



*Advancing Technology
for Humanity*

**INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS
INC.
(ARBN 078 576 495)**

QUEENSLAND SECTION

**ANNUAL REPORT FOR THE AGM
2012**

**UNIVERSITY OF QUEENSLAND
BRISBANE**

29 November 2012

FROM THE IEEE-QLD CHAIR

In office: Dr. Abbas Bigdeli
PART A – REVIEW OF 2012

This year was a year of recouping and resurrection for our Section.

- The membership is now steady around 1200 members. This means our year-on-year 10% growth during 2005-2010 has now plateaued. This is something to worry about although is in line with IEEE membership in OECD countries in general and other Australian Sections in particular.
- Most organisational units (chapters and affinity groups) hosted by the Section have held at least two meetings per year required for official 'active' status. One chapter in particular, the Power and Energy Society Chapter, has been extremely active, holding eight meetings for the benefit of members. This includes a number of seminars by IEEE Distinguished Lecturers, internationally recognised as leaders in their fields.
- In 2012, we had a new Student branch at Central Queensland University-Brisbane Campus and special thanks is due to the Branch Counsellor, Ms. Mary Tom and student volunteers who made this possible.
- The Section actively continued to promote student activities and membership.
 - The Section continued with our usual recruitment drives at busy student functions (such as BBQs)
 - The annual thesis prize competition is on again this year.
- We have had a few vacant positions in the Section's executive committee throughout the year. I use this opportunity to encourage members to volunteer for the vacant positions for 2013.

In 2012, eleven executive committee meetings were held, as well as the AGM. This year's committee meetings were organised through teleconference, as in previous years. From a central meeting place at The University of Queensland's St. Lucia campus, members were able to attend the teleconference from more distant locations in the Section such as the Gold Coast, Toowoomba and Rockhampton.

As well as chairing the monthly meetings of the Section's Executive Committee, the AGM and attending to the business ordinarily arising from them, I was personally involved in several other activities and initiatives.

- I attended the Region 10 Meeting in Kolkata, India. This annual event allows Section Chairs to be appraised of current developments in IEEE and in our region and to make contact and coordinate with other Sections.
- I attended several Chapter and Student Branch functions, giving presentations on the benefits of IEEE membership at some of them.
- I regularly attended teleconference meetings of the IEEE Australia Council in order to coordinate with other Australian Sections.

PART B – CLOSING REMAKRS

I have not nominated for the Section Chair position for 2013, so this will be my last communication to you as Queensland Section Chair. I would like to express a big thank you to all committee members for the support during 2012 while we tried to consolidate activities in our Section. I look forward to continue to serve the members in our Section in my new role as the Immediate Past Chair in 2013.

I use this opportunity to wish all our members and their families best wishes and happy and safe time for the festive season. I look forward to be working with you all in 2013.

Abbas Bigdeli
Chair, IEEE Queensland Section
29 November 2012

FROM THE IEEE-QLD SECTION VICE CHAIR

In office: Ms. Sandra Mau

Year in Review

In 2012, the Vice-Chair role was primarily to coordinate the Annual General Meeting and Dinner, as well as assisting to coordinate the Student Thesis prize.

Despite the disruptions to IEEE systems from Hurricane Sandy (in particular, the IEEE emails, websites, and e-notice systems), the AGM and Dinner attendance for 2012 has remained steady from 2011, which shows ongoing membership engagement in our Section. We are honoured to have special speaker Merryn York, Chief Executive of Powerlink Queensland to join us for the Annual Dinner.

Additionally, based on feedback from last year's AGM and Dinner, we have moved to a different venue that is reputed to have better food and service. We have also tried to add little touches to improve member experience during the meeting by providing more orderly registrations, name tags, and to have the water and place settings laid out in advance of the meeting.

Going Forward

Our Section will continue to engage members and industry to provide value to our members, and continue improving the Annual General Meeting and Dinner based on user feedback.

Ms Sandra Mau
Vice Chair,
IEEE Queensland

REPORT FROM THE SECRETARY

In office: Dr. Rahul Sharma

I took office in April 2012 and there were 10 committee meetings held since January 2012. The meetings were held physically at The University of Queensland in Brisbane; however members were able to attend via teleconference from other locations.

The following table lists the attendance records of the executive committee for the meetings held.

Attendance:

Office	Attendance	Present	Apology	Absent
Chair	Abbas Bigdeli	10	0	0
Vice Chair	Sandra Mau	8	2	0
Secretary (Feb. – April 2012)	Mandar Gujrathi	3	0	0
Secretary (May - present)	Rahul Sharma	7	0	0
Treasurer	Mike Robinson	10	0	0
Immediate Past Chair	Roelof Swanepoel	2	4	4
Newsletter Editor	Robert Ellen	3	6	1
Webmaster (March - present)	Nilesh Modi	8	1	0
Professional Activities	Farhad Dadgostar	0	8	2
Membership Development chair (March-present)	Chandima E	5	4	0
Awards & Recognition (March – present)	Roelof Swanepoel	2	4	4
Student Activities Chair	<i>Vacant</i>	-	-	-
Educational Activities Chair	Mark Griffin	4	1	5
Engineers Australia Liaison	Tapan Saha	8	2	0
Women in Engineering	Sandra Mau	8	2	0
Women in Engineering (Vice chair)	Mahnaz Shafei	0	1	9
Aerospace and Electronic Systems Chapter	Garry Einicke	7	3	0
Aerospace and Electronic Systems Chapter (VC)	John Davies	5	3	2
Aerospace and Electronic Systems Chapter (Sec)	Steve Ashfield	0	3	2
Computational Intelligence Chapter	Michael Blumenstein	0	10	0
Computational Intelligence Chapter (VC)	Ross Hayward	0	0	10
Computational Intelligence Chapter (Sec)	<i>Vacant</i>	-	-	-
Computer Chapter	Mike Robinson	10	0	0
Computer Chapter (VC)	Jianming Yong	0	0	10
Computer Chapter (Sec)	Mark Griffin	4	1	5
Control Sys/Robo & Auto Chapter	John Billingsley	8	2	0
Control Sys/Robo & Auto Chapter (VC)	Simon Lucey	-	-	-
Control Sys/Robo & Auto Chapter (Sec)	<i>Vacant</i>			
Engineering in Medicine & Biology Chapter	Amol Waghlikar	1	3	6
Engineering in Med & Biology Chapter (VC)	Mohan Karunanithi	0	0	10

