordinates, etc) from the surrounding environment using their mobile devices and share the same using existing communication infrastructure (e.g., 3G service or Wi-Fi access points). The data contributed from multiple participants can be combined to build a spatiotemporal view of the phenomenon of interest and also to extract important community statistics. Given the ubiquity of mobile phones and the high density of people in metropolitan areas, participatory sensing can achieve an unprecedented level of coverage in both space and time for observing events of interest in urban spaces. Several exciting participatory sensing applications have emerged in recent years. For example, GPS traces uploaded by drivers and passengers can be used to generate real-time traffic statistics. Similarly, street-level audio samples collected by pedestrians can be aggregated to create a citywide noise map. In this talk, we will provide a comprehensive overview of this new and exciting paradigm and outline the major research challenges.

Brief Biography of the Speaker: Salil obtained a B.E. in Electrical Engineering from VJTI, Bombay, India in 1998 and received his M.S. and Ph.D., both in Electrical Engineering from Drexel University, Philadelphia, USA in 2001 and 2003 respectively. Salil is currently an Associate Professor with the School of Computer Science and Engineering at the University of New South Wales in Sydney, Australia. His current research interests are in the areas of pervasive computing, sensor networks, participatory sensing, mobile networking and security/privacy. He has published over 90 peer-reviewed manuscripts and delivered several tutorial seminars on these topics. Salil is an associate editor for the Transactions on Emerging Telecommunications Technologies, the International Journal of Ad Hoc and Ubiquitous Computing and the ICST Transactions on Ubiquitous Environments. He has served on the Organising Committee and Program Committee of numerous IEEE and ACM conferences. Salil is a Senior Member of both the IEEE and ACM.

Date: 26/03/2013, **Time:** 1-2 pm

Location: Room 261, Building J03, School of Electrical and Information Engineering, University of Sydney.

Speaker: Professor Hong Yan, Department of Electronic Engineering, City University of Hong Kong, Kowloon, Hong Kong

Title: Computational Methods for the Prediction of Biomolecular Interactions and Drug Resistance

Abstract: In biological systems, proteins are extremely "intelligent". They can interact with other

molecules and carry out sophisticated molecular recognition tasks, which no existing computer based pattern recognition methods can match. In this talk, I'll discuss how pattern consistency and compatibility measures can be used to understand and analyze biomolecular interactions. I'll present a 3D pattern matching technique for identifying potential hydrogen bonds from all possible donor and acceptor atoms in two biomolecules. In this algorithm, compatibility measures developed in pattern recognition are used to formulate cooperatively in biological systems mathematically. Our method is able to pair a large number of donors and acceptors in multiple hydrogen bonds simultaneously. This method has been applied to protein-protein and protein-ligand docking with good results. Our pattern matching based algorithms have also been used successfully for drug resistance prediction. We can determine whether a drug can still be effective for a protein mutant. Our experiment results on cancer drugs correlate well with clinical data.

Brief Biography of the Speaker: Hong Yan received his PhD degree from Yale University. He was Professor of Imaging Science at the University of Sydney and is currently Professor of Computer Engineering at City University of Hong Kong. His research interests include image processing, pattern recognition and bioinformatics, and he has over 300 journal and conference publications in these areas. Professor Yan was elected an IAPR fellow for contributions to document image analysis and an IEEE fellow for contributions to image recognition techniques and applications.



Ahmed Surobhi, ns.ahmed@sydney.edu.au
Chair, IEEE Student Branch, University of Sydney

2.7 Australian Engineering Week

Australian Engineering Week(AEW) will be held between 5 and 11 August 2013. Major Events include the Harrick's Address, Engineering Breakfast, Forum, Great Engineering Challenge, Bridge Building Competition, UTS Tower Building Competition, Young Engineers Trivia Night, Site Visits, Events at Macquarie University, Sydney University, UNSW, UTS and other venues.

AEW is intended to promote Engineering to school age students and to the community in general. Should you be interested in supporting or sponsoring AEW or participating with specific Events or Site Visits please contact Jenny Ha JHa@engineersaustralia.org.au or Myself.

Antony Zaglas antonyz@ieee.org
Vice Chair, NSW Section

2.8 IEEE Web Account and Email

I would like to request all members who have created a web account and have not updated their details to do so at their earliest convenience. You may do so at: http://www.ieee.org/membership_services/membership/my_ieee.html?WT.mc_id=tu_myieee and clicking Access myIEEE. A Sign in window will request your login information. Alternatively you can visit http://www.ieee.org/go/my_account. If you have forgotten your user name and password you can click Forgot username or password and you will be guided through the recovery procedure.

If you do not have a web account I would encourage you to create one to take advantage of additional IEEE services including an IEEE email alias. You can create a web account by visiting http://www.ieee.org/go/create_web_account

Members requiring additional assistance can reach the IEEE Support Centre at http://www.ieee.org/about/contact_center/index.html then clicking "Visit Support Centre".

You can also email: contactcenter@ieee.org

445 Hoes Lane

Piscataway, NJ USA 08854

Telephone Worldwide: +1 732 981 0060

2.9 Membership Report

By 31 January 2013, we had a total of 2,842 active members(including affiliates). Compared to the same time last year, we have an increase of 119 members [from 2,723 to 2,842].

