IEEE

CIRCUIT

The Institute of Electrical and Electronics Engineers, Inc.

Contents

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Circuit Newsletter Editor
NSW Section

Editorial

It is amazing how the world has changed in the last few years.

In wireless telecommunications, we have the good old GSM and then the 3GSM. In television broadcasting, we have good old FM analogue transmission and then, the digital transmission. In the automobile industry, we have the good old fossil fuel combustion engine car and then the gas fuel or electric engine cars, and so on that we have developed and made a lot of innovative and creative technologies and products with the hope of having a better lifestyle.

With all these engineering developments to the world, the environment has also evolved with these changes. Floods have severely hit many parts of the world - places like Malaysia, Indonesia, USA etc. Snow or hail storm happens on a summer day.   Earth quakes and tsunamis happen more frequently than before. All these natural disasters are the challenges for you and I as the professional engineers in developing tools and means to analyse and predict these disasters in providing early warnings to those that will be affected by the disaster to stay alive and survive.

We need ideas and creativity in the hope that all these can be put to good use to save lives and improve living conditions for our next generation. So, I encourage all of you to send in your ideas and creative solutions to share with other professionals in the hope for a better world.

1. Messages From The Chair

2007 marks 35 years of active IEEE involvement in Australia - as well as marking the 120th anniversary of IEEE itself!

Greetings to all of you and a big thank you to the out-going committee too. This year it is planned to get the NSW Section into overdrive and tackle some of the tougher jobs that have been lingering in our in-tray for the past few years. These include championing a new affinity group titled "Women in Engineering" (WIE). While still very early days, we welcome Dr Kim Chin who has offered to assist in the startup of this group. Another project with a focus on promoting "Engineering & Technology to Schools" will also be championed with both web and CD media. This year, we are also sponsoring 6 lectures in the joint institutions lecture calendar - with some very interesting material already scheduled.

Promoting chapter activities and mentoring the many student chapters back into life (e.g. USYD, CSU etc). If you can assist in any way, the Section Committee will get behind you, as that is why we are here.

If that isn't enough, there is a need to engage a Webmaster to corral the material and changes as they take place throughout the year. The only formal prerequisite is to be a member of the IEEE - and maybe of course some web skills you would like to exhibit.   I'd like to extend the sincerest thanks to Mr Rob Menegon who is planning to move overseas early

May 2007. Rob has kindly maintained our website over the past two and half years, including sometimes updates from sporting events overseas. Our website also needs an overhaul to conform to the new IEEE look and feel.

Each year a student congress is held in Region 10, and while we may have missed bidding for the 2008 event, we will certainly be able to target and lobby for the 2009 event once we get our GOLD and WIE Affinity groups running. We also welcome Mark Gordon to our GOLD committee, and the whole section committee will be getting behind this to secure some social/speaking functions into our calendar of events. With three members of Committee qualifying for the GOLD program, this marks a first for NSW, and we look forward to more engaging activities for recent graduate members.

Bringing some fun and interesting activities to the fore is also a key objective this year, and while they will need committee review, some ideas include a "IEEE NSW Industry Leadership Award", "A Mind storms Robotics' Competition", and some other ideas you feel like championing.

We welcome your participation, attendance and your contributions to this year events.

David Burger   k3hz@ieee.org
Chair
NSW Section

2. News In Brief

2.1. 2007 IEEE NSW Section Executive Committee

Chair	David Burger
Vice Chair	David Tien
Treasurer	Rob Curtis
Secretary	Antony Zaglas
Circuit Editor	Eddie Fong
Fellow Search	Walter Lachs
Membership Development	Bruce Poon
Professional Activities	Graham Gwilliam
Educational Activities	Kim Chin
Student Activities	Mark Gordon
GOLD	Mark Gordon
Awards and Recognition	Jim Vasseleu
Life Member Activities	John Robinson
Nominations	
Chair	Graeme Gwilliam
Committee	Jim Vasseleu
Committee	Bruce Poon
Historian	Ramutis Zakarevicius
Webmaster	Rob Menegon
Committee	Karu Essella

2.2. 2007 IEEE NSW Section Chapter Chairs

AP/MTT	Ananda Sanagavarapu
LEOS/C&S/SSC	Graham Town
Communications & Signal Processing	Sam Reisenfeld
Computer	Vacant - (TBA)
EMBS	Caroline McGregor
PEL/IAS/IE	Danny Soetanto
Power Engineering	Antony Zaglas

2.3. IEEE NSW Section Web Master Wanted

As Rob will be overseas from April 07, we are currently looking for an IEEE member to be the Web Master in taking care of the IEEE NSW Section Web site and its contents. Interested parties please contact David Burger by email k3hz@ieee.org or mobile 0414328877.

