



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

QUEENSLAND SECTION

2013 ANNUAL REPORT SUBMITTED TO REGION 10

Based on a report originally presented at the
Queensland Section AGM on 28 November 2013

PART A – SECTION SUMMARY

A.1 Executive Summary

• SECTION EXECUTIVE COMMITTEE MEMBER LIST

Office	
Chair	Tapan Saha
Vice Chair	Mike Robinson
Secretary	Rahul Sharma
Treasurer	Ruifeng (Richard) Yan (Feb. 2013 onwards)
Immediate Past Chair	Abbas Bigdeli
Newsletter Editor	Robert Ellen
Webmaster	Nilesh Modi
Professional Activities	<i>Vacant</i>
Membership Development chair	Chandima Ekanayake
Awards & Recognition	Mike Robinson
Student Activities Chair	Jack Gaynor (Feb. 2013 onwards)
Educational Activities Chair	<i>Vacant</i>
Engineers Australia Liaison	Tapan Saha
Women in Engineering	Mary Tom
Women in Engineering (Vice chair)	Sandra Mau
Women in Engineering (Secretary)	Mahnaz Shafiei
Aerospace and Electronic Systems Chapter	Garry Einicke
Aerospace and Electronic Systems Chapter (VC)	Steve Ashfield
Aerospace and Electronic Systems Chapter (Sec)	John Davies
Computational Intelligence Chapter	Ross Haywood
Computational Intelligence Chapter (VC)	Jun Jo (May 2013 onwards)
Computational Intelligence Chapter (Sec)	<i>Vacant</i>
Computer Chapter	Mike Robinson
Computer Chapter (VC)	<i>Vacant</i>
Computer Chapter (Sec)	<i>Vacant</i>
Control Systems/Robotics & Automation Chapter	John Billingsley
Control Systems/Robotics & Automation Chapter (VC)	Michael Kearney (May 2013 onwards)
Control Systems/Robotics & Automation Chapter (Sec)	<i>Vacant</i>
Engineering in Medicine & Biology Chapter	Mohan Karunanithi (May 2013 onwards)
Engineering in Med & Biology Chapter (VC)	Steve Wilson (May 2013 onwards)
Engineering in Med. & Biology Chapter (Sec)	Amol Wagholikar (May 2013 onwards)
MTT/AP Chapter	<i>Konstanty Bialkowski</i>
MTT/AP Chapter (VC)	David Ireleand
MTT/AP Chapter (Secretary)	Morteza Shahpari
Power & Energy Chapter	Mehdi Eghbal
Power & Energy Chapter (VC)	Chandima Ekanayake
Power & Energy Chapter (Secretary)	Nilesh Modi
Power and Energy Chapter (Student rep)	Kazi Nazmul Hasan
Signal Pro & Comms Chapter	Vaughan Clarkson
Signal Pro & Comms Chapter (VC)	Dharmika Jayalath
Signal Pro & Comms Chapter (Sec)	<i>Vacant</i>
GOLD Affinity Group	Alexandra Price (Feb. 2013)
GOLD Affinity Group (VC)	Prachi Redey (June 2013 onwards)
GOLD Affinity Group (Sec)	Matthew Zillmann (June 2013 onwards)
Student Counsellor QUT	Jacob Coetzee
Student Counsellor UQ	Vaughan Clarkson
Student Counsellor GU-GC	Jahangir Hossain (March 2013 onwards)
Student Counsellor GU-Nathan	Sascha Stegen (March 2013 onwards)
Student Counsellor USQ	Paul Wen (May 2013 onwards)
Student Counsellor CQU – Brisbane	Mary Tom
Student Counsellor CQU – Rockhampton	Aruna Jayasuriya (Feb 2013 onwards)
UQ Student Branch Chair	Lavish Lalwani (may 2013 onwards)

• **SECTION HIGHLIGHTS**

- Based on the latest available statistics, Queensland Section current membership number is 1,155, which is about 2% increase from the last year same time.
- In 2013, we had our first strategic meeting of the Section and we set a very high standard for the chapters and affinity groups. Most organisational units (chapters and affinity groups) hosted by the Section have held at least two meetings in 2013 required for official 'active' status.
- A number of Chapters have performed outstandingly during this year. Power & Energy Society Chapter, Joint Chapter of Microwave Theory and Techniques/Antennas and Propagation & Joint Chapter of Signal Processing and Communications have provided very high level of professional service to our Section Members.
- WIE and GOLD also have done very well relative to the last couple of years.
- Our student branches have mixed level of activities. University of Queensland student's branch did exceptional service and they are to be congratulated. Other university branches have a long way to go.
- The Section actively continued to promote student activities and membership drive functions.
- The annual undergraduate thesis prize competition was on again this year. We have selected two thesis prizes for these awards.
- In 2013, eleven executive committee meetings were held, plus the AGM. This year's committee meetings were organised at UQ, St. Lucia campus in Brisbane. We had very good attendances in the meetings and we provided opportunities for distant members to attend the meetings through teleconference/Skype as in previous years.
- The Section Chair Prof Tapan Saha attended the R-10 Section Chairs meeting in Thailand. His proposal to host 2014 IEEE R-10 Section Chair meeting in Brisbane was accepted. Unfortunately, the proposed R-10 meeting in Brisbane was later cancelled by IEEE R-10 due to high cost implications.
- The Section Chair attended several Chapter and Student Branch functions, giving presentations on the benefits of IEEE membership to the attendees.
- Our section provided accounting/business support to the International Conference on Image Processing (ICIP), sponsored by the IEEE Signal Processing Society, held in Melbourne. Special thanks to our Section treasurer for his involvement in this matter.
- Our Section finance is in a good condition with substantial savings and reasonable operating fund. We hope this to be continued in 2014.
- In 2013, the MTT/AP joint chapter hosted **15 events** for the calendar year. This includes 14 seminars and workshops on a wide range of topics relating to the diverse interests of our chapter.
- PES Chapter organised **10 technical programmes** (6 technical seminars, one distinguished Lecture, one workshop and 2 site visits) and one social event. PES chapter was recognized as one of the High Performing Chapters under the High Performing Chapters Programs in 2012. PES chapter was recognized as a Runners-up chapter for 2012 Outstanding Large Chapter Award (This is the third year that PES chapter has won this award).
- IEEE Signal Processing Society Queensland Chapter has been awarded Certification! This Certification will be valid for four years, so the Chapter will be certified from 1 January 2014 through 31 December 2017. Chapter will receive the following benefits in 2014: A certificate of merit plaque for the 2013 Chapter Chair, an appreciation certificate for each 2013 Chapter Officer and the Chapter Chair (or his representative) can apply for a travel support grant up to \$500 per Chapter to attend the next Chapter Chairs meeting at ICASSP 2014.