Engineering in Med. & Biology Chapter (Sec)	Mark Griffin	4	1	5
MTT/AP Chapter	David Enchelmaier	3	7	0
MTT/AP Chapter (VC)	Konstanty Bialkowski	7	3	0
MTT/AP Chapter (member) (April - present)	Mani Kanesan	1	3	5
MTT/AP Chapter (member) (March - present)	Morteze Shapari	6	2	1
Power & Energy Chapter	Mehdi Eghbal	7	3	0
Power & Energy Chapter (VC)	Tapan Saha	8	2	0
Power & Energy Chapter (Secretary)	Alexandra Price*	4	2	0
Power and Energy Chapter (Student rep) (March - present)	Hasan Kazi	4	4	0
Signal Pro & Comms Chapter	Vaughan Clarkson	2	8	0
Signal Pro & Comms Chapter (VC)	Dhammika Jayalath	4	4	2
Signal Pro & Comms Chapter (Sec)	Vacant	-	-	-
GOLD Affinity Group	Robert Ellen	3	6	1
GOLD Affinity Group (VC)	Roelof Swanepoel	2	4	4
GOLD Affinity Group (Sec)	<i>Vacant</i>	-	-	-
Student Counsellor QUT	Jacob Coetze	1	0	9
Student Counsellor GU-GC	<i>Vacant</i>	-	-	-
Student Counsellor GU-Nathan	<i>Vacant</i>	-	-	-
Student Counsellor USQ (May - Present)	Paul Wen	0	1	6
Student Counsellor CQU	Amanullah Than Oo	0	0	10

In addition, I participated in the judging process for the IEEE Student thesis competition for 2012. All the entrants were of high quality and it was rather difficult for us to choose a clear winner. I congratulate all entrants for this competition and look forward to continue my association with IEEE-QLD in the New Year.

REPORT FROM THE TREASURER

In office: Mr. Mike Robinson

Period: 1 December 2011 to 30 November 2012			
Report prepared by Mike Robinson, Treasurer 2012			
Income		Expenses	
IEEE Rebates:		Travel:	
Rebate from IEEE (150 USD)	142.37	Nicola Holmes NZ student conference (2011)	851.00
AESS Chapter rebate (120 USD)	115.82	Chair to R10 conference (2011)	97.58
WIE share of profits	310.18	Execom meetings (Chorus Call)	357.22
R10 Conference subsidy	689.69	EA Awards Dinner	
IEEE WIE grant (US\$350)	317.96	Sponsorship	500.00
AGM Dinner Payments (2011)	600.00	Attendance	250.00
AGM Dinner Payments (2012)	1,080.00	Publicity	
Interest (Mecu)		IEEE Merchandise	1,958.00
Transferred to Access Account	338.22	IEEE Australia Council Levy 2011	576.50
Re-invested in Term Deposits	1,073.29	IEEE Student Thesis Prizes 2012	
		Student awards & grants	
		Mio Naketsuy Thesis prize	500.00
		Nicola Holmes Thesis prize	500.00
		Md.Rakibuzzaman Shah PES travel award	1,000.00
		Sumit Mazumder PES travel award	1,000.00
		2011 AGM	
		St Leo's College AGM Dinner	2,734.40
		AGM speaker gift	100.00
		Engraving expense	105.00
		Student Drives	
		UQ	593.12
		Cheque Book Fees (Mecu)	7.50
		Chapter and Affinity Group Expenses	
		MTT/AP	89.10
		PES	802.05
		SP/COM	1,989.39
		EMBS	153.72
		WIE	300.00
		Sundry expenses	250.00
	4,667.53		14,714.58
Accrued Income (Accounts Receivable)		Accrued Expenses (Accounts Payable)	
IBM Australia intern recruitment session	500.00	AGM Dinner 2012 (St John's) estimate	3,110.00
		Australian Council Levy (2012)	344.10
		IEEE Student Thesis Prizes (2012)	1,000.00
	500.00		4,454.10
Total Income	5,167.53	Total Expenses	19,168.68
Assets		At 29 Nov 2012	
Mecu Accounts			
Access Account			1,456.13
4.75% TD 138322014 matures 17 December 2012			23,018.35
5.25% TD 307188229 matures 13 May 2013			20,000.00
5.80% TD 307188228 matures 13 Mar 2013			20,732.33
Total Cash at Bank			65,206.81
Accounts Receivable			500.00
Total Assets			65,706.81
Liabilities			
Accounts Payable			4,454.10
Total Liabilities			4,454.10
Net Worth			61,252.71
Chapters and Affinity Groups:			
AESS	Aerospace and Electronics Systems Society Chapter		
CIS	Computational Intelligence Society Chapter		
CS	Computer Society		
CSS/RA	Control Systems / Robotics and Automation Society Joint Chapter		
EMBS	Engineering in Medicine and Biology Society Chapter		
IT	Information Theory Chapter (joint with SA, ACT, VIC, NSW, hosted by SA Section)		
MTT/AP	Microwave Theory and Techniques / Antennas and Propagation Joint Chapter		
PES	Power Engineering Society Chapter		
SP/COM	Signal Processing and Communications Chapter (joint with North QLD Section)		
SIT	Social Implications of Technology Chapter (joint with VIC section, hosted by VIC Section)		
GOLD	Graduates of the Last Decade		
WIE	Women in Engineering		

REPORT FROM MEMBERSHIP DEVELOPMENT CHAIR

In office: Chandima Ekanayake

As already mentioned by the Chair our membership is currently steady around 1200. To increase this number and retaining the current members following activities have been taken by the Section.