For those who have not renewed their membership, I urge you to renew it as soon as possible in order to enjoy the continuous benefits of being an IEEE member.

We will continue our Free Student Membership offer for 2013. A Flyer is attached to this edition of CIRCUIT and will be available for distribution shortly.

For members who are qualified to be senior members, I would like to urge you to upgrade to senior membership in order to boost the status of our Section. To upgrade to senior member, you will

require three referees. However, if you are being nominated by the section, you only require two referees.

More information and application form at: http://www.ieee.org/membership_services/membership/senior/app_guide.html

If you would like to discuss upgrading your membership, or any other membership related matters, please contact me with your details, I would be very happy to assist you.

I would also like to inform those members that are nearing Life Member status the IEEE will contact you when you are eligible so please make sure your contact details in the database are current.

In late 2012, I also took on the role of IEEE NSW Section Webmaster: <http://ewh.ieee.org/r10/nsw/> I welcome your suggestions to improve & update the web site to make it more effective.



Bruce Poon bruce.poon@ieee.org
**Membership Development Chairman,
 And Webmaster
 IEEE NSW Section**

2.10 Welcome to our New and Upgraded Members

Life Senior Members

Victor J Gosbell

Life Members

Alan C Young

B B Jones

Frank Zaknic

Hugh R Outhred

Peter Garde

Phillip J Mckiernan

Senior Member Grade

Alexander A Burnett

Ashok Manglick

Branko G Celler

Dusan Baljevic

Gregg J Suaning

Senior Member Grade Cont.

Hendra I Nurdin

John Fletcher

Kegen Yu

Luping Zhou

Raymond A Brown

Rob Nicholls

Sarath P Perera

Sherif Sakr

Shiping Chen

Stuart Jackson

Zhiyong Chen

2.10 Welcome to our New and Upgraded Members Cont.

Member Grade

A S Sajeev
Alejandro G Donaire
Alex H Ng
Alok Bansal
Anand Gandhi

Andrew Docherty
Andrew John Kennedy

Anton Benjamin
Aubrey G Jarkey
Bill Donald Carman
Byron N Wicks
Carl D Harrap
Chi Yan Tang
Chris Druitt
Darshan Suresh Thakkar
Dennis P Turner
Donald Roger Mulligan
Dorotea Baljevic
Emily Meers
Fabio T Ramos
Gavin Paul
Geoff Kidd
Geoffrey D Horn
Graeme John Sutton
Harry Aghayan
Hon Wah Cheng
Hye Ri Kim
Igor Chernishov
James Yoo
Janine Frances Hiddlestone-Lea
Janis Emolins
Jason Brown
Jason Neatherway
Jason John Sawras
Jayson Bryce Badenhop

Jianlong Zhou
John Ronczka
Jonathan R Mitchell
Katerina Korsun
Kathirgamanathan Sabesan
Kelvin Proctor
Lanna K Carruthers
Leigh Kathryn Wilby
Lijun Chang
Lindsey J Bignell
Malcolm Graham Cox
Manas K Patra
Mari Velonaki
Mario Gonzalez
Mark Whitty

Member Grade Cont.

Mark A Norrie
Md Rezaul Bashar
Michelle Cho
Min Li
Mohammad Jafari
Mostafa Al Masum
Shaikh
Muhammad Aamir
Cheema
Paul O Ogunah
Pei-Yuan Qin
Peter Lloyd Kench
Rakesh K Agrawal
Richard Zillman
Richard J. Murphy
Ronald Y Li
Scott O'Brien
Seth Yates
Stephen Singam
Stephen J Redmond
Stephen V Hanly
Steven Guy Clifton
Susanna Guatelli
Syed Ahmed Pasha
Terry Douglas Cocks
Thomas Michael Cooney
Tim A Aubrey
Tony Forward
Van H Ho
Vellimalai Karuppanan
Victor Tam
Xiaofeng Wu
Xinhua Zhu
Yan Xu
Ying Zhang
Yiu-Fai Tam

Graduate Student Members

Aaron Seng Wai Wong
Aarthi Natarajan
Abu R Ullah
Alam Md Zahangir
Alan T Murray
Alex Probst J Probst
Alexander Hayes
Andrew Nicholson
Andrew P Bradshaw
Andrian Sue
Arpit Gandhi
Artemij Iberzanov
Asher Bender
Augustine H Le

Bappi Barua
Can Wang

2.10 Welcome to our New and Upgraded Members Cont.

Christine Poon

Graduate Student Members Cont.

