CIRCUIT

The Institute of Electrical and Electronics Engineers, Inc.

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Contents

Editorial

In December 2007 and January 2008, there were a lot of natural disasters happening around us: flash floods, hail storms, earthquakes, unusually cold summer weather and so on. The world is going through changes year after year due to depletion of natural resources because of over development and endless exploitation by mankind trying to improve our standard of living.

Australia is trying to do her part in pursuing environmentally friendly initiatives. This is a step in the right direction. We all need to do our bit in an effort to save the environment. Little things like not contributing to landfill will go a long way in preserving our mother earth.

Eddie Fong eddiefong@ieee.org
Circuit Newsletter Editor
NSW Section

1. Messages from the Chair

Dear NSW members

Greetings in 2008. We have kicked off this year in a very energetic fashion, with a new student branch councillor from UWS on our committee, a new Graduates (GOLD) Chair, and representation from UNSW at our Section level too. To those students at UWS and UNSW - watch for increased activity from the IEEE. To students and members of other Universities, here is nice tickler to get re-energized and enjoy some benefits and sponsorship from IEEE for local events - both social and technical.

Each year IEEE Region 10 (Asia Pacific) brings together representatives from all Sections in our region for a conferral of ideas and actions. This year it was held for the first time in Ahmedabad in India, which brought home the diversity of people involved with IEEE nearby. One of the key messages I brought back was that we in New South Wales are doing unique things with regard to sponsored student memberships. It also highlighted what others were doing, e.g. An Indian section is promoting engineering and technology to women and young people at risk. This serves both humanitarian objectives as well as providing people with very limited outlook a window into a possible career. Again, very unique in the IEEE field of local initiatives.

There are 4 basic objectives we will try and deliver locally this year:
1. Secure some additional conferences here is Sydney and NSW;
2. Finalise the schools promotional CD project and have this distributed later in the year
3. Conduct a student paper competition for NSW, with the winning paper elevated to the R10 student paper competition in Jan'09.
4. Secure a webmaster. The committee has agreed to a small compensation package here which would defray costs to anyone who would like to do this. Ideally someone with an hour or so per month, skills and a broadband connection.

On behalf of our committee, lets make 2008 a great year for everyone.

David Burger k3hz@ieee.org
Chair
NSW Section

2. News in Brief

2.1. IEEE Foundation Announces 2008 Application Deadlines

The IEEE Foundation, Incorporated, the philanthropic arm of the IEEE, is committed to improving the technological literacy of society from childhood through adulthood. One way the IEEE Foundation seeks to achieve this goal is by awarding grants to new and innovative projects. During 2008, unsolicited applications will be accepted in three cycles from IEEE units and other organizations working in areas of relevance and importance to the IEEE and its membership. Projects should achieve one or more of the following objectives:

- Improve primary and secondary science, technology, and math learning
- Encourage pre-university students to consider engineering as a career path
- Increase the public's understanding of the role of engineers and
- technology in soci
- Preserve the history of IEEE associated technologies
- Tap the technological expertise of IEEE members
- Demonstrate ability to be replicated

Application deadlines:

Deadline	IEEE Foundation Meeting Date
4 Jan 2008	Mar 2008
18 Apr 2008	Jun 2008
5 Sep 2008	Nov 2008

Before submitting the online application, please review "How to Apply for a Grant" (http://www.ieee.org/organizations/foundation/grants.html). All applications will be considered for funding by both the IEEE Foundation Board of Directors and the IEEE Life Members Committee. Questions should be directed to the IEEE Foundation Administrator at +1 732 981 3435 or foundation-office@ieee.org.

2.2. 2008 NSW Section Committee

1. Chair - David Burger
2. Vice Chair - David Tien
3. Secretary - Antony Zaglas
4. Treasurer - Nuala Ward
5. Circuit Newsletter Editor - Eddie Fong
6. Fellow Search – Walter Lachs
7. Membership development – Bruce Poon
8. Professional Activities – David Burger (David Tien to assist with Engineering Week)
9. Educational activities – Kim Chin
10. Student activities – Ali Hellany
11. Awards and Recognition - Ramutis Zakarevicius
12. Nominations – Bruce Poon
13. Historian – David Burger
14. Webmaster – Vacant (Rob Menegon minor changes only)
15. Conference Coordinator (new position) – David Tien
16. GOLD affinity – Alejandro Monroy
17. Life Member Activities – John Robinson
18. Women In Engineering – Kim chin
19. Additional Committee member - Candice Gilmore

2.3. Chapter Chairs

Chapter	Chair
AP/MTT	Ananda Sanagavarapu
COMMS &SP	Iain Collings
Computer	Kate Carruthers
EDUCATION	Mark Lee
EMBS	Jeff Armistead
IAS/PEL/IE	Danny Soetanto
LEOS/CS/SSC	Graham Town
PES	John Robinson

2.4. IEEE NSW Section Treasurer

Nuala Ward Nuala.ward@ieee.org has recently taken on the role of IEEE NSW treasurer. This is something that she has thought about doing for a long time and this will be interesting to her to be involved in the IEEE NSW committee.