1. Membership Elevation: It is recognized that many of our members have the potential to upgrade their member status to elevated levels. To provide more information on this membership elevation page has been created by the web master. More information on this can be found in webmaster's report.
2. Promotion of student activities and membership: Many membership drives have been mainly organized by the student Chapters. We have supported them by providing IEEE promotional materials and active participation.
3. Support for distinguish lecturer programs: The section is always supporting for distinguish lecturer programs conducted by many chapters. A special gift with Queensland Section logo has been purchased and provided to requested chapters to use for the distinguish lecturer program.
4. Promotional Materials: During the last year we have spent about \$1500 to purchase many IEEE promotional products including world clocks, USB hubs, Caps and pens. Also we have obtained IEEE member ship development kits and these materials were provided for membership promotion activities.

Apart from the above specific activities many other activities were organized by individual chapters which were helpful for the promotion of IEEE. I'll take this opportunity to thank all members who helped to promote IEEE activities and looking forward to work closely with IEEE-QLD in future.

REPORT FROM THE WEBMASTER

In office: Nilesch Modi

In 2012, IEEE Queensland website has been updated and made more informative by adding following information.

Membership Elevation: A membership elevation page has been created. This page includes all necessary information related to membership elevation along with a list of potential referees in the section. The page has useful links to relevant IEEE webpage where detail information regarding membership elevation can be found.

Student Branches: A separate webpage for student branches has been created. At this moment, it provides the list of student branches in the section along with the details of their current branch counsellors.

Picture Gallery: A separate webpage for picture gallery has been created. This page provides photographs of some of the events held in current year.

IEEE in Australia: A page providing links for different IEEE sections in Australia has been created.

Privacy Policy: As per an email from IEEE HQ, a link for IEEE privacy policy and opting out of cookies has been created on the front page of the section website.

The website has also been updated with current office bearers of the section with their contact details.

In closing, I wish to acknowledge the outstanding support I have received from section committee members and last years' webmaster Ashkan Boldaji.

AWARDS AND RECOGNITION REPORT

Office Bearer:

Chair – Mike Robinson

For 2012 the committee has retained the award structure that was used for previous years. This encompasses the following three categories.

The first category is *Recognition of Service* awards. These are an official recognition of a person's contribution in a particular role and are awarded at the first AGM following the completion of a person's term in a role. They are awarded to all people in this category without requiring nomination.

The second category is *Outstanding Contribution* awards. These are awarded to people who have been identified as having made a significant contribution during their term in a role. They are awarded at the first AGM following the completion of a person's term in a role. These awards require a seconded nomination (by members of the IEEE Queensland section) along with a reason for the nomination to be submitted to the section committee.

The third category is for the IEEE Queensland Section *Volunteer of the Year*. This is awarded to the person who is regarded as having made the most substantial contribution during their time in office. Only people who have completed their term of office are eligible. A single plaque is awarded each year. Nominations (by members of the IEEE Queensland section) are submitted to the section committee.

Awards

Recognition of Service

A total of 22 *Recognition of Service* awards were awarded within the Queensland section during 2012.

Recipient	Contribution
Roelof Swanepoel	Section Chair
Jasmine Banks	Section Vice-chair
Mandar Gujrathi	Section Secretary
Steven Lawrance	Section Student Activities
Jan McSweeney	Section Educational Activities
Peter Lindsay	Chair Aerospace and Electronic Systems
John Davies	Vice-chair Aerospace and Electronic Systems
Garry Einicke	Secretary Aerospace and Electronic Systems
Philip Machanick	Chair Computer Society
Mike Robinson	Secretary Computer Society
Gordon Wyeth	Chair Control Systems / Robotics and Automation Society
Robert Zlot	Vice-chair Control Systems / Robotics and Automation Society
John Billingsley	Secretary Control Systems / Robotics and Automation Society
Jacob Coetzee	Chair Microwave Theory and Techniques / Antennas and Propagation
David Enchelmaier	Vice-chair Microwave Theory and Techniques / Antennas and Propagation
Konstanty	
Bialkowski	Secretary Microwave Theory and Techniques / Antennas and Propagation
Tapán Saha	Chair Power Engineering Society
Jose Lopez-Roldan	Vice-chair Power Engineering Society

Mehdi Eghbal	Secretary Power Engineering Society
Alexandra Price	Student representative Power Engineering Society
Dhammika Jayalath	Chair Signal Processing and Communications Chapter
Vaughan Clarkson	Vice-chair Signal Processing and Communications Chapter

Outstanding Contribution Award

Three *Outstanding Contribution* awards were awarded within the Queensland section during 2012.

Recipient	Contribution
Konstanty Bialkowski	Secretary Microwave Theory and Techniques / Antennas and Propagation
Tapan Saha	Chair Power Engineering Society
Dhammika Jayalath	Chair Signal Processing and Communications Chapter

IEEE Queensland Section Volunteer of the Year Award 2012

A vote was taken by members of the IEEE Queensland Section committee and Professor Tapan Saha was elected Volunteer of the Year award for 2012.

Thesis prize awards

There were two categories of award for undergraduate theses this year.