2.4. Invitation for IEEE NSW Section Computer Chapter Chair

If you are a member of the Computer Chapter and would like to be the Chapter Chair, the please contact direct to the Nominations Chair, Graeme Gwilliam

2.5. Nominations for Elected Officers in NSW 2008

This is a call for those wishing to nominate for any elected office in the New South Wales Section for 2008. Election is for a 1 year term, (casual vacancies not withstanding) with the possibility of re-election for a further 1 year term. Occupancy of an elected office for longer than a 2 year continuous term requires appropriate approval.

The Section elected offices are Chair, Vice Chair, Secretary and Treasurer. Chapter Chairs are also elected, however Chapters have the freedom to make their own local arrangements provided the RAB requirements are met. One requirement is that, ideally, at least two names be placed on the election paper for each position.

Nominations are to be sent to Graeme Gwilliam (gb.gwilliam@ieee.org) by the end of April 2007. Whilst 'seconded' nominations are preferable, self nominations will be accepted.

Those nominees so wishing can have personal profiles included in the July edition of CIRCUIT. The details of the election processes will be advised later in the year.

Graeme Gwilliam gb.gwilliam@ieee.org.
Chair
Nominations Committee, NSW Section

2.6. Former IEEE President

1974 IEEE President John Guarrera died on 7 December in El Cajon, Calif., at the age of 82. For more information, go to
http://www.ieee.org/web/aboutus/briefs.html#Guarrera

2.7. Former IEEE Executive Director

Dan Senese, who served as executive director of IEEE from 1995 to 2004, passed away on 6 January 2007 after a brief illness. For more information, visit
http://www.ieee.org/web/aboutus/briefs.html#senese

2.8. Student Branch Event

The Institute wants to hear about interesting IEEE student branch events taking place this year. If your branch is holding a robotics competition, teaching youngsters about technology, holding a student congress, planning a plant tour, coordinating a career fair, or other event, send the details to
<mailto:institute@ieee.org>

2.9. IEEE Spectrum Online Rolls Out New Tech Alert

IEEE Spectrum Online has created a new Tech Alert for both members and non-members who want to receive groundbreaking news on technology and science. The alert features exclusive online interviews,
articles, podcasts, and Web events with leading technology innovators and is e-mailed biweekly in an html or plain-text format. Sign up now at
http://www.spectrum.ieee.org/industryfocus

2.10. Recognize Your Achievement

Has your company or a volunteer organization recognized you with a promotion, appointment, or award?

We publish the names of members who've received such recognitions. Send your name and a brief description of your accomplishment to the editor
eddiefong@ieee.org

2.11. MyIEEE Adds New Features

The IEEE's membership portal, myIEEE, has just updated its career development features. From the Profession Desktop, members can now get listings from the IEEE Job Site, which is updated daily. New modules link members to IEEE's Mentoring Connection site and IEEE-USA's Career Navigator site, where they can get career advice.

2.12. Fellow Nominations for 2008

Time Is Running out for 2008 Fellow Nominations. The deadline for nominations for the IEEE Fellow class of 2008 is 1 March 2007. The rank of IEEE Fellow is the institute's highest member grade, bestowed on senior members who have contributed "to the advancement or application of engineering, science, and technology".

2.13. Welcome To Our New Members And Upgrade Members

From Oct 2006 to Jan 2007, we have the following new members or newly upgraded members:

Life Member Grade

1. MICHAEL KASSLER
2. ROGER F EVANS
3. ALBERT F SORRELL

Fellow Member Grade

4. ABBAS JAMALIPOUR
5. DAVID J SKELLERN

Senior Member Grade

1. ANTHONY G PLACE
2. DAVID S TAUBMAN
3. IAN E BOYD
4. STEPHANIE BOYD
5. CAROLYN P MCGREGOR
6. JOHN D BUNTON

Member Grade

1. PRATIK DAS
2. BRADLEY J GAY
3. SANJIB BISWAS
4. LI ZHENG
5. FEI XIN
6. LEI SHANG
7. KIT-MING T CHEE
8. ALBERT Y CHUNG
9. ZHONGWEI TANG
10. JUN ZHANG
11. ADAM G WIGGINS
12. FRANCIS CHAN
13. SEBASTIAN W KHOR
14. DEREK J CORBETT
15. MATTHEW R MCKAY
16. RUKMI D DUTTA
17. STEPHEN HERBORN
18. ELENA M YAP
19. ZHENDONG ZHOU
20. RICHARD SHIH C CHIU
21. JASON J LI
22. JAN M MIKKELSEN
23. GOVIND GANESHWARAN
24. DANIEL C POND
25. COSTANZO M COSTA
26. KAI LU
27. SAIF U ZAMAN
28. ADAM B HUDSON
29. YING P QUE
30. CARLO F SOGONO
31. BYRON K NG
32. PATRICK W CHU
33. MIN CHUNG KIM
34. FARZANA MUSTAFA
35. KUAN LUN HUANG
36. ROHIT DHAWAN
37. SUHRAWARDI ILYAS
38. ADRIAN M MEDIOLI
39. LI MA
40. FERDIE J DJUNAEDI
41. SWARNALATHA RADHAKRISHNAN
42. TEJAS SATHE
43. SONJA MILANOVIC
44. HENNY N ROMPAS
45. MITCHELL M KUO
46. SABRINA ZHANG
47. WILLIAM L LIEM
48. MINPU GUO
49. ASSAD MEHMOOD
50. FU SUN
51. ZHAOHONG SOH
52. RENEE CORY
53. YOUHNA B BORGHOL
54. TAO GUO
55. WEI XIONG WONG
56. SAMRAT NEUPANE
57. GILBERT H FOO
58. AIK C OOI
59. DIMITRIOS MIKOS TESSERIS
60. DAVID W SULLIVAN
61. MUHAMMAD A MALIK
62. XINWEI YOU
63. YU TU
64. SUKKIM CHIN
65. JASON KING TAO NG
66. ANDREW MCGILL-MORTON
67. JOANNE M CURRY
68. CHRISTOPHER J DE VANEY
69. WAI JACKY KEUNG
70. DEHONG YU
71. PETER KWOK KWONG TANG
72. ROBERT MICHAEL
73. CHRIS GALLAGHER
74. YUAN GU
75. NORMAN DONG
76. MARK D FACER
77. GARY F BRENNAN
78. WILLY SUSILO
79. ROMAN FISCHER
80. STEVEN Y GAGAU
81. IROSH FERNANDO
82. ROBERT L GILLAN
83. MAX VECHI
84. KOSTIA A ROBERT
85. PAUL G FUDGE
86. MUHAMMAD ALI BABAR
87. TONY YOUNG
88. THEO DRAKAKIS
89. BRENTON D THOMAS
90. JIE LU
91. SCOTT J DOUGLAS
92. AKEMI T CHATFIELD
93. CHENGJI ZHAO
94. ACHUT K MYNENI
95. LAURIE A CHISHOLM
96. BARRY DAVIES
97. SUNGHEUK JUNG

98. LANCE N DANTOINE
99. IAN H CUTLER
100. ALIREZA MIRHOSSEINI
101. SCOTT A SINCLAIR
102. ANTHONY L HENZELL
103. C J VANCE
104. JOSHUA A GRAHAM
105. GIL C CASTILLO
106. PERTER J BRIEDE
107. KIM RONALD NG
108. NADER SABET
109. MASSIMO BONATO
110. ALLAN FALLEIRO
111. ROBERT D AVERAY
112. GEOFF KIDD

Associate Grade

1. YONG XIA
2. PETER WINTAO TAN
3. LESLIE M KING
4. SCOTT M LOLLBACK
5. LUKE SCHOEN
6. BASTIAN KOEDEL
7. ALASTAIR J WEAKLEY
8. VAHID G TAEED
9. TODD N HEALEY
10. ARIF TANVIR
11. CRAIG A ROY
12. DEAN A COOPER
13. HENDRIK H KRUK
14. NAYANA A GARDIGE HEWAWASAM T.T.
15. JASEN CHONG

Affiliate Grade

1. UI YI WU
2. BALAJI NARANAPATTI
3. PREMASELVI N JAYAGANESH
4. MOHAMMED RAAD
5. ANGELO LOSINNO
6. GERARD A ZWART
7. DARRIEUX E A WILLENBERG
8. ROBERT THEAKER
9. NEETA LAL
10. FRANK CHIANG
11. SHERIDAN-SMITH NIGEL
12. JONATHAN CL CHAN
13. AKMAL S GADALLA
14. MICHAEL LE
15. KATHERINE CAMILLERI
16. NORRIE C BENNIE
17. YANAI PELES
18. ALFRED DERA
19. VLADIMIR Z TOSIC
20. DINU RADUCANU
21. LOUIS J TABORDA
22. PRAVESH GODIYAL