Her first task will be to sort out the 2007 account and lodges the paperwork to IEEE headquarters. Then, for the year ahead, she will ensure there are sufficient fund

for the various activities of IEEE NSW Section has planned for the year.

She works for Alcatel-Lucent as the manager of business development for the network integration division. Her team is responsible for business development and consulting activities across carriers and vertical markets, e.g. utilities, rail, and transport. She has been with Alcatel-Lucent for over 11 years, in a number of roles in engineering, product management, solution management, and was able to spend two and a half years working in Wellington, New Zealand on a number of projects with Telecom New Zealand, with whom Alcatel-Lucent has a large partnership agreement for the transformation of Telecom's network.

Outside of work, she will have a year of house renovations and is trying to get outdoors for some bushwalking.

2.5. James Jim Vasseleu (1930 to 2007)

We have lost a good friend, fellow colleague, James Jim Vasseleu, who was the founding champion for the initial IEEE Australian Section back in August 1972, with mentoring from the New Zealand Section as well as the Italian Section. Jim was the Australia Section Chair 1972 to 1973, NSW Section Chair 1985 to 1987, the R10 Director 1977 to 1978, the Board Member IEEE Long Range Planning Committee 1977 to 1978, the Founder IEEE Australia Council 1986, and the R10 Membership Development Chair 1989 to 1991,

Jim was awarded the IEEE Centennial Medal in 1984, the IEEE Larry K Wilson Transnational Award in 1994, and the IEEE Millennium Medal recipient in 2000.

Jim had achieved the Electrical Engineering apprenticeship – Australian General Electric, Design engineer - Johnson & Philips / Crompton Parkinson, Australasian sales manager – Federal Pacific Electric

(Aust), EE Director – Fowell Mansfield Jarvis & Maclurcan, Marketing manager - Power Electronics Pty Ltd, Senior Electrical Engineer Leighton Irwin and then self employed consulting engineer.

Jim had received an Electrical Engineering Diploma, Higher Trades Certificate (Electrical), Electricians license and Management Certificate. He was accredited as a NSW Government Electrical Engineer in 1957. Jim maintained membership of Professional Associations and was a MIEEE in 1969, Senior Member IEEE in 1975, Life SMIEEE in 2000, Fellow IEAust, Fellow IREE, CPEng, Associate Fellow Australian Institute of Management. NPER until 2004. He was a Member Society of Engineers London (now called IET).

2.6. IEEE **2008 Life Members Committee**

At 14 and 18 November 2007, the IEEE Board of Directors has confirmed and appointed Graeme B. Gwilliam as a member of the 2008 IEEE Life Members Committee.

Congratulations to you, Graeme.

2.7. Volunteers Required to Sign Principles of Business Conduct Compliance Certificate

In November 2007, the IEEE Board of Directors adopted the IEEE Principles of Business Conduct (PoBC), which requires that a compliance certificate be submitted each year by all volunteers and staff with decision-making authority. A signed form is also required from non-members and others who do business with, or on behalf of, IEEE.

Details about the PoBC and the certification form are provided at http://www.ieee.org/go/pobc. Everyone who is required to complete the IEEE Conflict of Interest Disclosure (COI) Statement form must also complete the PoBC form, annually.

The PoBC certification form and COI statement have been included in the annual Geographic Unit Financial report so all Geographic Unit Chairs and Treasurers are required to complete these items when they submit the annual financial report for their unit. The annual financial report for geographic units must be submitted by 31 March 2008.

The establishment of IEEE's Principles of Business Conduct is consistent with both non-profit and for-profit

best governance practices. With submission of the certificate, individuals confirm that they have read these Principles and will adhere to the standards described therein. Non-compliance with this reporting requirement could subject individuals to disciplinary action that could result in removal from their volunteer position or termination from their staff position.

For more information contact the IEEE Corporate Integrity Officer at corp-integrity@ieee.org

2.8. IEEE Section Congress 2008

As a reminder, IEEE Sections Congress 2008 will be held 19 – 22 September at the Quebec City Convention Center in Quebec City, Canada. The theme of the event is "Celebrating Volunteer Achievements Worldwide." The three program tracks are: Membership; Section Management; and Section/Chapter Activities. The registration web site for SC08 will be available by 1 March 2008. All Section Chairs will be receiving notification when the registration web site is available.