A.2 Financial Report from treasurer

In office: Dr. Ruifeng (Richard) Yan

IEEE Queensland Section			
Financial Report, 2013 AGM			
Period: 1 December 2012 to 30 November 2013			
Report prepared by Ruifeng Yan, Treasurer 2013			
Income		Expenses	
IEEE Rebates:		Travel:	
IEEE Annual Rebate 2012	7,206.26	Lavish Lalwani - R10 Student Congress 2013	1,406.00
IEEE Annual Rebate 2013 (USD 8,150.49)	8,037.96	Prachi Rahul - IEEE GOLD Congress	1,207.74
Student Branch Rebate 2012	287.61	Admin:	
AESS Chapter rebate	143.18	Execom meetings (Chorus Call&Skype)	180.59
MTT/AP Chapter Annual Funding 2013	924.20	Montly Meeting - Catering Expenses	1,160.93
IBM & IEEE Recruitment Event	500.00	IEEE Australia Council Levy 2012	344.10
PES High Performance Rebate 2012	663.19	EA Awards Dinner	
PES share of profits	4579.10	Sponsorship	500.00
PES DL Reimbursement	579.88	Attendance	150.00
AGM Dinner Payments (2012)	160.00	IEEE Student Thesis Prizes	
AGM Dinner Payments (2013)	1,380.00	Thesis Prizes 2012	1,000.00
Interest (Mecu)		Thesis Prizes 2013	1,000.00
Transferred to Access Account	1,607.45	Postgraduate awards & grants	
Re-invested in Term Deposits	2,349.40	Nadali Mahmoudi - PES Travel Prize	1,000.00
		Houman Pezeshki - PES Travel Prize	1,000.00
		2012 AGM	
		St Leo's College AGM Dinner	2,815.00
		Loncala P/L Alcohol Expenses	205.05
		Engraving Expense	61.50
		Student Drives	
		Events	1,672.43
		Enterprise Project	1,112.47
		Cheque Book Fees (Mecu)	7.50
		Chapter and Affinity Group Expenses	
		MTT/AP	915.80
		PES	2,951.13
		AES	1,173.70
		CSS / RA	343.50
		WIE	443.03
		GOLD	255.75
		TSIP	515.96
Total Income	28,418.23	Total Expenses	21,422.18
Accrued Income (Accounts Receivable)		Accrued Expenses (Accounts Payable)	
Gold Reimbursement 2013 R10 in India	250.00	AGM Dinner 2013 estimate	3,000.00
PES High Performing/Outstanding Award	1060.00	Australian Council Levy (2013)	344.10
PES Family BBQ	450.00	Chandima Ekanayake - R10 Congress 2013	500.00
	1,760.00		3,844.10
Total Income	30,178.23	Total Expenses	25,266.28
Assets			
			At 28 Nov 2013
Mecu Accounts			
Access Account			7,874.14
3.95% TD 138322014 matures 17 December 2013			24,060.07
3.50% TD 307188229 matures 13 January 2014			20,000.00
4.10% TD 307188228 matures 13 September 2014			22,533.55
Total Cash at Bank			74,467.76
Accounts Receivable			1,760.00
Total Assets			76,227.76
Liabilities			
Accounts Payable			3,844.10
Total Liabilities			3,844.10
Net Worth			72,383.66
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		

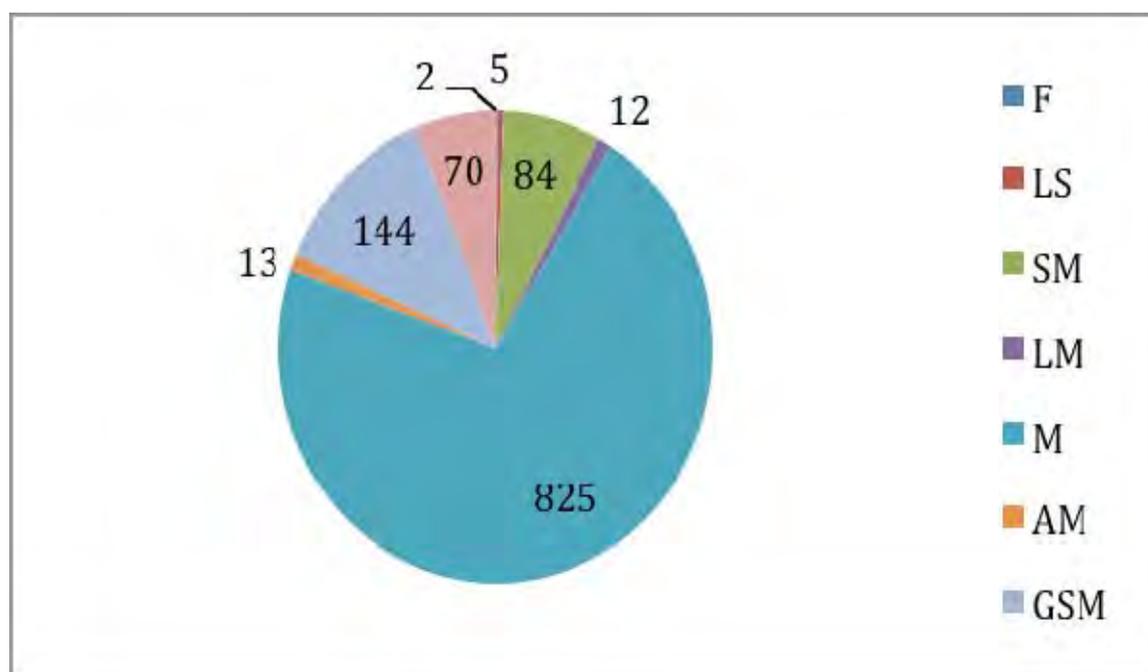
PART B – ORGANIZATIONAL ACTIVITIES

PART B - ORGANIZATIONAL ACTIVITIES

B.1 REPORT FROM MEMBERSHIP DEVELOPMENT CHAIR

In office: Dr. Chandima Ekanayake

Based on the latest available statistics our current membership number is 1155, which is about 2% increase (23 members) from the last year same time. Total membership distribution is shown in the following chart.



IEEE Membership distribution in 2013

For year 2014 IEEE has set a target for increasing its member number by 2.6% and higher grade member number in R-10 by 2%. Based on the current statistics IEEE QLD Section is not far behind from these targets.

IEEE highly recommends its members to take a society membership on top of the IEEE membership. I have recognized that many of our members have at least one society membership. However, still there are few members, especially student members who haven't joined any of the societies. As societies organize many technical activities I would suggest those members to join a suitable society when they renew their membership.

In the year 2012, we have initiated a membership elevation program to promote our members to apply for upgrading their membership. However in 2013 only 5 members have been upgraded as SM. I would like to request all members to visit our website http://ewh.ieee.org/r10/queensland/v2/doku.php/membership_elevation and check whether they are eligible to apply for a higher grade member. If you are interested and eligible the section can nominate them for upgrading the membership.

In 2013 we have closely worked with IEEE - R10 to retain the higher grade members with arrears through an outreach program. The section has also supported student activities such as university based membership drives, which always helps to promote our activities among students. Also many activities including distinguished lecturer programs 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.

B.2 Chapter Activities

B.2.1 COMPUTATIONAL INTELLIGENCE SOCIETY

Office Bearers:

Chair: Dr. Ross Hayward

Vice-Chair: Prof. Jun Jo

The Queensland Chapter of the Computational Intelligence Society was active in 2013 but had a very quiet year. Two virtual meetings were held during the year and a student symposium was anticipated later in the year. Unfortunately technical talks did not eventuate this year for various reasons. Early planning is under way for another IEEE Summer School in Computational Intelligence and Information Technologies to be held in January 2014 at the Gold Coast Campus of Griffith University.

B.2.2 COMPUTER SOCIETY CHAPTER

Office Bearers:

Chair – Mike Robinson

Vice-Chair – Professor Brian Lovell

The IEEE Computer Society has had another year of near-dormancy. Once again the chapter chair has not been able to achieve the goals he set for himself, mainly to establish student branches of the Computer Society at each of the Brisbane university campuses.

Two professional events were held during the year. The first was jointly sponsored by the Australian Computer Society and held at their premises in Adelaide Street Brisbane on 5th March 2013. Dr Zoran Milosevic presented a paper on Open Distributed Processing.

The second meeting was held at the University of Queensland on 28th November. Mike Robinson presented an overview of the computer industry in the early 1960s, looking at the computer vendors of that era, their hardware offerings, and available software languages in the early days of the IT revolution.

These two events were sufficient to keep the Queensland chapter active for 2013. The Computer Society chapter accounts for approximately 25% of the membership of the Queensland Section, providing the latter with valuable operating funds by way of the annual membership rebate. The challenge for the year ahead is to locate a small, dedicated and inventive team that will put the Computer Society chapter back on its feet. I firmly believe the team will have to come from the academic world because computer professionals in the business world won't have the necessary time or motivation to undertake the task.