Chao Zhai
Chen Chen
Chengyuan Zhang
Christine Poon
Christopher Rowe
Craig Stewart Anderson
Daniel Wilson
Debabrata Kumar Karmokar
Dinuka Abeywardena
Fatih Gocturk
Ghulam Murtaza
Gregory Kevin Cohen
Hamid Reza Teymour
Haydn Keir Mearns
Hiranya Samanga Jayakody
Huy Hoang Nguyen
Hyuntae Choi
James Daniel Foster
James Hamilton Laird
Jianbin Qin
Jon E Davis
Jonathan Charles Knott
Joseph Nguyen
Jung-Ha Kim
Ken Po Lam Ho
Kenny Hong
Kewei Clare Guo
Kristina Alberto
Lachlan McCalman
Les Bell
Madu Prasad Hemakumara
Mao Shan
Marc Patrick Hans Zapf
Mark Havryliv
Matthew Field
Md Shahidul Islam
Michael Hunter
Mikhail Vsevolodovich Konnik
Mitra Mirhosseini
Mohammad Wahid Nobakhti
Mojtaba Golzan
Muhammad Awais Javed
Nazifa Tahir
Nonie Politi
Parastoo Golmohammadi
Peiyao Li
Peter W Davidoff
Phillip Tran
Raheel Maqsood Hashmi
Raynold R Vaghela
Richard Brasier
Robert Jandausch
Rosheila Darus
Ryan James Richard
Thompson
Shiveen Pandita
Shiyu Yang

Graduate Student Members Cont

Steven Limpert
Tahereh Noohi
Thomas Owen Glanville
Tom Molomby
Travis N Stenborg
Vladimir Z Tosic
Wei Li
Weiren Yu
Wing Yan (Victor) Chu
Xiang Zhao
Xiaoling Zhou
Xiaoyang Wang
Yan Shvartzshnaider
Yifang Sun
Yin Song
Ying Liu
YongKhing Tan
Yulei Sui
Zhan Shi
Zhengrong Huang

Affiliate

Hye-Young Paik
Jinson Zhang
Sam Mason

Associate Member

Raymond King
Wenjie Zhang

Student Member

Serge Rozentsvet
Alec John Posney
Ashley Horne
Danielle M. Rager
Faisal Vistro
Michael Troup
Mustaquim T Raupp
Nicholas J Anderson
Phillip Quin
Simeon Ghobrial
Tianle Tong
Udit Sethi
Wajahat Hussain Khan
William Andrew

3. Chapter News

3.1 Communications/Signal Processing/OCEANS Chapter

IEEE Oceanic Engineering

Dr Brian Fergusson Nominated for IEEE Fellow Grade

Dr Brian Fergusson has been nominated by IEEE Fellow Clifford Carter to elevate him to an IEEE Fellowship. Six Fellows agreed to submit references together with one Senior Member endorsement. All evaluations were completed and submitted over the Internet well before the deadline of 01 March 2013 at 23:59 hours Eastern Standard Time.

The entire process takes around 9 to 10 months because there are endless IEEE Committees and Society personnel to take part in the acceptance of an individual. The IEEE Grade of Fellow is conferred by the Board of Directors upon a person with an extraordinary record of accomplishments in any of the IEEE fields of interest. The total number selected in any one year cannot exceed one-tenth of one percent of the total voting Institute membership. Each new Fellow receives a high quality matted and framed certificate with the name of the Fellow and a brief citation describing the accomplishment, a congratulatory letter from the incoming IEEE President and a gold sterling silver Fellow lapel pin with antique finish.

In New South Wales Section we are proud to have 4 Life Fellows and 27 Fellows amongst our growing membership

OES Lecture at Engineers Australia Newcastle

Following an invitation to Brian Fergusson from Cameron Shortland, Chairman, Electrical Branch, Engineers Australia, Newcastle Division an OES technical meeting was held on 14th November at Engineers Australia 100 seats Auditorium, 122 Parry St Newcastle West. The topic for the presentation was "Acoustic Systems Research and Development for Defence Applications" delivered by Brian Fergusson. It featured the inner workings of acoustic detection, classification, localisation and tracking systems designed for sources of military interest, which range from snipers to jet aircraft. The results of processing interesting real data collected at Australian Army and Air Force bases in the Newcastle region was demonstrated.



John Robinson,
OES Technical Meeting Coordinator

3.2 Power and Energy Chapter (PES)

PES AGM

At the 2012 PES AGM a new Committee was elected for 2013.

The 2013 PES Officers are:

Chair: Prof. Gerald Sheble(FIEEE)
Vice Chair: Ray Brown
Secretary/Treas: Dr. Geogios Konstantinou
Past Chair: Prof. Trevor Blackburn

John Robinson jl.robinson@ieee.org
 Nominations Chair, Power & Energy Chapter

PES Membership continues its steady increase and at the end of 2012 it stood at 202 In large measure it has been due to the efforts of PES Past Chair Prof Trevor Blackburn and the PES

Committee which have been committed to serving Members and who are also actively participating in Section activities.

PES is a sponsor of the TENCON Spring 2013 Conference to be held at the Radisson Blu Sydney between 17 and 19 April 2013. For more details please visit <http://www.tencon2013.org.au/>

A lecture on "Increasing Network Capability through a Review of Asset Ratings" by Darren Spoor of Transgrid has been organized for 14 November 2013 at Engineers Australia Chatswood.

3.3 Computer Chapter

This year is the 10th anniversary of ICITA ([International Conference on Information Technology and Applications](#)). A decision has been made to host ICITA annually at the same date and same location, which is in Sydney on 1 – 4 July each year. From now on ICITA will be run as a single track boutique event and IEEE NSW will provide the best programme and location for this annual event.