If you are planning on attending, please ensure that you have the appropriate travel documents. Contact sc-coordinator@ieee.org or visit http://www.ieee.org/sc2008 for more information.

2.9. IEEE TV Launches New Series Addressing Environmental Concerns

IEEE.tv has produced an "Energy Innovations" series of programs that explore how solar, renewable and coal energy are being implemented to meet growing energy needs. All three videos in the Energy Innovations series will be available free to the viewing public. The first program, "The Hydrogen House," profiles Mike Stritzki, an engineer who designed and built a house run entirely by solar energy. "The Hydrogen House" can currently be viewed at http://www.ieee.org/ieeetv.

The other programs, "Solar Goes Small" and "Schwartze Pump: Re-imagining Coal Power" will be added at a later date.

Full descriptions of the upcoming programs appear below:

"Solar Goes Small" – profiles an American group building a solar panel manufacturing plant in Cardiff, Wales. This plant will be the first facility that makes renewable energy products using only renewable energy. In addition to generating power from "traditional" solar sources, the panels made in the Cardiff facility will also generate power from indoor lighting and moonlight.

"Schwartze Pumpe: Re-imagining Coal Power" – outlines the anticipated coal depletion and the steps being taken to maximize the current reserves. Located near the Polish/Czech border in former East Germany, the Schwartze Pump is a massive power plant with boilers over 160 meters high. A new plant is under construction which will generate efficient, nearly clean power from coal, the first power plant to attempt such a feat.

3. Technical Meetings & Conferences

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

All members should check the latest updates of the Meetings & Conferences a couple of days prior to the actual date at the IEEE NSW News bulletins at http://www.ewh.ieee.org/r10/nsw/subpages/news/news.htm and also the Engineers Australia at http://sydney.ieaust.org.au/weekevents.html to prevent any potential disappointment due to last minute changes.

2008	Event	Speaker	Host	Contact	Venue [ensure you re-confirm beforehand]
3/3/2008	IEEE NSW SECTION - Meeting		IEEE	Secretary	(7:00~9:00pm) Seminar Room - Library Gore Hill TAFE
13/3/2008	Building your own Smart Transport (Self balancing scooter - aka Segway)	Malcolm Faed	Joint Program (IEEE)	David Burger	6:00pm 8 Thomas St, Chatswood
26/03/2008 - 27/03/2008	Australian Broadcasting Summit		A&CE	ph +61 2 8908 8555	Bayside 204, Sydney Convention & Exhibition Centre, Darling Harbour
27/3/2008	Engineering Leadership + 125th Anniversary of the Faculty of Engineering.	John Grill, Frank Sartor, George Maltabarow, Peter North	Joint (IEEE - ED)	rsvp@usyd.edu.au	5:00pm to 7:30pm - MacLaurin Hall, Quadrangle, University of Sydney. RSVP by 21 March.. $40. ph 90369278
27/3/2008	High Voltage Lab - Practical Demonstration	Paul Pokorny	Joint (IET)	John Englefield	National Measurement Institute, Bradfield Road, Lindfield, NSW 2070
29/3/2008	World Wildlife Fund's (WWF) Earth Hour, Sydney				Sydney.
2/04/2008 - 3/04/2008	Wireless World 2008 Conference		A&CE	http://www.wirelessworld2008.com/	Exhibition Hall 5, Sydney Convention and Exhibition Centre, Darling Harbour.
7/4/2008	IEEE NSW SECTION - Meeting		IEEE	Secretary	(7:00~9:00pm) Seminar Room - Library Gore Hill TAFE
10/4/2008	Bio Hazard Controls for Engineers (Organic semiconductors, Implants & Statutory Rules)	Ryszard Knopf, Scientific Interiors	Joint Program (IEEE)	David Burger	6:00pm 8 Thomas St, Chatswood
5/5/2008	IEEE NSW SECTION - Meeting		IEEE	Secretary	(7:00~9:00pm) Seminar Room - Library Gore Hill TAFE
8/5/2008	EXPERT WITNESS - How to give credible engineering evidence in Court.	Dr Phil Watts, Forensics, philpsyc@iinet.net.au	Joint Program (IEEE)	David Burger	6:00pm 8 Thomas St, Chatswood
21/05/2008 - 23/05/2008	CRCSI 2008 - Spatial Systems	http://www.crca.asn.au/conference/	?	David Tien	Australian Technology Park, Redfern
22/5/2008	Westfield & Engineering		Joint Program (EA)	Alan Sangster	6:00pm 8 Thomas St, Chatswood
2/6/2008	IEEE NSW SECTION - Meeting		IEEE	Secretary	(7:00~9:00pm) Seminar Room - Library Gore Hill TAFE
12/6/2008	Presentation by "Macquarie Generation"	by CEO, Mr Grant Every-Burns	Joint Program	George Fox / Mark Edmunds	6:00pm 8 Thomas St, Chatswood
14/06/2008 - 15/06/2008	ASHET: Two day symposium on the history of meteorology in Australia.		EA Heritage Committee	sec@ashet.org.au	TBA
26/6/2008	Alternative Energy Update / Engineering for Kyoto.		Joint Program	John Englefield	6:00pm 8 Thomas St, Chatswood
23/ 06/2008 - 26.06/2008	ICITA 2008		IEEE NSW Cosponsor	David Tien	Cairns
7/7/2008	IEEE NSW SECTION - Meeting		IEEE	Secretary	(7:00~9:00pm) Seminar Room - Library Gore Hill TAFE
7/07/2008 - 12/07/2008	Australian Conference on Optical fibre technology & the 21st Opto-electronics & Communications conference	http://www.iceaustralia.com/oecc_acoft2008/	Ice Australia	02 9368 1200 / oecc_acoft2008@iceaustralia.com	The ICO-21 2008 Congress and OECC/ACOFT 2008 Conference will be co - located at the Sydney Convention and Exhibition Centre, Darling Harbour.
10/7/2008	Harmonics in Power Systems	Rockwell	Joint Program (IET)	Upali	6:00pm 8 Thomas St, Chatswood
14/07/2008 - 16/07/2008	AUSCERT 2008. ACISP2008 Computer and Crypto Conference	www.upw.edu.au/conferences/acisp%202008/index.html	UOW		University of Wollongong
24/7/2008	Chatswood/Epping Railway line		Joint Program	Ian Kennedy / Mark Edmunds	6:00pm 8 Thomas St, Chatswood
27/7/2008	17th International conference on photochemical conversion and storage of solar energy	www.ips17.com	ips	see web	see website
28/07/2008 - 1/08/2008	International conference on Electronic materials		see website	Helen Woodall helen@materialsaustralia.com.au	see website