1. **IEEE Queensland Section Student Prize for the Best Final Year Thesis in All Fields of Electrical Engineering and Information Technology** was awarded to *Edward Burstinghouse* from The University of Queensland for his thesis entitled 'Preliminary Assessment of the Level of Vulnerability of Queensland's Transmission Network to Geomagnetically Induced Currents'.
2. **IEEE Queensland Section Student Prize for the Best Final Year Thesis in Power Engineering** was awarded to *Jack Gaynor* from The University of Queensland for his thesis entitled 'Self-mixing Sensors based on Terahertz Quantum Cascade Lasers'.

Best Paper awards (Power & Energy Society Chapter)

The **IEEE Power & Energy Society (PES) Queensland Chapter Student Conference Travel Prize** was awarded to two recipients this year:

1. *Sumit Mazumder* for presenting the paper entitled 'Excess Power Circulation in Distribution Networks Containing Distributed Energy Resources' during IEEE PES General Meeting 2012, San Diego, USA.
2. *Md.Rakibuzzaman Shah* for presenting the paper entitled 'Design of Robust Power Oscillation Damping Controller for Large-scale PV Plant' during IEEE PES General Meeting 2012, San Diego, USA.

Annual Reports from the Section chapters

COMPUTATIONAL INTELLIGENCE SOCIETY

Office Bearers:

Chair: A/Prof. Michael Blumenstein

Vice-Chair: Dr. Ross Hayward

The Queensland Chapter of CIS was active in 2012. Two technical meetings were organised, the first featured eight guest speakers/presenters and the second was devoted to PhD student presentations. The postgraduate symposium was not held this year; however it is anticipated that the symposium will be scheduled next year. The following events were held in 2012:

- IEEE CIS Summer School (Presentations by 8 guest speakers) – February 16-18th
- Technical meeting (Presentations by PhD students) – November 6th

The first event was held at Griffith University Gold Coast campus and the second meeting was conducted via the Access Grid, with members from Brisbane (QUT), the Gold Coast (Griffith University) and Rockhampton (CQU) in attendance. The event held on February 16-18th attracted 40 registered participants (and some non-registered student attendees) and the November 6th meeting had 14 attendees (~6 members and 8 non-members).

16-18th February Summer School topics and invited lecturer details:

- Exponential Technologies and Impact on Industry (by Dr Clarence Tan)
- Ageing and Age-care (by Prof. Jeffrey Soar)
- ECG Abnormality Detection based on Physical Activities (by Bruce Satchwell)
- Metaheuristic Optimization and Estimation of Distribution Algorithms (by Dr Marcus Gallagher)
- Evolutionary approaches to circuit design and self-repair on Field Programmable Gate Arrays (by Dr Ross Hayward)
- Solving Hard Combinatorial and Optimisation Problems in Computational Intelligence (by Dr Wayne Pullan)
- Computer Vision and Image Processing (by Dr Alan Liew)
- Programming for Android (by Patrick Crilly, Kalvinder Singh)

6th November Presentation details:

1. Speaker: Chien Chiu, PhD student @ CQU
Title: Evolutionary Algorithm Based Neural Ensemble Classifier
2. Speaker: David Warne, Honours student @ QUT
Title: Cellular Automata research
3. Speaker: Adel Fazel, PhD student @ Griffith University
Title: Artificial Intelligence for Flood prediction

One of the items discussed at the second technical meeting in 2012 was the proposal to hold another IEEE CIS Qld Summer School. The details have not been confirmed, but there is support for such a Summer School to be organised in 2013. In addition, technical meetings with high-profile guest speakers and postgraduate presentations (including a possible symposium) will continue to feature prominently in the schedule for next year

A/Prof. Michael Blumenstein
IEEE CIS (Queensland) Chapter Chair

COMPUTER SOCIETY CHAPTER

Office Bearers:

Chair - Philip Machanick

Vice-Chair - Jianming Yong

Secretary - Mike Robinson

The Computer Society has been dormant for most of the past year. The main reason for this is that the Chair has not been able to accomplish any of the goals he set for himself at the start of the year. A secondary reason is the committee hasn't met very often during the year, so no planning has taken place. Again, as Chair I take responsibility for this also.

The Computer Society is the largest chapter/society in the IEEE. It is also the largest component of the IEEE Queensland Section, accounting for approximately 25% of the membership. Unfortunately its size is in inverse proportion to its level of activity, a problem that has endured for the last several years.

One of my objectives this year was to start student branches of the Computer Society at the metropolitan universities. When I joined the Computer Society 20 years ago it was through a student branch, and I was surprised to learn recently that no Brisbane university currently has a student branch.

Discussions with one university started in the middle of the year but didn't get far due to time constraints and the difficulty in identifying potential student counsellors and student members. This is difficult enough when one is a member of a university faculty, but even more difficult if one is not, which is my case.

Since then I have had discussions with the Heads of School at several universities and hope to convene a conference of Heads of School early in 2013 to plan a strategy to get student branches operating at all Brisbane and Gold Coast campuses that host ICT studies. Engaging potential student members is in my view the best way to maintain and enlarge Computer Society membership.

What should be done about the interests of existing Computer Society members? This is a perplexing subject because existing members tend to be busy executives in universities and commercial organisations. Persuading them to join committees can be difficult, and ascertaining their needs as Society members is more difficult. But the most difficult task of all is identifying who they are.

Members of other chapters and societies tend to self-identify due to the nature of their work. Not so Computer Society members. If I knew a particular person was a Computer Society member I could discuss Computer Society matters with that person. One way to get to know who the members are might be to survey the Queensland Section membership and ask the Computer Society members to volunteer their names and availability for committee work and chapter building activities.