B.2.3 CONTROL SYSTEMS / ROBOTICS AND AUTOMATION SOCIETY

Office Bearers:

Chair: John Billingsley

Vice Chair: Michael Kearney

The Control Systems / Robotics and Automation Society Chapter has organised three events for 2013.

On Wednesday August 7th, 5 to 6 p.m. a lecture was presented by Dr Cheryl McCarthy in room Z469 of the University of Southern Queensland, Toowoomba.

The title was "Low-cost machine vision-based automation of labor-intensive tasks for agriculture". Examples of low-cost machine vision systems that were presented included weed spot spraying and bait box surveillance for the honeybee industry. Although there were only ten in the audience, four of whom were IEEE members, the questions both during and at the end of the presentation showed keen interest. It is possible that the presentation will be repeated as a webinar for the IEEE special interest group for Robotics in Agriculture.

On Thursday October 3rd, two meetings were held in the seminar room of the new Advanced Engineering Building, UQ, Brisbane (49-502).

From 3 to 4 p.m. Dr Rohan C Shekhar spoke on "Extremum-Seeking Control for Optimal Flex-Fuel Engine Performance," concerning a paradigm for tuning internal combustion engines for the use of unrefined fuels. Of the fifteen who attended, eight were IEEE members.

From 4 to 5 p.m. Dr Imam Shames spoke about applying control theory to understand social networks, with the title "On Factions in Complex Systems". This involved the mathematical modelling of social networks and how to influence the formation of factions within a social network. Of the nineteen who attended, ten were IEEE members.

B.2.4 ENGINEERING IN MEDICINE AND BIOLOGY CHAPTER

Office Bearers:

Chapter Chair: Dr. Mohanraj Karunanithi

Vice Chair: Assoc. Prof. Stephen Wilson

Secretary: Dr. Qing Zhang

Treasurer: Dr. Amol Waghlikar

Activities

Despite the late start, we were quite effective in having 3 events in the second half of the year. The activity details are as follows:

- On 24/7/2013, IEEE Qld EMBS organized and invited *Prof Caroline Cao* from Wright State University, USA to present "Safety Issues in Robotic Surgery" at Brisbane. Attendants were 30~40.
- On 10/10/2013, IEEE Qld EMBS organized and invited *Dr. Tan Yeow Kee* from Agency for Science, Technology and Research, Singapore to present "HuGGler & SoundEye: Radical way of providing comfort and care to elderly?" at Brisbane. Attendants were 10.
- On 12/11/2013, IEEE Qld EMBS, together with HISA Queensland organized HIC 2013 Reprise at Brisbane. This event invited some speakers from HISA Big Data 2013 and HIC 2013 to present short versions of their talks to local Queensland audiences.

B.2.5 MICROWAVE THEORY AND TECHNIQUES/ANTENNAS AND PROPAGATION JOINT CHAPTER

Office Bearers:

Chair: Konstanty Bialkowski (The University of Queensland)

Vice Chair: David Ireland (CSIRO)

Secretary: Morteza Shahpari (Griffith University)

In 2013, the MTT/AP joint chapter was pleased to host **15 events** for the calendar year. This includes 14 seminars and workshops on a wide range of topics relating to the diverse interests of our chapter. The other event was a planning meeting in February which helped with the increased chapter activity for this year.

Some of the highlights of this year were seminars in the topics areas of optics and terahertz, RFID, theoretical and computational electro-magnetics, communications and antennas. Also we would like to thank the local industry members of EM Solutions Pty Ltd and Microo Ltd for presenting two of the seminars this year. Another highlight of this year was the postgraduate and recent graduate workshop which had 5 presentations from UQ and Griffith on various topics relating to antennas and microwave systems.

All of the seminars were well received and the average attendance 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.

Seminars and Workshops 2013

This year all seminars and workshops were recorded on the MTT/AP website:

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

January

- 17 January (The University of Queensland): “Chipless RFID: Revolution in Identification in the New Millennium”, A/Prof Nemai Chandra Karmakar, Monash University, Melbourne Australia.

April

- 9 April (The University of Queensland): “Terahertz quantum cascade lasers: physics and challenges in design, growth and fabrication”, A/Prof Dragan Indjin, University of Leeds, UK
- 26 April (The University of Queensland): “The Use of Multiplicity in Antenna and Propagation Engineering for Wireless Communication”, Prof. Karu Esselle, Macquarie University, Sydney, Australia

May

- 2 May (The University of Queensland): “The Cell Method for electrical engineering and Multiphysics problems”, Dr Fabio Freschi, Politecnico di Torino, Torino, Italy
- 10 May (The University of Queensland): “Maxwell-Plus-Plus: Clifford's Approach to Electromagnetism”, Dr Andrew Seagar, Griffith University, Brisbane, Australia
- 17 May (Griffith University): “Maxwell-Plus-Plus: Clifford's Approach to Electromagnetism”, Dr Andrew Seagar, Griffith University, Brisbane, Australia
- 20 May (The University of Queensland): “Chipless RFID Tag Sensor for Ubiquitous Environment Monitoring”, Emran Md Amin, Monash University, Melbourne, Australia

June

- 28 June (The University of Queensland): IEEE MTT/AP Queensland Postgraduate and Recent Graduate Workshop", (5x students from Griffith University + The University of Queensland)

July

- 23 July (The University of Queensland): "Broadband Satellite Communications on-the-Move", John Logan, EM Solutions Pty Ltd, Brisbane Australia

September

- 20 September (The University of Queensland): "Smart Materials for Chipless RFID Sensors: Revolution in Identification and Sensing in the New Millennium", A/Prof Nemaï Karmakar, Monash University, Melbourne, Australia.

October

- 10 October (The University of Queensland): "An Optical Link for the Airborne Environment", Conrad Fontes, Micreo Ltd, Brisbane, Australia

November

- 14 November, "Dielectric Resonator Antennas: From microwaves to optical frequencies", Prof. Christophe Fumeaux, University of Adelaide, Adelaide, Australia
- 15 November, "Radar research in Pisa", (Co-hosted with SP/Comm Chapter) Prof. Marco Martorella, Dept. of Information Engineering University of Pisa

B.2.6 POWER AND ENERGY SOCIETY CHAPTER***In office:***

Chair: Dr Daniel (Mehdi) Eghbal, Energex

Vice Chair: Dr. Chandima Ekanayake, UQ

Secretary: Dr. Nilesh Modi, AEMO

UQ PES Student branch chair: Mr. Mehdi Mossadeghi

Highlights of -2013

- Organised 10 technical programmes (6 technical seminars, one distinguished Lecture, one workshop and 2 site visits) and one social event.
- PES chapter was recognized as one of the High Performing Chapters under the High Performing Chapters Programs in 2012.
- PES chapter was recognized as a Runners-up chapter for 2012 Outstanding Large Chapter Award (This is the third year that PES chapter has won this award).
- PES chapter received Region 10 technical seminar and distinguished lecture support program fund
- PES chapter was one of the recipients of Region 10 social activity programs fund
- PES Chapter awarded two student travel prizes for student members to attend and present paper at the 2013 IEEE PES General Meeting conference, held in Vancouver, Canada. Mr. Houman Pezeshki from Queensland University of Technology (QUT) and Mr. Nadali Mahmoudi from the University of Queensland (UQ) were the winners of this award. Each winner received a cheque worth \$1000.
- PES Student branch at the University of Queensland organised two site visits for student members.

- Professor Tapan Saha was recognized as the 2012 IEEE PES Outstanding Engineer for his professional activities and contribution to the power and energy profession.
- Archives of 2010-2013 activities can be accessed from the website of the PES chapter
- Process has been started to form PES-DEIS joint chapter
- PES chapter vice chair attended 2013 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: Ergon Energy Smart Grid Initiatives

Date: 28 May 2013 **Venue:** Ergon Energy, Brisbane

Speakers:

Mr. Greg Caldwell, Senior Engineer Network Capability & Utilization from Ergon Energy gave a presentation on “Dynamic Feeder Ratings” – optimizing the utilization of overhead lines and underground cables by integrating real-time environmental and asset condition information to reveal where capacity is available for transfer.