Life Student Grade

1. KENNETH W YATES
2. BRUCE R HOWARTH

Student Grade

1. PETER J REYNOLDS
2. GUNILLA E BURROWES
3. FARHAN RIZWI
4. TARA J HAMILTON
5. IAN R WIENAND
6. VINEET SINGH
7. CHAKREE TEEKAPAKVISIT
8. YONAH AZRIEL
9. NIRISHA SHRESTHA
10. ADEEL N BAIG
11. CARL RENNEBERG
12. KEPING YOU
13. DAVID TSAI
14. ANNE CREGAN
15. JI YOON
16. ARUN VISHWANATH
17. BAKANG N MOLWANTWA
18. DAVID J CARMICHAEL
19. ENG SUDHAKAR KATTUPALLI
20. NIKOLAS FLOURENTZOU
21. GRAEME W LOWE
22. JOHN R BOLZAN
23. KRUTARTHA PATEL
24. SHEN DONG
25. SRIDHAR REDDY PULIKANTI
26. YAGNESH B BHATT
27. JORGEN PEDDERSEN
28. FABIO T RAMOS
29. GEOFF A HISKENS
30. SUHRUD K DESHPANDE
31. DANIEL TSE
32. TEGAN J MATTHEWS
33. CHRISTOPHER ESCOTT
34. PENG XIAO
35. ANGUS J STEWART
36. DZUNG TRAN
37. YAN HUANG
38. CHUN KIT WONG
39. DEAN A SAFADI
40. ENG RAMI N KHUSHABA
41. PRASHIL PATEL
42. ALISON E NORRIS
43. GLENN P ALCOCK
44. MARK B FREEMAN
45. JOSHUA KACEN
46. SAZZAD HASAN
47. MICHAEL R GEORGE
48. CLARENCE DANG
49. KENNETH LAM
50. MICHAEL D GEORGE
51. ANDREW S RAE
52. DANDAN LI

53. THIERRY RAKOTOARIVELO
54. MUHAMMAD ARIF KHAN
55. HEIDI B STRATTI
56. NASSIR FAKHOURI
57. TING YU
58. ENG SAMARTHA BIJUKCHHE
59. MITRA MOHD ADDI
60. TAUSEEF GULREZ
61. VENKATA K GUTTA
62. LEON K MACDONALD
63. XIN ZHAO
64. YANXING CHEN
65. BALINT SEEBER
66. YAN CHEN
67. MARTIN M SCICLUNA
68. SARAH MORILLAS
69. YANXIN CHEN
70. JITHIN KESAVAN
71. WOOCHUL CHO
72. MOHADDESEH NOSRATIGHODS
73. KAMRAN ZALI
74. MARK J TAYAR
75. NICHOLAS J WEBB
76. ALEX H NG
77. JUNGHUM YU
78. GEORGE CHI HON LAM
79. DALE R BATES
80. SAMI AZAM
81. LOUIS H JUNG
82. LACHLAN BLACKHALL
83. RAMTIN SHAMS
84. TOBIAS KAUPP
85. KAM T HO
86. PEMADEEP K RAMSOKUL
87. BIN CHENG
88. JONATHAN GAN
89. RASHMI NIGAM
90. SIMON MACKAY
91. NICK DEBOER
92. DAVID GUNAWAN
93. ALPIT R PATEL

3. Chapter News

3.1. Power Engineering Chapter

2006 was a reasonably good year but there is always room for improvement. I would like improved links with Academia as well as Industry and more effective communication with members.

Membership has increased over the past year and as of the end of January stands at 135(up 12 from same time last year). I believe that a significant number of members are eligible for Senior Member grade and would urge those of you that qualify to apply. If you require any further information please contact John Robinson, myself or visit

http://www.ieee.org/organizations/rab/md/smelev.htm

I will endeavor to have two PES lectures in the Joint lecture program. I would ask PES members to try and attend more lectures and IEEE Section functions, as well as volunteer their services in running the chapter. Officers are required to be elected annually and normally the term is limited to two years.

I would urge you all to get an IEEE web account and email alias. It is free and very easy, the web address is http://www.ieee.org/web/accounts.