These are issues for 2013. In the meantime it is very important to keep the minimum level of Computer Society activities going in the Queensland Section while the job of rebuilding the Society's profile and energy gets underway. If any Computer Society member wishes to offer suggestions or enter into a discussion with me please feel free to do so.

Mike Robinson

CONTROL SYSTEMS / ROBOTICS AND AUTOMATION SOCIETY

Office Bearers:

Chair: Dr John Billingsley

1. The CS/RAS Chapter has organised two events for 2012.

On Wednesday 27th June from 2.30 -3.30 PM a lecture was presented in the Owen J Wordsworth Room, Level 12, S-block of QUT.

The title was "Getting More From Fisher" and the speaker was Dr. Terence Sim, School of Computing, National University of Singapore

2. On Tuesday, 4 December 2012 2:00 PM-3:00 PM a lecture is to be held in the UQ CCR auditorium of the Royal Brisbane and Women's Hospital in Herston, Brisbane.

The speaker is Professor Peter Brett of Brunel University, London. The title is "Pragmatic Robots for Surgery"

JOINT CHAPTER OF SIGNAL PROCESSING AND COMMUNICATIONS

Office Bearers:

Chair: Vaughan Clarkson

Vice-Chair: Dhammika Jayalath

Introduction

The SPS/ComSoc chapter has continued to be active in 2012, with continuity in the leadership, albeit with an exchange of roles.

Major Activities for 2012

The following activities were organised this year:

- On 12th April, Mr. Ollencio D'Souza, Director of TechnologyCare, conducted a workshop titled 'Video & Audio Analytics' with some hands-on examples at Queensland University of Technology. This workshop focused on two aspects; Video & Audio Analytics that adds another dimension, i.e. detection and recognition, to the technologies used to support human frailty (such as attentiveness, distraction, memory and loss of objectivity).
- On 17th August, Assoc. Prof. Brent Petersen, from the University of New Brunswick, Canada, presented a seminar entitled 'The MIMO Multiuser Wireless Bandwidth of a Room'. This seminar was held at The University of Queensland and was co-hosted with the UQ Student Branch (see their annual report). The seminar was followed by a pizza lunch.
- On 10th September, an SPS Distinguished Lecturer, James Johnston, conducted two activities at The University of Queensland. Both were co-hosted with the UQ Student Branch. The first event was a seminar entitled 'Why You Hear What You Hear'. The second was an FFT workshop.

Message of Thanks

I'd like to thank Dhammika Jayalath for his years of service as Chair prior to my election this year, and for unexpectedly continuing to act in that role for another six months to cover my absence overseas while on Special Studies Leave in the first half of this year.

Vaughan Clarkson

Student Branch Counsellor, IEEE UQ Student Branch, Queensland

AEROSPACE AND ELECTRONIC SYSTEMS (AES) CHAPTER (QLD)

Office Bearers:

Chair - Garry Einicke

Vice-Chair – John Davies

Secretary – Steve Ashfield

The Aerospace and Electronic Systems society was active in 2012 with the conduct of three technical presentations. The incoming secretary, Steve Ashfield, gave a seminar on “The Case of the Missing Munition: Aircraft System Safety” at UQ on 28 March 2012. This presentation explored the complexity of aircraft armament system integration and software verification. Steve’s experience on F-111 weapons systems and safety anecdotes provided valuable insight into contemporary systems engineering issues. The seminar was well received and attended by academia and aerospace professionals from Qinetiq, Boeing, Australian Aerospace, Raytheon, and many others.

Garry Einicke provided a presentation on the use of Energy Constraints within Filtering and Smoothing at QUT on 6 August 2012. This presentation explored the use of boundary constraints to offer low cost and improved performance in position and velocity measurements.

Dr. Larry Chasteen gave a seminar on “National Missile Defence (NMD)” at CSIRO on Mon 19 Nov 2012. He presented background information on the policy issues facing NMD. It also provided technical information on the major systems developed by the Bush Administration, some system engineering details on the proposed elements of the system that have been developed by the Obama Administration and are being installed in Europe.

Succession planning for the society has been well managed within the chapter with Garry Einicke continuing as Chair. Steve Ashfield will assume the role of Vice-Chair and John Davies will assume the role of secretary having completed two years as Vice-Chair. The AES Chapter looks forward to continued presentations in the field of Aerospace and Electronic Systems in 2013.

MICROWAVE THEORY AND TECHNIQUES/ANTENNAS AND PROPAGATION JOINT CHAPTER

Office Bearers:

Chair: David Enchelmaier

Vice-Chair: Dr Konstanty Bialkowski

In 2012 the MTT/AP joint chapter was pleased to host four seminars for its members, on a wide range of topics.

The first seminar was given in March by Dr John Ness on the History of Microwave Engineering in South East Queensland. This talk was timed to coincide with the 25th anniversary of Mitec, a company formed as a spin-off from the University of Queensland which has since spawned over a dozen other organisations.

In May it was our great privilege to be visited by AP-S Distinguished Lecturer Professor Kwok Wa Leung, speaking on the development of the Dielectric Resonator Antenna. As a volume device, the DRA offers designers more degrees of freedom than 1 and 2 dimensional antennas such as monopoles or microstrip patches. Professor Leung described the fundamental design equations for DRAs and presented examples of several devices to demonstrate its versatility.

Committee member and Griffith University postgraduate student Morteza Shahpari coordinated two further events later in the year. The first was a seminar by Griffith lecturer Professor David Thiel on Small Antennas for Difficult Environments. Professor Thiel commenced by outlining some of the environmental problems faced when developing small wireless sensor nodes for applications as diverse as sporting equipment and drill holes. After speaking about the solutions to some of these problems, he then identified further problems which are still being investigated.