Dr. Mike Wishart, Principal Engineer Technology Innovation from Ergon Energy gave a presentation on “Grid Utility Storage System (GUSS)” – an energy storage system for single wire earth return systems being used to perform both peak load reduction (via storage) and provide voltage support (via the control system).

Dr Lisa McDonald, Manager of Demand Advocacy and Development from Ergon Energy gave a presentation on “*Creating low energy sustainable estates of the future*” – Ergon Energy’s collaborative projects working with residential developers to create a framework for low demand residential estates, the creation of a Trade Ally Network and methodologies for engaging SMEs in DSM.



2) Technical Seminar

Title: Extreme weather and volatile pricing in the electricity market

Date: 30 May 2013 **Venue:** Hawken Auditorium, Engineers Australia

Speaker: Mr. Paul McArdle, CEO of Global Roam



Paul McArdle is the CEO of GLOBAL-ROAM – a company that helps clients to reduce their stress and cost, and/or increase their revenues, by making the energy market more understandable.

In this presentation, Paul spoke about the recent market volatility in QLD over the period summer 2012-13 through till the end of Q1. The analysis presented forms part of a deeper analysis performed by GLOBAL-ROAM as part of a detailed report to be released shortly.

Abstract: During a hot and volatile summer in the Queensland region of the NEM, Global-ROAM fielded a number of questions from clients (and others) who asked Global-ROAM to help them understand what was happening, and why – specifically with respect to spot prices, but also with respect to other variables.

During summer, Global-ROAM prepared some isolated pieces of preliminary analysis, which were delivered to clients directly, or published more broadly on WattClarity® here:

<http://www.wattclarity.com.au/2012/11/summer-2012-13-in-the-nem/>

However the questions kept coming.

This report has been prepared, with the benefit of hindsight and time to analyse (and with the assistance of experienced market analysts), to expand on the explanations given – particularly with respect to the diverse number of factors combining to deliver this volatility.

1) Technical Seminar:

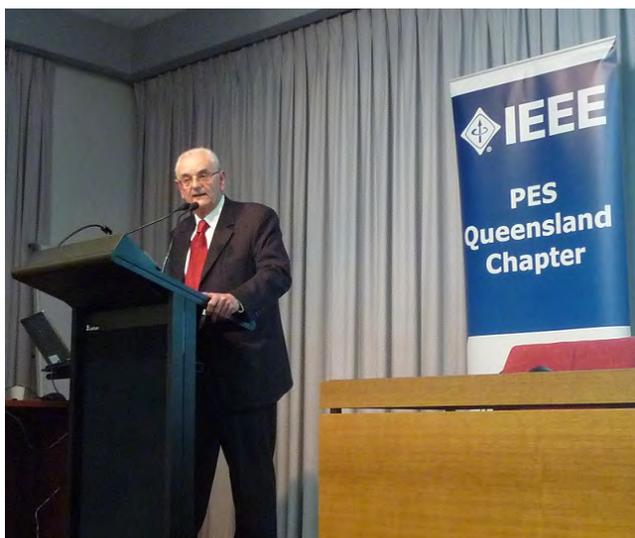
Nuclear Energy - the implications for Australia

Date: 15 July 2013 Venue: Engineering House, Engineers Australia

Speakers: Tony Irwin & Ian Lowe

Abstract:

Nuclear Energy is a very current – and highly controversial – topic of discussion, as Australia endeavors to transition from a fossil fuel dependent to a lower carbon economy, consistent with the targets set for reducing CO₂ emissions. Nuclear energy, promoted as a ‘clean energy’ solution, is being considered as part of the future stationary energy mix. It is a highly complex process requiring exacting controls. This event provides an excellent opportunity to hear from two highly credentialed speakers on the advantages and disadvantages of proceeding along the nuclear energy path, including aspects related to technology innovation, fuel supply, energy security, risks, safety, sustainability, and long term radioactive waste storage. Each speaker will present for 30 minutes, followed by a Q&A session of 30 minutes.



Ian Lowe



Tony Irwin

2) Technical Seminar

Power Engineering Research at the University of Queensland

Date: 10 July 2013

Venue: Engineering House, Engineers Australia

Speakers:

Professor Tapan Saha, the University of Queensland

Dr. Chandima Ekanayake, the University of Queensland

Dr. Richard Yan, the University of Queensland

Professor Simon Bartlett, the University of Queensland



Professor Tapan Saha



Dr. Richard Yan



Dr. Chandima Ekanayake



Professor Simon Bartlett

Abstract: Power engineering research activities at the University of Queensland (UQ) are centered on power system analysis and condition assessment of critical power system plant. The group's research in power systems focusses on a number of challenging problems associated with the integration and optimization of distributed renewable generation into the main national grid and local distribution networks. This includes long distance transmission of large scale geothermal power generation, the integration of solar PV connected to low voltage distribution networks and wind power intermittency issues. A significant proportion of the electricity infrastructure in Australia and other countries is aged and requires special attention. Research focus in this area involves industry orientated research and aims to deliver next generation condition assessment techniques that comprise accurate modelling and interpretative tools for power transformers, underground cables and other plant assets. Power engineering at UQ enjoys strong industry collaboration in research both nationally and internationally. The research group is also a major partner of the Australian Power Institute. This seminar will highlight some of the group's recent research outcomes.

3) Distinguished lecture

Substation Automation and Enterprise Data Management to Support Smart Grid

Date: 5 August 2013

Venue: ENERGEX

Speaker: Mr. John D, McDonald, P.E., Director, Technical Strategy & Policy Development GE Energy's Digital Energy



From left: Dr. Daniel Eghbal, Mr. John McDonald, and Prof. Tapan Saha

Abstract:

The purpose of this talk was to familiarize participants with substation automation, its role in enterprise data management, and their roles in supporting smart grid, or grid modernization. The IEEE standard term, Intelligent Electronic Device (IED), was defined. The three levels of integration and automation activity in the substation were discussed. IED integration and substation automation were compared and contrasted. IED operational and non-operational data are defined. The three functional communication paths from the substation to the enterprise were shown. The enterprise virtual data mart was discussed. The relationship of substation automation and enterprise data management with smart grid were discussed.

Technical Seminar

Presentation 1: Smart Grid: Concepts, Standards, Deployments and Lessons Learned

Date: 6 August 2013 **Venue:** The University of Queensland

Speaker:

John D, McDonald, P.E., Director, Technical Strategy & Policy Development GE Energy's Digital Energy

Presentation 2: ENERGEX Smart Grid Trial

Speakers:

David Wise, Future Technologies Development Manager, Energex

Aidan Roberts, Senior Future Technologies Implementation Engineer, Energex



The purpose of this talk was to familiarize participants with Smart Grid concepts and solutions, including Distribution Optimization, Transmission Optimization, Asset Optimization, Demand Optimization, Smart Meters and Communications, and Workforce and Engineering Design Optimization. Smart Grid industry standards efforts were discussed, including NIST, IEEE, CIGRE and IEC. An overview of recent Smart Grid deployments was given, including the lessons learned from the deployments.

4) Technical Seminar: **Earthquakes and Electrical Infrastructure**

Date: 19 August 2013

Venue: Energex

Speaker: Professor Neville Watson, University of Canterbury, Christchurch, New Zealand

This presentation gave an overview of impacts of the recent earthquakes in Christchurch city on electricity network infrastructure.