We would like to invite you to submit a paper, attend and celebrate this event. Selected papers will be published in "ICITA Journal of Information Technology and Applications." Details of the conference can be found at www.icita.org



Dr David Tien
Chairman
IEEE NSW Computer Chapter

3.4 IEEE Education Chapter

On 25 January 2013 an excellent lecture was given by Professor Jonathan Scott, University of Waikato, New Zealand at Macquarie University. The topic was Threshold Concept Theory: Things Every Course Designer Should Know and Use. There were more than 20 in attendance from several Universities.

We are urgently seeking motivated volunteers to run the Chapter as the Chair Dr Jun Shen is no longer able to continue in the position. If you are interested please contact NSW Section Vice Chair

Tony Zaglas or Nominations Chair John Robinson

Professor Graham Town,
graham.town@mq.edu.au

3.5 SSIT (Society on Social Implications of Technology) Chapter

SSIT Australia plays a part in 2014 conference commemorating Norbert Wiener

SSIT Australia is playing a significant role in the 2014 IEEE Conference on Norbert Wiener in the 21st Century, scheduled for Boston, 24-26 June next year. Wiener made an impact on many fields of technology and popular culture including through his invention of cybernetics (the "cyber" in cyberspace, cyber-warfare and cyborgs), but as an individual he is barely known to a younger generation. This conference seeks to address that, with a range of high profile supporters including Vint Cerf (co-inventor of the Internet), Amar Bose (of sound system fame), anthropologist Mary Catherine Bateson, mathematician and science fiction writer Vernor Vinge, Free Software Foundation creator Richard Stallman and security guru Bruce Schneier. IEEE organisations involved in the conference are the IEEE Boston Section, IEEE Society on Social Implications of Technology, IEEE Systems, Man, and Cybernetics, IEEE Control Systems Society, and IEEE History Center. The call for papers will be issued 1 May 2013, and information can be found at www.21stcenturywiener.org.

Lyria Bennett Moses
NSW Co-ordinator, IEEE SSIT Chapter

3.6 Consumer Electronics Society Chapter

Formation of NSW Consumer Electronics Society Chapter

If you are interested in regular Consumer Electronics activities in NSW, please support the formation of a NSW Consumer Electronics Chapter. We have more than enough CE Society members in NSW to form a Chapter. To help with the Chapter formation, please contact Charlotte Kobert (IEEE CE Society Admin Manager) and provide your name, contact details (e-mail, phone number), and your IEEE Member number. Charlotte can be contacted at

ckobert@zbzoom.net; she is based in the USA. We need 12 CE Society members to sign a petition for the Chapter formation. So please state in your e-mail that you support the NSW CE Chapter formation. If you are interested in helping on the CE Society committee, please indicate this in your e-mail.

Activities planned include Distinguished Lecturer

talks, conferences, workshops and other activities. If you have any questions about the NSW CE Society chapter formation, please contact myself, or direct your questions to Charlotte Kobert, CE Society Admin Manager.



Stefan Mozar s.mozar@ieee.org
President - IEEE Consumer Electronics Society

3.7 AP/MTT Joint Chapter

ICUWB 2013, Sydney, Australia – Submission Deadline extended to Friday 5 April 2013

The submission deadline for the annual IEEE International Conference on Ultra-Wideband (ICUWB 2013) has now been **extended** to **Friday 5 April 2013**.

Taking place in Sydney, Australia from 15 - 18 September 2013, ICUWB 2013 welcomes previously unpublished original research and development related to ultra wideband technologies, systems and networks. All accepted papers presented at the conference will be submitted to the IEEEExplore Digital Library for publication.

For more information, including suggested topics and submission guidelines, please visit www.icuwb2013.org.

ICUWB 2013 follows more than 10 years of highly successful international UWB conferences and will provide a great opportunity to communicate and exchange the latest UWB developments with fellow researchers and student delegates.

Submissions can be made at <https://www.edas.info/N13533?c=13533>.

4. Technical Meetings & Conferences

In 2012 the NSW Section continued to actively participate in the Joint Lecture Program with a series of excellent lectures. The contribution of Prof Graham Town as the IEEE Representative on the Joint lecture Program Committee has been instrumental in its success. After two years Prof Town has stepped down and Prof Trevor Blackburn has taken up the post of Professional Activities Chair and IEEE Representative on the Joint Lectures Committee. On behalf of the NSW Section I wish to thank Prof Town for his outstanding Contributions as Professional Activities Chair and to the Joint Lecture Program. I would also like to thank Prof Blackburn for taking on the duties which and I am sure he will carry on the excellent work Prof Town.

All members are cordially invited to attend joint lectures with the Engineers Australia (EA), IEEE and IET. The joint lectures will be held at 6.00 pm (with light refreshments from 5:30pm) at the EA, 8 Thomas Street, Chatswood, NSW, unless otherwise stated.

All members should check the latest updates of the Meetings & Conferences a couple of days prior to the actual date at <http://www.engineersaustralia.org.au/sydney-division/events> to prevent any potential disappointment due to last minute changes.