The final seminar for 2012 was given by Griffith University visiting lecturer Dr Thomas Fickenscher on the topic of Recent Advances in Coastal Surveillance by HF Surface Wave Radar in Germany. HF surface wave radars have applications including oceanography, maritime surveillance, and tsunami warning. Dr Fickenscher's talk presented measurement results for a recently proposed Sea Clutter Canceller Beamformer, which can be used to enhance ship detection.

Average attendance at events in 2012 was 15, with a good mixture of IEEE members and guests. The MTT/AP joint chapter committee wishes to thank everyone for their support of our events during the year, and we look forward to seeing you at more events in 2013.

David Enchelmaier

Chair, IEEE Qld MTT/AP Joint Chapter
November 2012

POWER AND ENERGY SOCIETY

Chair: Dr Daniel (Mehdi) Eghbal (Energex)

Vice chair: Professor Tapan Saha (The University of Queensland)

Secretary: Ms Alexandra Price (Energex)

UQ PES Student branch chair: Mr. Kazi Nazmul Hassan

Highlights of -2012

- Organised 9 technical programmes (5 technical seminars, two distinguished Lectures and two workshops)
- PES chapter was recognized as one of the High Performing Chapters under the High Performing Chapters Programs in 2011.
- PES chapter was recognized as a Runners-up chapter for 2011 Outstanding Large Chapter Award.
- PES Chapter won the IEEE membership growth contest 2011.
- Awarded two student travel prizes for student members to attend and present paper at the 2012 IEEE PES General Meeting conference, held in San Diego USA. Mr. Sumit Mazumder from Queensland University of Technology (QUT) and Mr. Md. Rakibuzzaman Shah from the University of Queensland (UQ) were the winners of this award. Each winner received a cheque worth \$1000.
- Dr. Dave Allan was recognized as the 2011 IEEE PES Outstanding Engineer for his professional activities and contribution to the power and energy profession.
- Maintained and updated the website of the PES chapter. Archives of 2010-2012 activities can be accessed from the website of the PES chapter.
- PES chapter secretary attended 2012 IEEE Region 10 chapter chairs meeting.

Seminars and workshops

<http://ewh.ieee.org/r10/queensland/v2/doku.php/chapters:pes:events2012>

1) Technical Seminar

Title: Reducing Network Investment through Demand Management and Energy Conservation

Date: 14 March 2012 (Wednesday)

Speaker: Mr. Terry McConnell, Business and Industry Relationship Manager, ENERGEX

Venue: Hawken Auditorium, Engineers Australia, Brisbane



2) Technical Seminar

Title: Precision Spatial Framework, the opportunity of a new infrastructure for Queensland

Date: 28 June 2012

Speakers: Mr. James Bangay, General Manager of the Ergon Energy ROAMES group

Venue: Hawken Auditorium, Engineers Australia, Brisbane



3) Technical seminar

Title: Powerlink Queensland's 2012 Annual Planning Report

Date: 11 July 2012 (Wednesday)

Speaker: Mr. Terry Miller, BE(Elec), RPEQ - Manager Network Development, Powerlink Queensland

Venue: Hawken Auditorium, Engineers Australia



4) Technical Seminar

Title: Suboptimal model based engine control and calibration

Date: 3 August 2012 (Friday)

Speaker: Associate Professor Chris Manzie, Department of Mechanical Engineering, The University of Melbourne
Venue: The University of Queensland, St Lucia Campus

5) Technical Seminar (joint with PES student branch)

Title: Power System Stability Analysis Using DigSILENT PowerFactory

Date: 31 August 2012 (Friday)

Speaker: Miss Mai Nguyen, Power and Energy research group, School of ITEE, The University of Queensland

Venue: The University of Queensland, St Lucia Campus

6) Technical Seminar (DLP Region 10)

Title: Resilient and Expandable Distribution Network for Smart Community

Date: 4 October 2012 (Thursday)

Speaker: Professor Ryuichi Yokoyama, Waseda University, Japan (IEEE Fellow)

Venue: Energex, Brisbane



7) Workshop

Title: Overview Resilient and Expandable Distribution Network for Smart Community

Date: 5 October 2012

Speakers:

Professor Ryuichi Yokoyama, Waseda University, Japan

Professor Tapan Saha, the University of Queensland, Brisbane

Dr. Ruifeng (Richard) Yan, the University of Queensland, Brisbane

Venue: The University of Queensland



8) Technical Seminar (Distinguished lecture)

Title: Aging and Diagnostics of High Voltage XLPE Power Cables

Date: 2 November 2012

Speaker: Dr. John Densley, IEEE Fellow, Canada

Venue: The University of Queensland

9) Workshop (2-days workshop)

Title: Aging of Electrical Insulation Systems and Power Cable Diagnostics Seminar

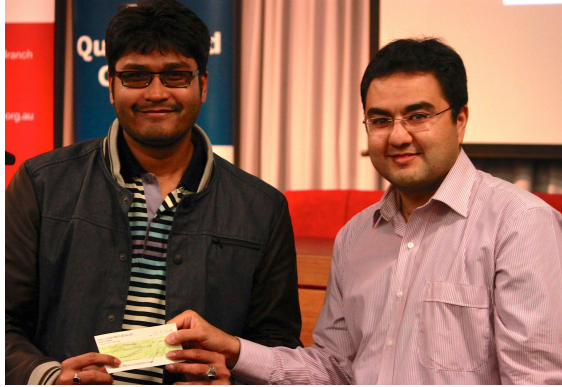
Date: 5-6 November 2012

Speaker: Dr. John Densley, IEEE Fellow, Canada

Venue: Hawken Auditorium, Engineers Australia

Student Prize

In 2010, IEEE Queensland section PES chapter established a \$2000 travel prize for student members to attend and present a paper at the IEEE PES General Meeting conference. This prize is administered by the PES chapter of IEEE Queensland section and is initially available for 5 years from 2010 – 2014. In 2012, PES chapter received 9 applications. The prize committee carefully reviewed all received applications and finally decided to equally share the prize between the best two papers which were successful to obtain exact same mark. Mr. Sumit Mazumder from Queensland University of Technology (QUT) and Mr. Md.Rakibuzzaman Shah from the University of Queensland (UQ) were the winners of 2012 IEEE PES Travel Award.