5) Technical Seminar

Performance of Silicone Rubber Based Materials for Applications in Outdoor insulation

Date: 11 September 2013

Venue: The University of Queensland

Speaker: Professor Stanislaw Gubanski, Chalmers University of Technology, Gothenburg, Sweden



Professor Stanislaw Gubanski

The presentation concentrated on polymeric outdoor insulation. It illustrated general aspects as well as research activities performed in this direction at Chalmers University of Technology.

6) Social event

IEEE PES Queensland Chapter organised a barbeque event for Queensland PES members. Below are the details:

Event Name: PES Barbeque

Venue: St. Leos College, The University of Queensland

Date and Time: 1st November 2013



PES Student members at the BBQ

7) Technical Seminar

Integrating Alternative Energy- Lessons from Germany

Date: 11 November 2013 Time: 5:00pm-7:00pm

Venue: Room 502- Advanced Engineering Building (#49) The University of Queensland

Speakers: Blake Harvey, Ergon Energy

Abstract:

This presentation is a candid look at the issues associated with renewable generation integration in Germany and subsequent lessons for Australia

Registration Link: https://meetings.vtools.ieee.org/meeting_view/list_meeting/21529

8) Technical Workshop

Technical workshop: Electrical Insulation fundamentals: Application to the condition monitoring of high voltage cables, overhead lines, power transformers, switchgear and instrument transformers

Date: 11-12 November Venue: Hawken Auditorium, Engineers Australia

Registration link: <http://www.engineersaustralia.org.au/events/electrical-insulation-fundamentals-two-day-workshop>

Electrical insulating materials are the backbone of power transmission and distribution equipment. If the insulation properties of the material degrade and it is not able to withstand the continuous or transient voltage, the equipment will fail catastrophically. This seminar will review the fundamentals of electrical insulation. It will explain the insulating structures found in high voltage equipment such as switchgear, transformers, outdoor insulators and cables. The common insulation degradation problems such as ageing and partial discharges will be described. Standard diagnostic techniques to monitor the state of the insulation in power transmission and distribution equipment will be presented by specialists in each type of equipment.

Biography of the speakers can be found here:

http://www.engineersaustralia.org.au/sites/default/files/shado/Divisions/Queensland%20Division/Branches/Electrical/bios_for_electrical_seminar.pdf

Student Prize

In 2013 PES chapter received 10 applications from the students of Queensland universities to attend and present papers at the 2013 IEEE PES General Meeting in Vancouver, BC, Canada. Mr. Houman Pezeshki and Nadali Mahmoudi were the winners in 2013 (received \$1000 check each). Award winners will receive a certificate from IEEE Queensland section during the section Annual General Meeting.



Mr. Houman Pezeshki receiving the \$1000 check from PES Chapter chair



Mr. Nadali Mahmoudi receiving the \$1000 check from PES Chapter chair

PES Student branch at The University of Queensland**Technical Event 1: Australian Energy Market Operator Control Centre Site Visit**

IEEE Queensland PES Chapter and UQ PES Student branch organised a site visit to the Australian Energy Market Operator (AEMO) control center in Brisbane on 17th of September. This event was attended by 18 IEEE student members from the University of

Queensland and Queensland University of Technology. Visitors were divided into two groups and for each group there was a 40-minute presentation and a 50-minute center visit. In the presentation session, AEMO staff gave a brief overview of the Australian National Electricity Market (NEM) and an introduction about responsibilities of AEMO control centers in Brisbane and Sydney. This presentation was followed by many interesting questions from students. During the site visit students were guided through the control center. First they visited training room and learnt how AEMO personnel are being trained to work during critical situation and major events in the National Electricity Market. And after that they were directed to the main control room where they could see the whole NEM power network and understand how AEMO is operating the electricity market and managing power system security.



Technical Event 2: The University of Queensland 1.2MW Solar PV plant Site Visit
 IEEE PES Student branch at the University of Queensland (UQ) organised a site visit to the UQ 1.2MW solar rooftop PV plant on 22nd of October. This event was attended by 17 IEEE student members from University of Queensland and Queensland University of Technology (QUT). First, there was a technical presentation for visitors at The Global Change Institute. A brief overview of the UQ PV plant and technical information about its online database, generated power, converters and batteries were given to visitors. This presentation was followed by interesting questions from students. After the technical presentation, students were guided through the PV plant at the UQ Centre. First they visited the converters room and learnt what they do and how they work. And after that they were directed to the rooftop of the UQ Centre where they could see installed PV panels.



Forming PES-DEIS joint chapter

Currently there are 13 Dielectric and Electrical Insulation Society (DEIS) members in the Queensland Section. As there is no separate chapter for these members currently relevant activities are organised mainly through PES as many of these members are joint members of PES. However, these events are not recognised by the DEI Society due to non-existence of a formal chapter. Therefore PES executive committee has decided to form a PES-DEIS joint chapter that enables the society to have formal links with DEIS and that could attract more resources to organize many more activities that benefits both PES and DEIS members. The new Joint chapter will be formed when 2014 executive committee for PES is formed.

PES Outstanding Engineering Award

The IEEE PES Queensland chapter launched the ‘Outstanding Engineer Award’ in 2010. In 2012 Professor Tapan Kumar Saha, Professor of Electrical Engineering at the University of Queensland, was recognized as the outstanding engineer and the plaque of “*IEEE Power & Energy Society of Queensland Outstanding Engineer Award*” was presented to him during the IEEE smart grid seminar on 28 May 2013.



Professor Tapan Saha receives IEEE PES Outstanding Engineer Award from PES Chapter Chair 2013

Announcement of PES Outstanding Engineering Award 2013

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 2013, Call for nomination starts 15th of November and is publicized through IEEE website, newsletter, e-notices and direct email to industry contacts. Nominations for the 2013 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 2013. 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.

Previous PES Outstanding Engineer Award recipients

2010	Dr. Dr. Jose Lopez-Roldan
2011	Dr. Dave Allan
2012	Professor Tapan Kumar Saha

[Power & Energy Society Chapter-Weblink](http://www.ewh.ieee.org/r10/queensland/v2/doku.php/chapters:pes:start)

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

B.2.7 JOINT CHAPTER OF SIGNAL PROCESSING AND COMMUNICATIONS

Office Bearers:

Chair: A/Prof. Vaughan Clarkson

Vice-Chair: Dr. Dhammika Jayalath

Introduction:

The Qld Section's joint SPS/ComSoc Chapter (also joint with Northern Australia Section) has continued to be active in promoting members' interests. In addition to the usual series of technical seminars, we have instituted an experiment this year entitled 'The First Tuesday Journal-Paper Club'.

Seminar Series

1. On 29th January, Prof. Tulay Adali, SPS Distinguished Lecturer, was scheduled to present a seminar entitled 'Complex-valued Adaptive Signal Processing: When and how to take noncircularity into account?' at QUT. Unfortunately, it coincided with the immediate aftermath of a severe thunderstorm, and QUT was closed for the day. Instead, Tulay participated in a small-group technical discussion off-campus.
2. On 18th July, Prof. Beat Stettler of the University of Applied Sciences in Rapperswil, Switzerland, presented a seminar entitled 'Multipath Connectivity Over Heterogeneous Wireless Networks for Public Transportation Vehicles'. The seminar took place at QUT and was well attended, with more than 30 people in the audience.
3. On 19th July, Dr. Sanjeev Naguleswaran of QSpectral Systems Pty. Ltd. presented a seminar entitled 'Dynamic Wireless Networks: Design and Optimisation for Critical Operations'. This seminar was held at The University of Queensland.

Professional & Non-Technical Activities

1. On 3rd April, the Chapter co-hosted a Careers Evening at the Central Queensland University, Brisbane campus, organised by the CQU Student Branch. Please refer to their report for further details.
2. The Chapter experimented with the hosting of an IEEE Day Celebration on 1st October. This took place at the Brisbane Brewhouse at Woolloongabba. The occasion was an opportunity for members to chat over a meal and a beer and to reflect on the benefits of IEEE membership. It was also an opportunity to discuss the planning of the 1st Tuesday Journal Club, as reported below.