Building an Open Source Self Balancing Scooter

Malcolm Faed,
Knowledge Management Program Officer
Global Service Excellence Team (GSET)
Roche Products Pty Limited

DATE/TIME: **Thursday, 13 March 2008**; 5:30 *for 6:00pm.Start*
VENUE: Engineers Australia Auditorium,
                Ground Floor, 8 Thomas Street, Chatswood.

In recent times, advanced electronic systems have become cheaper and cheaper and at the same time become more complex. The price of the components are now within reach of the hobbyist (e.g. Gyro and Accelerometer). This allows more complex systems to be built at relatively low cost. And most important these advanced technologies can be used by individuals and hobbyist where they were previously only available to more wealthy individuals and corporations.

This is also an excellent example of Peer to Peer Development that brings together people from different continents and backgrounds to develop a common product.

This is a project I had contemplated for quite a few years since first seeing the Segway on the Internet. I saw and had a ride on Geoffrey Bennett's home made scooter at the Linux Conference in 2007 in Sydney. he also offered the source code on his web site which was going to be the hardest part for me.

This project marries several of my passions, Electronics, Mechanics, Control Systems and Software.

More detailed information is available here -> http://members.optusnet.com.au/a4x4kiwi/scooter/

Obligatory warning. Build this project at your own risk. If you injure yourself or any one else its not my fault.

Malcolm Faed has 10+ years of experience in Information Technology in both hardware and software. He has extensive experience in Windows, Networking and in Linux. Malcolm takes a very pragmatic approach to projects, and is currently looking at even larger vehicle projects.

Malcolm's tertiary qualification is a New Zealand Certificate in Engineering - Electronics and Computer Technology. He is a Member of the IEEE and the Manly Warringah Radio Society.

NOTE: Attendance may be credited towards Engineers Australia's Continuing Professional Development (CPD) points. Engineers Australia members are required to undertake a minimum of 150 hours CPD every three (3) years & are responsible for recording CPD for audit.

For further information please contact David Burger –
k3hz@ieee.org or Phone 0414 328877

4. Continue to Receive Circuit by Post

Circuit is currently provided electronically from the IEEE NSW Section Website http://ewh.ieee.org/r10/nsw. Members will be notified by email when a new issue is posted on the Website. A printed copy of *Circuit* will only be sent on request by members and for those without an email address.

If you require a printed copy of *Circuit* mailed to you, please complete the form below:

Note: If you have previously returned this form, there is no need to send it again.

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