Mr. Sumit Mazumder (Left) receiving the \$1000 check from the PES chapter chair



Mr. Md. Rakibuzzaman Shah (Left) receiving the \$1000 check from the PES chapter chair

PES Outstanding Engineering Award 2010

The IEEE PES Queensland chapter launched the 'Outstanding Engineer Award' in 2010. Dr. Dave Allan, Manager Research and Development Powerlink Queensland, was recognized as the outstanding engineer in 2011 and the plaque of "*IEEE Power & Energy Society of Queensland Outstanding Engineer Award*" was presented to him during the IEEE DL workshop at the University of Queensland.



Dr. Dave Allan receives IEEE PES Outstanding Engineer Award from Professor Tapan Saha (PES Chapter Chair 2011)

Region 10 Chapter Chairs Meeting

PES chapter secretary attended 2012 region 10 chapter chairs meeting in Tianjin, China during Innovative Smart Grid Technologies Asia Conference (ISGT-ASIA 2012).

Announcement of PES Outstanding Engineering Award 2012

IEEE PES 'Outstanding Engineer Award' is aimed to recognize outstanding technical, professional and society contribution on behalf of the power and energy profession. This award will be given each year. Special plaque of "*IEEE Power & Energy Society of Queensland Outstanding Engineer Award*" will be presented to the recipient by the chair of the IEEE PES chapter.

In 2012, Call for nomination started 15th of November and was publicized through IEEE website, newsletter, e-notices and direct email to industry contacts. Nominations for the 2012 Outstanding Engineer Award are accepted from IEEE Queensland Section engineers who contributed to the power engineering profession. Nomination form must be submitted electronically to the PES Chapter Chair (Email: m.eghbal@ieee.org) not later than 15 December 2012. The nomination form can be downloaded from link below:

http://ewh.ieee.org/r10/queensland/v2/lib/exe/fetch.php/chapters:pes:oea_2010_nomination_form.doc

Eligibility Criteria:

- Outstanding technical contributions to the power engineering profession.
- Outstanding professional and leadership contributions to the power engineering profession
- Significant contributions to the local community representing the power engineering profession.
- Outstanding contributions in the area of power engineering education.
- Service to the Power Engineering Society and/or IEEE.
- PES and/or IEEE membership.

Power & Energy Society Chapter-Weblink

<http://www.ewh.ieee.org/r10/queensland/v2/doku.php/chapters:pes:start>

Engineering in Medicine & Biology

Office Bearers:

Chair: Amol Waghlikar

Vice-Chair: Mohan Karunanithi

Secretary: Mark Griffin

Report not submitted

Reports from the Section Affinity Groups and student branches

WOMEN IN ENGINEERING (WIE)

Office Bearer:

Chair: Sandra Mau

The third year of Women in Engineering Affinity Group in Queensland has successfully resulted in a number of local events. This year's outreach continues to build on the WIE QLD goal of bringing the women in our community together, particularly by coordinating events with other local groups. To participate, please join our mailing list <https://listserv.ieee.org/cgi-bin/wa?SUBED1=WIE-QLD&A=1> or email sandra.mau@ieee.org

IEEE World Congress on Computational Intelligence

The 2012 IEEE World Congress on Computational Intelligence (IEEE WCCI) is the largest technical event in the field of computational intelligence and was held in Brisbane this year. The IEEE Women in Computational Intelligence (WCI) Subcommittee and the Women in Engineering (WIE) Queensland Chapter jointly organised a panel discussion and reception at IEEE WCCI on Tuesday 12th June 2012. The event was attended by a total 63 men



and women from 29 countries (See Figure 1).

The event was co-chaired by Dr Keeley Crockett (Chair IEEE CIS Women in Computational Intelligence Society) and Dr Mary Tom (IEEE Women in Engineering, Queensland Chapter) and was opened by the President of the IEEE Computational Intelligence Society Professor Marios M. Polycarpou (Figure 2).

The panel entitled “Attracting and Retaining Women in the development of a Smart World” featured panellist’s Professor Gary Yen (Past president of the IEEE Computational Intelligence Society who discussed the role of women affinity groups. Dr Shelly Brown (Interim Chief Executive Officer (VSPC)) who addressed the issue of gender balance in

Figure 1 IEEE WCCI Attendee Geographic Data

computing and engineering work places.

Professor Sushmita Mitra (Indian Statistical

Institute, Kolkata.) who examined gender imbalance in India and Professor Valerie Cross (Miami University, Ohio) discussed the importance of coaching and mentoring young researchers. Following the panel a lively discussion took place and some thought provoking questions were asked and discussed. Following the panel, attendees networked outside over canapés and drinks providing opportunities to discuss research areas and form new friends.



Figure 2 Welcome Address by President of the IEEE Computational Intelligence Society Professor Marios M. Polycarpou

Thanks to all the organisers, the panellist's and both CIS and WIE who made this event possible.



Figure 3 Professors Sanaz Mostaghim, Valerie Cross and Pauline Haddow



Figure 4 Professor Dipti Srinivasan, Professor G A Vijayalakshmi Pai and Dr Mary Tom

Joint Australian Computer Society (ACS) and IEEE Seminar – Change Management

In July, IEEE WIE QLD and ACS-Women joined forces to organise a joint event entitled "CHANGE MANAGEMENT - It's not just a girl thing". There is a growing international acknowledgement that change management is a critical success factor to delivering benefits of programs and projects.