New Initiative: 1st Tuesday Journal-Paper Club

For 2013, the Chapter undertook a new initiative, to hold meetings of a '1st Tuesday Journal-Paper Club'. The idea is to meet regularly, usually on the 1st Tuesday of the month as the name suggests (inspired by the ABC TV series "1st Tuesday Book Club"). Each month, the participants would agree on a highly cited, 'top ten' or major-prize-winning article in an SPS or ComSoc journal (but not one of our own!). We would also select a Discussion Leader. Through the month, each of the participants would read the article. At the next meeting, the Discussion Leader would lead a discussion of that article, starting with his/her own appraisal. In this way, it is hoped that we could all broaden our understanding of the field and further develop a sense of community.

The first meeting of the Club took place on a last Thursday, 31st October. The venue was the Brisbane Brewhouse in Woolloongabba. The Discussion Leader was the Chapter Chair, Vaughan Clarkson, and the selected paper was

Seung-Jean Kim, K. Koh, M. Lustig, Stephen Boyd, and Dimitry Gorinevsky, 'An Interior-Point Method for Large-Scale l_1 Regularized Least Squares', *IEEE J. Sel. Topics Signal Process.*, vol. 1, no. 4, pp. 606–617, Dec. 2007.

Upcoming Events

There are two upcoming events scheduled for the remainder of the year.

1. On Friday, 15th November, Prof. Marco Martorella of the University of Pisa, Italy, will present a seminar entitled 'Radar Research in Pisa'. The seminar will be held at 11am in the Advanced Engineering Building (Building 49), Room 502, at the UQ St. Lucia Campus.
 2. Another meeting of the 1st Tuesday Journal-Paper Club is tentatively scheduled for Tuesday, 3rd December. More details will be forthcoming.
- **Award:** IEEE Signal Processing Society Queensland Chapter has been awarded Certification! This Certification will be valid for four years, so the Chapter will be certified from 1 January 2014 through 31 December 1017. Chapter will receive the following benefits in 2014: A certificate of merit plaque for the 2013 Chapter Chair, an appreciation certificate for each 2013 Chapter Officer and the Chapter Chair (or his representative) can apply for a travel support grant up to \$500 per Chapter to attend the next Chapter Chairs meeting at ICASSP 2014.

Conclusion

In closing, I would like to thank my Vice Chair, Dhammika Jayalath, for his support in organising Chapter activities not only this year but over a period of many years. I'd also like to thank the members themselves for playing a part in the life of the Chapter. I've enjoyed my term as Chair and look forward to more Chapter activities in the future.

B.3 Professional and Continuing Education Activities

During 2013, the position for the Educational Activities Chair was vacant. Consequently, no report could be submitted.

B.4 Students Activities

B.4.1 STUDENT ACTIVITIES REPORT

In office: Jack Gaynor

The Student Branches of IEEE have had another great year. From the moment I stepped into the role for the first time at the start of the year all of the Student Branches have been organising events and engaging with both IEEE and the wider community.

This year The University of Queensland, Queensland University of Technology, University of Southern Queensland, Griffith University (both Nathan and Gold Coast) and Central Queensland University (Rockhampton and Brisbane) all had student branches which is a great result for the students of the QLD section. The branches put on many great events throughout the year from pizza lunches and membership drives to seminars from visiting lecturers to workshops to help their members out with interview skills to more pizza lunches.

One of the highlights of the year was the R10 Congress which one of the student members, Lavish Lalwani attended from the 11th-14th of July. The congress was hosted in Hyderabad

India and focused on “Empowering Women and Youth to Create a Better Tomorrow”. Lavish was sponsored by the IEEE QLD branch and attended many seminars and networking events with fellow IEEE Student, GOLD and WIE members in addition to senior IEEE members. This was a great experience for Lavish and I encourage everyone to get involved with IEEE as opportunities like these are possible through IEEE membership.

Whilst all the student branches put on many great events this year I would encourage the new executives to keep up the good work and set the bar high for 2014. It may seem like a lot to organize an event but the rewards to the branch, IEEE and the communities in general are well worth the effort. From the always popular pizza lunch to organising a seminar from a visiting lecturer there are many ideas that can be transformed into a successful event to foster technological innovation and excellence for the benefit of humanity.

I'd like to congratulate the winners of the student Thesis Prizes; Sean Purdon with his work 'Collaborative Control of Mobile Nodes Using Wireless Sensor Networks' winning the Best Final Year Thesis in All Fields of Electrical Engineering and Information Technology and Levin Mardira by for taking out the ICPADM-Mat Darveniza IEEE Student Prize for the Best Final Year Thesis in Power Engineering for his work 'Investigating Impacts of Energy Storage Systems on Electricity Demand Profile'. Both works were outstanding and showed the dedication and hard work put in by both Sean and Levin over the year. Well done!

Finally I would like to thank all the Student Branch Councilors for all their efforts in assisting their respective Student Branches. Many of the Student Branches wouldn't be here if not for the great work their Councilors perform behind the scenes. I was out of the state for most of the year and I am very thankful for all the assistance the Student Branch Councilors gave in running the student branches throughout the year.

Thanks and here's to a great 2013 and a better 2014 for the Student Branches of IEEE QLD.

B.4.2 IEEE UNIVERSITY OF QUEENSLAND STUDENT BRANCH

In office:

Chair: Lavish Lalwani

Vice Chair: Ebrahim Khalil

Secretary: Mio Nakatsuji-Mather (until June)

Counsellor: Vaughan Clarkson

Power & Energy Chapter Chair: Mehdi Mosadeghy (from August)

Power & Energy Chapter Counsellor: Tapan Saha

The UQ Student Branch has continued to be active and successful in 2013. The Branch benefitted by retaining most of the leadership team from 2012.

Major Activities for 2013

The following activities were organised this year:

- Two recruitment drives/pizza lunches were held, one each semester, on 15th March and 12th August.
- A promotional booth was set up to promote IEEE to first-year engineering students at UQ's First Year Engineering Learning Centre on 16th April.
- In conjunction with the Australian Computer Society, a workshop on interview skills was held on 30th April.

Other Activities for 2013

The UQ Student Branch participated in joint activities with the Queensland Section's MTT/AP Chapter in Semester 1 and, through the Branch's Power & Energy Chapter, with PES also. Please refer to the MTT/AP & PES annual reports for details.

The Student Branch officers were also enthusiastic volunteers for the UQ School of ITEE, particularly in helping to stage the annual Discipline Lunch on 27th August. This is an annual event at which 1st-year engineering students are informed about the engineering study plans ('disciplines') available at ITEE.

Furthermore, the Chair, Lavish Lalwani, represented Queensland Section and UQ at the Region 10 Student Congress, held 11th–14th July, Hyderabad, India.

Announcements

Nominations for 2014 offices were solicited in August. The officers for 2014 will be Jack McKinnon (Chair), Andrew Lai (Vice Chair), Seb Forsyth (Treasurer), Laura Brenn (Secretary) and Mehdi Mosadeghy (Power & Energy Chapter Chair).

In closing, I'd like to thank the Chair, Lavish Lalwani, for his committed service as Chair this year.

—Vaughan Clarkson

Student Branch Counsellor, IEEE UQ Student Branch, Queensland

B.4.3 QUT STUDENT BRANCH

In office:

Chair: Mohammed Albannay

Student Branch Counsellor: Jacob Coetzee

Queensland University of Technology's IEEE student branch has played an integral role in introducing student to the IEEE through multiple technical and informative seminars throughout the year. Recent times have seen a decrease in the student branch's activities due to large number of graduating office bearers.