Date	Event/Meeting/Conference	Speaker	Host	Contact	Venue
25 Mar 2013	Participatory Sensing: Crowdsourcing Data from Mobile Smartphones in Urban Spaces	Associate Professor Salil Kanhere	SUSB	ns.ahmed@sydney.edu.au	Sydney University
26 Mar 2013	Computational Methods for the Prediction of Biomolecular Interactions and Drug Resistance	Professor Hong Yan	SUSB	ns.ahmed@sydney.edu.au	Sydney University
28 Mar 2013	Design of Lightning Protection Systems	Rohit Narayan (Regional Sales Manager, Oceania, Erico)	IET	Upali Mahaliyana	EA Chatswood
11 Apr 2013	Intellectual Property	TBA	EA	Alan Sangster	EA Chatswood
16-18 Apr 2013	NEBSII CON 2013(Conference)	https://www.engineersaustralia.org.au/nebsii	EA	Mai Yeung	Dockside, Darling Harbour
17-19 Apr 2013	TENCON Spring 2013(Conference)	http://www.tencon2013.org.au/	IEEE	Stefan Mozar	Radisson Blu Sydney
25 Apr 2013	No Lecture(ANZAC Day)				
9 May 2013	Quantum Computing	Andrew Dzurak	IEEE	Trevor Blackburn	EA Chatswood
23 May 2013	Concentrated Solar Power for Industrial Processes (TBC)	Johan Dreyer, NEP	IET	Upali Mahaliyana	EA Chatswood
13 June 2013	TBA				
27 June 2013	TBA				
1 - 4 July, 2013	ICITA 2013(Conference)	http://www.icita.org/	IEEE	David Tien	Hilton Sydney
11 July 2013	Predictive & Preventive Maintenance - Maximising Plant Availability	Dr Dmitry Chaschin, ABB	IET	Upali Mahaliyana	EA Chatswood
25 July 2013	TBA				
8 August 2013	Sonar Detection Systems(TBC)	Dr Brian Ferguson	IEEE	Trevor Blackburn	EA Chatswood
15-18 Sept 2013	ICUWB 2013(Conference)	http://www.icuwb2013.org/index.php	IEEE	conference@icuwb2013.org	Menzies Sydney

In addition to the above Events NSW Chapters, Affinity Groups and IEEE Student Branches hold Meetings and Functions and these will be advised to Members using the IEEE e-Notice Service as details become available.

5. Continue to Receive Printed Circuit

Circuit is currently provided electronically from the IEEE NSW Section web site <http://ewh.ieee.org/r10/nsw>. Members will be notified by email when a new issue is posted on the Website.
If you require **Circuit** to be mailed to you in 2013, please complete the form below:

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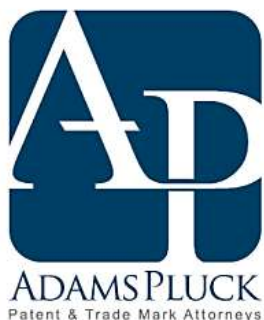
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Ensure your postal address and contact details will be valid for the next 12 months or more. Instead of sending the form to IEEE HQ USA, please forward a PDF copy of this application (Name of the File: **your name-IEEE NSW student membership offer.pdf**) and a copy of your current student card (Name of the File: **your name.pdf**) to:

Dr Ali Hellany ----- IEEE NSW Student Activities Chair
University of Western Sydney, School of Engineering
Locked Bag, 1797 Penrith South DC
NSW 1797, Australia

e-mail: a.hellany@uws.edu.au

* The number of free student memberships is **limited** 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 **31st of March 2013**.

** Please attach a copy of your current student card.

IEEE TENCON SPRING CONFERENCE

17-19 April 2013

Radisson Blu Hotel Sydney

Date:

17-19 April 2013

Radisson Blu Hotel Sydney

Organizing Committee

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General Chair
Eddie Fong
Co-General Chair
Mark O'Mally
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Technical Chair - Communications
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Charlotte Kobert
EDAS Support

For details, please visit:

<http://www.tencon2013.org.au/>

TENCON SPRING SYDNEY 2013

The first TENCON – Spring conference will be held in Sydney, Australia at the Radisson Blu Hotel. It is a sister conference to the well known TENCON conference. It will bring together top technical professionals from the Electronics and Electrical Engineering community to exchange information and results of recent in the areas of electronics, communications and power engineering.

Papers presented in conference will be submitted to IEEE Xplore Digital Library and indexed by EI Compendex.

Theme1: Advanced Technologies & Economics of Energy Systems

- **Power Electronics & Energy Conversion**
- **Renewable Energy & Sustainable Development**
- **Power Systems**
- **Electric and plug-in hybrid electric vehicles**
- **Electrical Machines & Drives**
- **Electricity Markets and Electrical Power Economics**
- **Emerging Applications & others**

Theme 2: Personal Communication in a mobile world

- **Signal Processing and Applications**
- **Communications and Networks**
- **Circuits and Systems**
- **Antennae and Propagation**
- **Biomedical Engineering and Others**

Workshop 1: Multilevel and Hybrid Multilevel Power Converters

Workshop 2: Antenna and Propagation Engineering for Wireless Communication



Antenna and Propagation Engineering for Wireless Communication TENCON Spring 2013 Workshop

Workshop abstract

This workshop has two parts. In the first, the antenna challenges in wireless communications are reviewed and some solutions are presented. They include implantable antennas for biomedical devices, compact antennas for multi-band wireless systems, dielectric resonator antennas with ultra-wide bandwidths etc. In the second part, the use of multiplicity and periodicity for antenna and propagation engineering is discussed with examples.