NSW PES 2007 Officers are the same as last year

- Chair- Antony Zaglas (antonyz@ieee.org)

- Vice Chair - Dan Candotti (dcandotti@kemaconsulting.com)

- Secretary/Treasurer - John Robinson (jl.robinson@ieee.org)

- GOLD - Mark Gordon (gordon@ee.usyd.edu.au)
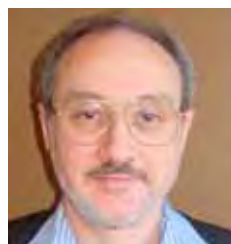
Tony Zaglas antonyz@ieee.org
Chapter Chair
Power Engineering Chapter, NSW Section

3.2. EMBS Chapter

I am delighted to continue as EMBS NSW chapter in 2007.

Broadly, our chapter services the needs of industry professionals, academics and students with an interest in the domain of Engineering in Medicine and Biology.

Our new website is now accessible via http://www.ieee.org/go/embsnsw/. Over the coming weeks you will see new content and details added to our website so make sure you bookmark this link and check it regularly! Soon you will be able to access our website via the NSW Section. So keep watch at http://www.ewh.ieee.org/r10/nsw/index.htm !

I am pleased to announce that I am the Australian representative on an international EMBS Senior Member Elevation initiative for 2007. I am sure that many of our EMBS members actually qualify for senior member, but have not yet taken the time to go through the Member Grade Elevation process, or have had difficulty located senior members to support your

elevation. So please look at the qualification requirements at http://ieee.org/web/membership/grade_elevation/grade_elevation.html. Over the coming months, if the EMBS records indicate that you would likely qualify, either I or one of my senior member representatives from within our EMBS chapter will be contacting you to support you through the senior member elevation process. I plan to establish teams of senior members who can themselves work as a team to support further senior member elevations. Alternatively, if you are a member of EMBS and believe you qualify for elevation, you are welcome to contact me via email c.mcgregor at ieee.org.

Our first on-site technical meeting was held at ResMed in December 2006. This event was extremely successful with 50 EMBS guests together with many ResMed staff. Resmed COO Rob Douglas gave a presentation on ResMed and this was followed by a factory tour. We are planning more technical meetings for 2007.

The IEEE EMBS flagship conference EMBC will run in Lyon, France in 2007. Details on the conference can be found at: http://www.embc07.ulster.ac.uk/index.htm. I am thrilled to be assisting with the organization of Theme 12: "Career and Professional Development in Biomedical Engineering" as co-chair of a new track established this year entitled "Women in Biomedical Engineering and Health Informatics". I will also be representing the NSW chapter at the Chapter Chair meeting. I hope to see you there!

As a mother of young children and recently returned to work from maternity leave, I know that fitting in attendance at Technical Meetings or during and outside of work hours can sometimes be difficult. If you are even able to arrange to attend one event each year, this may give you networking contacts that you can stay in touch with for the rest of the year.

I look forward to meeting you at one of our upcoming events. Together with your EMBS NSW committee we look forward to providing local EMBS support and assistance.

Carolyn McGregor c.mcgregor@ieee.org
Chapter Chair (Founding Officer)
EMBS Chapter, NSW Section

3.3. Communications and Signal Processing Joint Chapter

Welcome to the Communications and Signal Processing Joint Chapter local activities for 2007. We will schedule a number of lectures during the year on topics of current interest. There will be concentration on the rapidly advancing areas of Wireless Communications and Wireless Networks and their applications. Other important areas in Communications and Signal Processing will also be covered. Our lectures provide excellent background information on topics valuable to you and also provide an excellent opportunity for you to meet with many of your colleagues from industry, research laboratories, and the universities. I look forward to speaking to you at our 2007 local activities.

Sam Reisenfeld samr@uts.edu.au
Chair
Communications and Signal Processing Joint Chapter, NSW Section

4.   Technology & History

4.1. Middle East's First Computer Named History Milestone

Built in 1954 in Rehovot, Israel, the Weizmann Automatic Computer (WEIZAC) became the Middle East's first computer and put Israel in the global technology loop. That's why WEIZAC was recognized with an IEEE Milestone in Electrical Engineering and Computing on 5 December 2006, at the place where it was built.

4.2. Chemists Achieve Crucial Step Toward the Creation of Molecular Computers

A crucial step toward the development of molecular computers has been reached, according to a January

article from the journal Nature. A group of chemists from UCLA and the California Institute of Technology (both USA) reported their successful model of a massive-scale, "ultra-dense" memory apparatus that contains data using reconfigurable molecular switches.