Two seminars were held by the branch in the calendar year of 2013. The first was given by Prof. Beat Stettler (University of Applied Sciences Rapperswil, Switzerland) titled "Multipath connectivity over heterogeneous wireless networks for public transportation vehicles". The talk was very well received attracting an audience of 38 people, most of whom were not IEEE members. The second was given by QUT's Prof. Margot Brerton titled "Human centered design in electrical engineering". The talk was highly appreciated attracting an audience of 18 people, with the majority not being IEEE member.

The student branch is currently healthy with a fully elected office for 2014. The branch seeks to join new members to the IEEE as well as prepare younger members of the branch to one day succeed graduating members. The event calendar is still to be finalised, however the branch is aiming to hold 3 events in the year of 2014. Also the branch aims to have an early presence this academic year by being represented in QUT's biannual orientation week.

B.4.4 IEEE CQUNIVERSITY BRISBANE CAMPUS STUDENT BRANCH

In office:

Chair: Mr. Jose Roman Maya Zamudio

Vice-Chair: Mr. Vikash Yadav

Secretary: Mr. Tarique Hussain Bozdar

Committee: Mr. Alexis Ribault, Mr. Chirag Mehta

Student Branch Counsellor: Dr. Mary Tom

Introduction

The CQUniversity Brisbane Campus Student Branch was formed towards the end of 2012. This new initiative on a small campus of around 1000 students in science and commerce disciplines together obtained enough momentum to get enthusiastic students to take the roles of office bearers. The Branch operated successfully with the new office bearers selected and provided a novel experience to students by organizing technical and professional events. It also provided leadership opportunities for interested students.

Activities for 2013

The following activities were organized this year:

- The official student branch launch was held prior to the Technical Seminar titled ‘Computational Intelligence: An Overview: Introduction, Applications, and Current Research Challenges’ by Prof. Vladimir Estivill-Castro Griffith University. This event was very successful with good attendance and attracted few new members.
- The Careers Evening organized in the middle of the first semester attracted students from neighbouring universities such as Griffith University and Queensland University of Technology.
- As a promotion event a pizza lunch was organized and a good number of students participated and few of them took membership.
- The technical seminar on Nanotechnology was a joint event with Women In Engineering QLD.

Announcements

- A large number of existing IEEE student members will be graduating this year including most of the current office bearers. The new office bearers for 2013 will be nominated soon.
- I take this opportunity to thank the chair Jose Roman Maya Zamudio, and other committee members of Vikash Yadav, Chirag Mehta, and Tarique Hussain Bozdar for their sincere contributions.

B.4.5 IEEE GRIFFITH UNIVERSITY STUDENT BRANCH

In office:

Student Branch Counsellor: Sascha Stegen

Introduction:

The Griffith University Student Branch has been reactivated in 2013.

Activities in 2013:

Major Activities for 2013 involved the organization of a Pizza recruitment lunch on the 18th October on the Griffith University Nathan Campus, where 12 students signed up as new members.

Throughout the semester several talks about IEEE were held and IEEE was advertised in showcases and students recruited.

Morteza Shahpari, MTT/AP Chapter (Secretary), who is located at the Griffith University Nathan Campus helped with the carrying out the student functions.

B.5 Affinity Group Activities

B.5.1 WOMEN IN ENGINEERING (WIE)

Office Bearers:

Chair: Dr. Mary Tom

Vice-chair: Ms. Sandra Mau

Secretary: Mrs. Mahnaz Shafiei

The Women in Engineering Affinity Group has completed its fourth year of operation in Queensland overcoming the challenge of low membership and low participation rate. Being aware of the current trend of low participation of women in science and technology in Queensland, the primary goal of Women in Engineering Affinity group is to exhibit excellent contributors who can be role models.

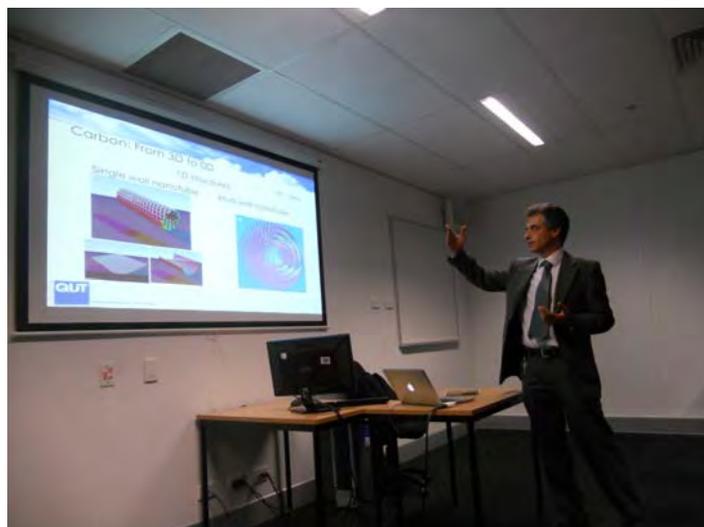
In 2013 WIE QLD Organised three events two of which are technical events and one professional event as detailed below.

Seminar on Stress Management

This event was cosponsored by Australian Computer Society.

The event was attended by over 40 participants including many professional men. Stress can be a debilitating element affecting professionals in various ways. The five easy steps of stress management presented by Ms. Lapis were found very simple, practical and easy to follow. Ms. Lapis is an influential speaker and the presentation was very interactive and engaging with some activities and small group discussions.

The presentation lasted an hour following some interesting questions from the audience. The answers to these questions and contributions from the audience emphasized the need for early detection and prevention of stress related issues to avoid loss of precious productive time from professional engagement. The participants included members of Australian Computer Society and IEEE and the provision of light refreshments facilitated interaction among attendees and good networking.



Technical Seminar on Robotics

The seminar titled 'Autonomous Robots: Fact or Fiction' presented by Dr.Hanna Kurniawati from the Robotics Design Lab: University of Queensland was organised with light refreshments before the presentation providing networking opportunity to participants.

Dr. Kurniawati provided an interesting and educative presentation on the current state of autonomous robots, challenges ahead and the need for more passionate men and women to contribute to the field. The speech revealed the gap to fulfil our dreams of having robots that can do the many boring and tedious work for us.

Dr.Kurniawati, then pointed out a number of challenges and difficulties yet to be resolved including context specific task identification, effective motion generation, sensing of location, and interaction with environment. The rest of the presentation focused on the issues of motion generation and the complexities involved with the requirement for many degrees of freedom and the uncertainty involved. The speaker presented some her contributions to tackle issues in autonomous robotic motion.



Being an event organized by Women In engineering with the goal of attracting more women into the robotics field, Dr.Kurniawati took keen interest to highlight some of the critical contributions made by women, for example the method called 'Probabilistic Roadmap' by Lydia Kavrak.

Having a small group of participants led to a serious and engaging discussion on the problems or trends that keep women away from science and technology fields and how such trends can be changed.

Technical Seminar on Nanotechnology

The seminar titled Nanotechnology: New Tools for Energy and Environment presented by A/Prof Nunzio Motta Principal Research Fellow, Queensland University of Technology organised as a jointly sponsored event by WIE QLD and IEEE Student Branch CQUniversity Brisbane Campus. There was networking opportunity for attendees facilitated with light refreshments. Nanotechnology is a growing area of human endeavour, providing new tools for design, fabrication, and characterization of functional objects on the scale of the nanometer. New, cheap dye-sensitized and polymer solar cells hold the promise of environmentally friendly and simple production methods, along with mechanical flexibility and low weight, matching the conditions for a widespread deployment of this technology.



Having an international recognition in the field of material science, A/Prof Nunzio is currently leading research at QUT in solar energy and environmental nanotechnology, developing new polymer solar cells and solar powered nanosensors, using carbon materials like nanotubes, graphene and graphene oxide. The presentation explored the current state of developments in the materials development and the potential contributions in the near future which can lead to whole new way of energy production and storage.