The use of multiple identical elements in a periodic or aperiodic fashion can solve challenges that cannot be solved using a single element. For decades, arrays of radiating elements have been employed to create narrow beams and frequency selective surfaces have been formed to filter electromagnetic waves propagating in free space. With the recent surge of research in Electromagnetic Band Gap (EBG), also known as Photonic Band Gap (PBG), the use of one-, two- or three-dimensional periodicity to achieve desirable radiation or propagation characteristics has received renewed interest. Multiplicity in one or several dimensions, with or without periodicity, has led to metamaterials with interesting properties. This presentation will focus on several selected practical applications of periodicity and multiplicity. They include EBG-resonator antennas (aka Fabry-Perot cavity antennas), leaky-wave antennas, band-reject filters, reconfigurable circuits, absorb or transmit frequency selective surfaces, dual-band artificial magnetic conductor surfaces, ultra-wideband planar proximity reflectors for bi-directional ultra-wideband antennas and frequency selective surfaces on energy-saving and float glass. For TENCON Spring 2013 Conference full Program see web page <http://www.tencon2013.org.au/>.

Workshop Speaker

Professor Karu Esselle is a Professor in Engineering, Macquarie University, Sydney, and the Immediate Past Associate Dean – Higher Degree Research of the Division of Information and Communication Sciences. He has also served as a member of the Division Executive from 2003 to 2008 and as the Head of the Department several times including six months in 2011-12.



Professor Esselle has authored about 350 research publications and his papers have been cited about 1700 times. Since 2002, his research team has been involved with research grants, contracts and PhD scholarships worth about ten million dollars. His research interests include periodic and electromagnetic band gap (EBG) structures including frequency selective surfaces and EBG resonator antennas, metamaterials, dielectric-resonator antennas, ultra-wideband (UWB) antennas and systems, broadband and multi-band antennas, biomedical devices, on-body and through-body wireless communication, millimetre-wave and MMIC devices, antenna and EBG applications in mobile and wireless communication systems, theoretical methods, and lens and focal-plane-array antennas for radio astronomy. His research activities are posted in the web at

<http://www.engineering.mq.edu.au/research/groups/celane/> .

Professor Esselle has been invited to serve as an international expert/ research grant assessor by several nationwide research funding bodies overseas including the Netherlands, Canada, Finland, Hong-Kong and Chile. He has been invited by Vice-Chancellors of other universities to assess applications for promotion to professorial levels. He has also been invited to assess grant applications submitted to Australia's most prestigious schemes such as Australian Federation Fellowships and Australian Laureate Fellowships. He served in all Macquarie University HDR-related committees at the highest level. He is the Director of the Centre for Electromagnetic and Antenna Engineering (CELANE) and the Deputy Director of the Research Centre for Microwave and Wireless Applications, which are parts of the Concentration of

Research Excellence in Wireless Communications. He leads the Implantable Telemetry Theme of the WiMed research centre. In addition to the large number of invited conference speeches he has given, he has been an invited speaker of IEEE workshops held in Australia and overseas.

Professor Esselle's recent awards include the 2012 Best Published Paper Award in Electronic and Telecommunication Engineering from IESL NSW Chapter, 2011 Outstanding Branch Counsellor Award from IEEE headquarters (USA), 2009 Vice Chancellor's Award for Excellence in Higher Degree Research Supervision and 2004 Inaugural Innovation Award for best invention disclosure. The CELANE, which he founded, has provided a stimulating research environment for a strong team of researchers including many research fellows. His mentees have been awarded six extremely competitive postdoctoral fellowships and many awards and prizes for their research achievements. Fifteen international experts who examined the theses of his recent PhD graduates ranked them in the top 5% or 10%.

His industry experience includes full-time employment as Design Expert by the Hewlett Packard Laboratory, USA, and several consultancies for local and international companies, including Cisco Systems (USA), Cochlear, Optus Networks, Locata (USA)/QX Corporation, ResMed, FundEd and Katherine-Werke (Germany) through Peter-Maxwell Solicitors. He was an Assistant Lecturer at the University of Moratuwa, a Canadian Government laboratory Visiting Postdoctoral Fellow at Health Canada, a Visiting Professor of the University of Victoria, Visiting Research Fellow of the University of Western Australia and a Visiting Scientist of the CSIRO ICT Centre. He is an Editor of the International Journal of Antennas and Propagation.