Two presenters, Marie-Claire Grady (Managing Director 3RD VIEW Consulting) and Stuart Waddington (Director / Business Performance Facilitator at New Arenas Capital Pty Ltd), shared their vision for the importance of change management and outlined some tools and examples for this.

There were over 50 attendees at the talk and lots of networking both before and after the event. This event was a great opportunity for IEEE members to mingle with ACS members.



Figure 5&6 Presenters Marie-Claire Grady and Stuart Waddington speaking at joint ACS-W and IEEE WIE event to audiences

Girls in Engineering Ambassador Roundtable

In July, representatives from various local groups supporting women/girls in technical fields got together to discuss issues regarding girls' educational outreach programs to increase gender diversity in engineering. Attending groups included IEEE WIE QLD, Engineers Australia (EA) QLD and their Women

In Engineering QLD group, university representatives, government representatives, and industry representatives. This roundtable kicked off an educational outreach collaboration between EA and IEEE, with IEEE contributing resources from our existing TISP program (which was in the growth stages in Australia) to extend the programs of other local groups. This has spun off into an independent committee to address wider educational outreach to both girls and boys in Australia. The local women's groups continue to have regular meetings to touch base and coordinate our efforts.

In summary, it was another fruitful year for the WIE QLD AG and we look forward to more in 2013.

GRADUATES OF THE LAST DECADE (GOLD) AFFINITY GROUP

Office Bearers:

Chairman: Mr Robert Ellen

Vice-Chairman: Mr Roelof Swanepoel

General remarks

It was a quiet year for the IEEE Queensland Section GOLD AG. We participated in two reportable technical or professional events.

As both the Chairman and Vice-Chairman are approaching the 10-year cutoff for GOLD membership, we hope that some enthusiastic and more recently graduate IEEE members will come forward and lead the affinity group in the coming years.

Technical / Professional Events

May 1: Graduate Transition – The Way Forward

The IEEE Queensland Section GOLD AG was a co-host / sponsor of a panel discussion evening on the topic of Graduate Transition, which was primarily organised by Young Engineers Australia Queensland and held at the offices of AECOM, in the Fortitude Valley, Brisbane. Almost 100 young engineers (students and recent graduates) attended, including about nine IEEE members (student, graduate or full).

The panellists were:

- ▲ Michael Anthony (Mine Planning Manager, Leighton Contractors)
- ▲ Tara Herley (Project Engineer, VDM)
- ▲ Michael Kavourakis (Project Manager, AECOM)

August 11: Young ICT Explorers 2012 Queensland Competition Judging Day

The IEEE Queensland Section GOLD AG represented eight IEEE members on the judging panel of the 2012 Young ICT Explorers Queensland Competition Judging Day held at UQ St Lucia Campus.

"Young ICT Explorers is a not-for-profit competition, which has been created by SAP to encourage school students to create their best Information and Communication Technology (ICT) related projects.

The competition's alignment with the school curriculum enables students to apply what they learn in their ICT classroom to develop a technology related project. At the judging event, students have the opportunity to present their project to a judging panel of academia, industry partners and ICT professionals. Each project is assessed on the criteria of creativity, uniqueness, quality, level of difficulty and project documentation."

<http://www.youngictexplorers.net.au/cms/>

IEEE UNIVERSITY OF QUEENSLAND STUDENT BRANCH

Chair: Ismail Mohamed

Vice-Chair: Lavish Lalwani

Committee: Mio Nakatsuji-Mather, I-Ping Weng, Ebrahim Khalil

Power & Energy Chapter Chair: Kazi Hasan

Student Branch Counselor: Vaughan Clarkson, Tapan Saha
(acting; Sem. 1)

Introduction

The UQ Student Branch has continued to be active and successful in 2012. The Branch operated with all-new student leadership this year, with the previous committee having graduated.

Major Activities for 2012

The following activities were organised this year:

- A two-hour tutorial session, across all technical subject areas in Information Technology & Electrical Engineering, was held on 17th May.
- IBM Australia sponsored a pizza lunch and recruitment seminar on 15th October.
- As a consequence of winning a 2010–2011 IEEE Student Enterprise Award for their proposal 'Engineering Young Australians', the Branch has been preparing a set of hands-on activities for Grade 5 students. The first school visit is scheduled for 6th December. A YouTube video has been prepared to promote the activity: <http://youtu.be/RpaApGyxPWs>

Other activities for 2012

The UQ Student Branch participated in a couple of joint activities with the Queensland Section's SP/Comms chapter in Semester 2 and, through the Branch's Power & Energy Chapter, with PES also. Please refer to the PES & SP/Comms annual reports for details.

Announcements

Nominations for 2012 offices were solicited in September. The Student Branch officers for 2013 will be Lavish Lalwani (Chair), Ebrahim Khalil (Vice Chair) and Mio Makatsuji-Mather (Secretary).

In closing, I'd like to thank the Chair, Ismail Mohamed, for his excellent service as Chair this year. Also, my thanks goes to Tapan Saha, who stood in for me as Student Branch Counsellor in Semester 1 while I was on Special Studies Leave overseas.

Vaughan Clarkson

Student Branch Counsellor, IEEE UQ Student Branch, Queensland

**IEEE QUEENSLAND UNIVERSITY OF TECHNOLOGY
STUDENT BRANCH**

Student Branch Counselor: Jacob Coetze

Report not submitted

IEEE USQ STUDENT BRANCH

Student Branch Counselor: Paul Wen

Report not submitted

IEEE CQU STUDENT BRANCH

Student Branch Counselor: Paul Wen

Report not submitted