Answering questions from the audience, Nunzio explained the viability issues in large scale manufacturing, and the required lead time between laboratory development and full scale industry production. The other interesting discussion was on the changes and use in home electricity production and potential changes in electronic devices in terms power storage resulting from the development of super capacitors.

B.5.2 GRADUATES OF THE LAST DECADE (GOLD) AFFINITY GROUP

Office Bearers:

Chair: Alexandra Price

Vice-Chair: Prachi Redey

Secretary: Matthew Zillmann

Introduction

The Graduates of the Last Decade (GOLD) affinity group was rejuvenated in 2013 following a few years with a relatively low profile. The leadership team, which was only filled in late May, has brought fresh ideas and a strong drive to deliver quality technical and non-technical events for IEEE Queensland GOLD members.

Major Activities for 2013

The following activities were organised this year:

- Barefoot Bowls on 2nd June
- Social Networking Drinks held on 18th July
- “What is Leadership?” seminar held on 10th October
- Technical seminar on “Integrating Alternative Energy- Lessons from Germany” co-sponsored by the IEEE Queensland Power and Energy Society Chapter on 11th November

Other activities for 2013

The Queensland GOLD affinity group was also involved in the judging of Information Communication and Technology (ICT) Young Explorers program held at the University of Queensland in August this year.

Announcements

IEEE Queensland GOLD vice chair Prachi Redey represented the Queensland GOLD affinity group at the IEEE Region 10 (Asia-Pacific Region) Student, Graduates of the Last Decade and Women in Engineering Congress in Hyderabad, India in July. Prachi's attendance at this conference was co-funded by IEEE Queensland Section and IEEE Region 10 GOLD.

IEEE Queensland GOLD has already begun planning future events and looks forward to an even more productive 2014!

B.6 Awards & Recognition Activities

B.6.1 AWARDS & RECOGNITION REPORT

In office: Mike Robinson

For 2013 the committee has retained the award structure that was used for previous years. This encompasses three award 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 the **Volunteer of the Year** award. 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 for final selection of volunteer of the year.

Awards

Recognition of Service

A total of 11 Recognition of Service awards were awarded within the IEEE Queensland Section for 2012.

Recipient	Role
Abbas Bigdeli	Section Chair
Sandra Mau	Section Vice-chair
Mike Robinson	Section Treasurer
Sandra Mau	Women in Engineering Chapter Chair
John Davies	Aerospace and Electronic Systems Chapter Chair
Garry Einicke	Aerospace and Electronic Systems Chapter

	Vice-chair
Konstanty Bialkowski	MTT/AP Chapter Vice-chair
Tapan Saha	Power & Energy Chapter Vice-chair
Alexandra Price	Power & Energy Chapter Secretary
Hasan Kazi	Power and Energy Chapter Student representative
Robert Ellen	GOLD Affinity Group Chair

Outstanding Contribution

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

Recipient	Role
Konstanty Bialkowski	MTT/AP Chapter Vice-chair
Sandra Mau	Section Vice-chair
Mike Robinson	Section Treasurer

Volunteer of the Year

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

Thesis prize awards

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

1. The IEEE Queensland Section Student Prize for the Best Final Year Thesis in All Fields of Electrical Engineering and Information Technology was awarded to **Sean Purdon** from the University of Queensland for his thesis entitled 'Collaborative Control of Mobile Nodes Using Wireless Sensor Networks'.
2. The ICPADM-Mat Darveniza IEEE Student Prize for the Best Final Year Thesis in Power Engineering was awarded to **Levin Mardira** from The University of Queensland for his thesis entitled 'Investigating Impacts of Energy Storage Systems on Electricity Demand Profile'.

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. Nadali Mahmoudi from the University of Queensland for presenting the paper entitled 'Developing a Scenario-Based Demand Response for Short-Term Decisions of Electricity Retailers' during IEEE PES General Meeting 2013, in Vancouver, Canada.
2. Houman Pezeshki from Queensland University of Technology for presenting the paper entitled 'Impact of High PV Penetration on Distribution Transformer Life Time' during IEEE PES General Meeting 2013, in Vancouver, Canada.

B.7 Communication Activities

B.7.1 REPORT FROM NEWSLETTER EDITOR

In office: Robert Ellen

2013 marked the 16th volume of the IEEE Queensland Newsletter. Four issues were published, in March, July, September and November. Many chapter, affinity group and student branch made contribution for each issue. My recommendation to the 2014 committee is to make it clearer to office bearers that there is an expectation to contribute to the public image of the Section by providing news items. I would also recommend to the 2014 committee that it consider seeking contributions from committee offices not listed on this report to increase the value of the newsletter and the amount of information that it contains that may be useful or interesting to members. Newsletters can be seen from <http://www.ewh.ieee.org/r10/queensland/v2/doku.php/newsletters:archive>

B.7.2 REPORT FROM THE WEBMASTER

In office: Nilesh Modi

In 2013, IEEE Queensland website has been regularly updated to provide latest information to the section members. Along with updating office bearers' page, regular follow-up has been carried out to keep the page up to date with contact information. Student branch counsellors have been advised to encourage student members to create website for their student branch and providing a link to the Section. A separate web space has been provided to encourage TISP (Teachers In Service Program) activity.

In closing, I would like to thank all committee members for their help and useful suggestions to improve section website. Queensland Section website is available through <http://www.ewh.ieee.org/r10/queensland/v2/doku.php>

PARTS C & D

C.1 Relationship with National Societies

IEEE Queensland Section has been doing very well with its sister organizations including Engineers Australia and IET. The Section Chair Prof Tapan Saha attended most of Engineers Australia's Queensland Electrical Branch meetings as the immediate Past Chair of Electrical Branch and IEEE liaison. Robert Allen (newsletter editor of IEEE QLD Section) is an executive committee member of the IET Queensland Chapter. He attended both IET and IEEE meetings and worked closely with IET and IEEE.

C.2 Special Events

IEEE Queensland Section Members participated in 2013 annual Fraternity Dinner organised by Engineers Australia's Queensland Electrical Branch. IEEE Chair delivered a short presentation during the dinner. IEEE PES Chapter organised a number of seminars and workshops at the Engineers Australia premises in Brisbane city. This brings IEEE activities to non-members of IEEE, who are members of Engineers Australia.

C.3 Problems to be anticipated

NONE

C.4 Best Practices of your section (which you would like to share with other sections for the benefits of members)

IEEE Queensland Section works very closely with the local professional body (Engineers Australia) and as well with local industries. Specific example is PES chapter's engagement with the local power industry. A number of PES events were organized at two Queensland electricity distribution company premises. Catering was done by those organizations and there were high level of technical engagements from the electricity industry in the IEEE PES Chapter activity. MTT/AP has also performed outstandingly in providing their service to the members through local industry engagement. Dedications from the volunteers of these two chapters are noteworthy. Our GOLD affinity group has also been doing outstandingly and they are actively engaged with the local industry.

PART D - GOALS AND PLANS

D.1 Continuation of Project/Activity in Progress and Their Implementation Plans

A number of chapters and affinity groups have exceeded our highest level of expectations by their activities. A number of chapters did not perform well as per our expectation. We will work closely with the new committees of those chapters and make sure they perform well. We will also maintain our collaboration with the local professional bodies and industry to promote IEEE.

D.2 Goals and Future Plans

At this stage we will start 2014 activities with 2013 goals and plans as below. Then we will update the goals with our new committee and set timeline for each target.

- Organize six events by each chapter and affinity group
- More engagement with the local professional body
- Active engagement with local industry
- Establish student chapters and maintain active engagement with the student communities in six university campuses in Queensland Section
- At least one DL program by each chapter
- Active in conference/workshops and short course for continuing professional development and build fund for the Section/chapter
- Engage actively with the Australia Council
- Promote IEEE Membership among industry colleagues, who are non-IEEE members

Professor Tapan Saha
Chair- IEEE Queensland Section
Email: tkसाह@ieee.org