Professor Esselle has served in technical program committees or international committees for many international conferences. He is the Technical Program Committee Co-Chair of ISAP 2015, APMC 2011 and TENCON 2013 and the Publicity Chair of IWAT 2014 and APMC 2000. He is the past Chair and current Vice-Chair of the IEEE New South Wales (NSW) MTT/AP Joint Chapter, Counsellor of IEEE Student Branch at Macquarie University, Advisor of IEEE MTT Chapter in Macquarie University, the Foundation Editor-in-Chief of MQEC, the past Chair of the Educational Committee of the IEEE NSW, and a member of the IEEE NSW Committee. Professor Karu Esselle, IEEE 'M (1992), SM (1996), received BSc degree in electronic and telecommunication engineering, with First Class Honours, from the University of Moratuwa, Sri Lanka. He received the MASc and PhD degrees in electrical engineering from the University of Ottawa, Canada, with a nearly perfect GPA.

TENCON Spring 2013 - Tutorial

Multilevel and Hybrid Multilevel Power Converters: Topologies, Modulation, Control and Applications

Abstract - Multilevel power converters are industry's choice for medium and high-voltage levels able to process MWs of power. The tutorial will cover all aspects of multilevel power electronics conversion with a main focus towards hybrid multilevel converter (HMC) topologies. Configurations, concepts and operating principles of the main multilevel converter topologies are summarized, including pulse width modulation (PWM) and control. These converter are the neutral point clamped (NPC), the flying capacitor (FC), the Cascaded H-bridge (CHB) and the Modular Multilevel Converter (MMC). The tutorial will build on these fundamental concepts to classify the HMCs. It will describe the development of HMCs and present converter topologies and operation principles. Modulation and control techniques focused towards HMC and the associated challenges will also be described. Finally, the tutorial will close by highlighting current applications of HMCs and future applications where HMCs show high potential.

For the full conference program of TENCON Spring 2013 see web page: <http://www.tencon2013.org.au/>.

The tutorial covers the following topics:

- **Multilevel Power Electronics Conversion** - - Introduction, fundamental concepts of voltage-source converters, two-level topology, pulse-width modulation, limitations of two-level topology, Advantages of multilevel power electronics conversion for medium and high voltage, medium and high power applications.
- **Topologies of Multilevel Converters** - The main four multilevel converter topologies - neutral point clamped (NPC), the flying capacitor (FC), the Cascaded H-bridge (CHB) and the Modular Multilevel Converter (MMC) -and their operating principles.
- **Classification of Hybrid Multilevel Converters** - Categories of the hybrid multilevel converter topologies based on their specific attributes and characteristics.
- **Topologies of HMCs** - Topologies and operating principles of hybrid multilevel converters.
- **Pulse Width Modulation and control of HMCs**- PWM for multilevel converters including modulation methods specifically designed for HMCs. control methods for these topologies, challenges.
- **Applications of HMCs** - Current industrial applications of hybrid multilevel power converters and applications with high research interest / potential for HMCs.

Presenters:

Dr. Georgios Konstantinou

Research Associate, Australian Energy Research Institute (AERI) and School of Electrical Engineering & Telecommunications, University of New South Wales (UNSW), Sydney, Australia.

Georgios Konstantinou (S'08 - GS'11) received the B.Eng. degree in electrical and computer engineering from Aristotle University of Thessaloniki, Thessaloniki, Greece, in 2007 and the Ph.D. degree in electrical engineering from the University of New South Wales (UNSW), Sydney, Australia, in 2012. From 2008 to 2010, he was with the School of Electrical and Information Engineering, University of Sydney, Sydney, Australia. He is currently a Research Associate with the Australian Energy Research Institute (AERI), UNSW. His research interests include multilevel and hybrid converters, modular multilevel converters, renewable energy sources, and selective harmonic elimination (SHE-PWM) for power- electronics converters.

Prof. Josep Pou,

Professor, Terrassa Industrial Electronics Group, Technical University of Catalonia, and visiting Professor, Australian Energy Research Institute (AERI).

Josep Felix Pou received the B.S., M.S., and Ph.D. degrees in electrical engineering from the Technical University of Catalonia (UPC), Terresa, Spain, in 1989, 1996, and 2002, respectively. During 1989, he was the Technical Director of Polyflux S.A. In 1990, he joined the faculty of UPC as an Assistant Professor, where he became an Associate Professor in 1993. From February 2001 to January 2002 and February 2005 to January 2006, he was a Researcher at the Center for Power Electronics Systems, Virginia Polytechnic Institute and State University (Virginia Tech), Blacksburg. He has authored more than 140 published technical papers and has been involved in several industrial projects and educational programs in the fields of power electronics and systems.

His research interests include modelling and control of power converters, multilevel converters, power quality, renewable energy generation, and HVDC transmission systems. Dr. Pou is a member of the IEEE Industrial Electronics, the IEEE Power Electronics, and the IEEE Industrial Applications Societies.

Prof. Vassilios G. Agelidis,

Professor and Director, Australian Energy Research Institute (AERI) and School of Electrical Engineering & Telecommunications, University of New South Wales (UNSW), Sydney, Australia.

Vassilios G. Agelidis (SM' 00) was born in Serres, Greece. He received the B.Eng. degree in electrical engineering from Democritus University of Thrace, Thrace, Greece, in 1988, the M.S. degree in applied science from Concordia University, Montreal, QC, Canada, in 1992, and the Ph.D. degree in electrical engineering from the Curtin University, Perth, Australia, in 1997.

From 1993 to 1999, he was with the School of Electrical and Computer Engineering, Curtin University. In 2000, he joined the University of Glasgow, Glasgow, U.K., as a Research Manager for the Glasgow-Strathclyde Centre for Economic Renewable Power Delivery. From 2005 to 2006, he held the inaugural Chair of Power Engineering in the School of Electrical, Energy and Process Engineering, Murdoch University, Perth. From 2006 to 2010, he held the Energy Australia Chair of Power Engineering at the University of Sydney. Currently, he is the Director of the Australian Energy Research Institute and Professor of Power Engineering in the School of Electrical Engineering and Telecommunications, University of New South Wales, Sydney, Australia. He has authored/co-authored several journal and conference papers, as well as the book Power Electronic Control in Electrical Systems (Newnes, 2002).

Dr. Agelidis received the Advanced Research Fellowship from the U.K.s Engineering and Physical Sciences Research Council (EPSRC-UK) in 2004. He was an Associate Editor of the IEEE POWER ELECTRONICS LETTERS from 2003 to 2005, and served as the Power Electronics Society's (PELS) Chapter Development Committee Chair from 2003 to 2005. He was the Vice President of Operations within the IEEE Power Electronics Society during 2006 to 2007, an AdCom member of IEEE PELS during 2007-2009, and Technical Chair of the 39th IEEE PESC08, Rhodes, Greece. Since 2010, he has been an Associate Editor of the IEEE TRANSACTIONS ON POWER ELECTRONICS.

Further information: www.aeri.unsw.edu.au

2013 IEEE INTERNATIONAL CONFERENCE ON ULTRA-WIDEBAND

15 - 16 SEPTEMBER 2013 | SYDNEY, AUSTRALIA



ICUWB
ULTRA-WIDEBAND
2013



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KEYNOTE SPEAKERS INCLUDE:

» **Prof. Ryuji Kohno**

Yokohama National University, Japan

» **Dr Jim Lansford**

CSR Technology Inc.

» **Prof. Robert Scholtz**

University of Southern California, USA

» **Prof. Stan Skafidas**

University of Melbourne, Australia

INVITED SPEAKERS INCLUDE:

» **Prof. Norman Beaulieu**

University of Alberta

» **Prof. Matti Latva-aho**

University of Oulu, Finland

» **Prof. Andreas F. Molisch**

University of Southern California, USA

ICUWB 2013 will be held at The Menzies Hotel, Sydney, Australia on the 15th to 18th of September 2013. This Conference provides a forum for the latest UWB systems, technologies, and applications in both microwave and millimetre wave bands. ICUWB 2013 is a continuation of a series of annual international UWB conferences held in Syracuse-NY, Baltimore, Reston-VA, Oulu, Kyoto, Zürich, Waltham, Singapore, Hannover, Vancouver, Nanjing, and Bologna, from 2002 to 2012. This event is co-sponsored by CSIRO, Macquarie University, IEEE Microwave Theory and Techniques Society (MTT), IEEE Communications Society and NSW Trade & Investment.

ICUWB 2013 welcomes previously unpublished original research and development related to ultra wide band technologies, systems and networks. All accepted papers presented at the conference will be submitted to the IEEE Xplore Digital Library for publication. The manuscript template and complete information about the electronic paper submission process can be found at www.ICUWB2013.org.

Topics of Interest include, but are not limited to:

ANTENNAS AND PROPAGATION

- UWB antennas and arrays
- Field trials and measurements
- Channel measurements and modelling

UWB COMMUNICATIONS SYSTEMS AND SIGNAL PROCESSING

- Modulation and detection
- Interference and capacity
- Synchronisation
- Coding and decoding
- Ranging, localisation, and positioning
- Multiple access schemes
- MIMO systems
- Time reversal
- 60 GHz systems

HARDWARE ARCHITECTURE AND IMPLEMENTATION

- RF modules, circuits, and systems
- Low-power consumption techniques • Wireless access protocols and architectures

- Cooperative communications
- Energy efficient cross layer design

STANDARDISATION AND REGULATORY ISSUES

- Spectral management • Emerging wireless standardisations
- Measurement for type approval
- Co-existence

UWB COGNITIVE AND CO-OPERATIVE

- Cognitive wireless networks
- Energy efficient cross layer design
- Wireless access protocols and architectures
- Co-operative communications
- Spectrum sensing and dynamic spectrum sharing

APPLICATIONS

- Wireless personal/body area network
- Consumer electronics
- Home networking
- 60 GHz millimetre wave and beyond
- Wireless UWB
- THz imaging/sensing/communications
- Healthcare and medical imaging
- UWB communications over power lines
- Collision, ground-penetrating and through wall radars
- Remote sensing
- Green communications
- RF identification
- Automotive radars and sensors • UWB for inter-chip and intra-chip communications
- UWB for satellite communications

Exhibition: An exhibition of research achievements and commercial products will be held concurrently.

**Tutorial /
Workshop
Proposal
Submission**
1 February 2013

**Technical Paper
Submission
Close**
5 April 2013

**Acceptance
Notification**
17 May 2013

**Final Manuscript
Submission**
14 June 2013