These molecular computers are much smaller than traditional, silicon-based computers and show promise for the storing and retrieval of memory, according to the researchers. To read more, go to: http://www.eurekalert.org/pub_releases/2007-01/uoc--ucc012407.php

4.3. Thought Powered Wheelchairs in Development

A new wheelchair commanded by thoughts is currently in development by researchers at the University of Zaragoza in Spain. The chair will use a process called brain-computer interface, or BCI for short, which involves attaching electroencephalogram electrodes to a rider's scalp, which then record brain rhythms and convey them to the chair's computer. Two 800-MHz Intel computers mounted on the wheelchair will process these readings and send instructions to the wheels. While the signals are crude, advances in decoding algorithms are have made it possible to train the software to recognize simple commands such as turn left or turn right. Over time, more specific commands, such as moving to a certain room by thinking of it, will become understood by the software. To combat misinterpreted commands, a laser will be attached to the front of the chair to avoid collisions with the surroundings. The technology is still a couple years away from being perfected, and the researchers are looking at 2008 or 2009 before they will have a working prototype. Read more: http://www.wired.com/news/technology/medtech/0,725 80-0.html?tw=rss.index

4.4. Proposed ISP Plan to Stop Online Transmission Problem at the Source

A new report published by IEEE Computer Society proposes a new means of fighting harmful online transmissions such as viruses and spyware by developing software that monitors a computer's outbound traffic. This would control threats at the origin point, rather than trying to screen them at a receiving point. The authors suggest introducing a certification mechanism that induces service providers to voluntarily accept some degree of accountability, without interfering with the underlying decentralized protocols. Such a mechanism could propagate incentives through the network, ensuring that distributed participants coordinate their efforts to increase security as well as reduce congestion. Providers would then be given membership in a collective that adheres to the idea "certifying authority" (CA). Being part of the CA scheme provides incentives

and offers compensation for attacks. Additionally, settings on a user computer would be able to allow only transmissions stemming from other certified ISPs, a notion that works well for businesses wanting to avoid mail containing unblocked virus. Ultimately, the plan could create a new standard, which eliminates a significant amount of malware. Read more: http://www.computer.org/portal/site/computer/menuite m.5d61c1d591162e4b0ef1bd108bcd45f3/index.jsp?&p Name=computer_level1_article&TheCat=1005&path=c omputer/homepage/Jan07&file=feature2.xml&xsl=articl e.xsl&

4.5. New Chips Enable Faster, More Versatile Mobile Electronics

The latest technology for next generation mobile devices was showcased at the International Consumer Electronics Show in Las Vegas by chip manufacturers Qualcomm and Broadcom, who say that in addition to high-speed wireless networks, the new devices will require powerful hardware to handle business applications, multimedia such as music and video, and Web browsing.

Qualcomm's latest chipset uses a 1-GHz microprocessor, intended to improve the performance of mobile devices and reduce power consumption, the company says, and supports a variety of 3G cellular technologies, including EV-DO, deployed by Sprint and Verizon Wireless in the United States, and UMTS/HSDPA, deployed by Cingular, as well as Wi-Fi and Bluetooth. Broadcom's latest chipset, the single-chip HSDPA processor, is capable of connecting mobile users to the Web at 7 Mbps, the company says, and has advanced digital signal processing and multimedia functionality for recording and playback of video and audio, and a high-performance applications processor. Read More:

http://www.informationweek.com/story/showArticle.jhtm l?articleID=196802685&cid=RSSfeed_IWK_News

4.6. Induction Chargers Cut the Cord on Consumer Electronics

Cord-free chargers that use electromagnetic induction could be on the market in 2007, according to manufacturer Fulton Innovation, whose eCoupled technology debuted this year. The technology transfers energy from one device to another through a shared magnetic field, the firm says, and will work with common consumer electronic devices such as cellular phones, digital music players and PDAs. The technology uses a feedback and control system that queries an individual device in real time, determining power needs and the age and charging habits of its battery, insuring the charger delivers the right amount of power to keep a device at high efficiency. Read

more:
http://www.eweek.com/article2/0,1895,2077614,00.asp

4.7. Cell Phones Developed With Miners in Mind

In an effort to ameliorate rescue operations for trapped miners, three companies have joined forces to develop a cell phone that can make a call from 1000 feet inside a mine. The first tests of the phone were successful, having been completed last month in a former mine in Pittsburg, Pennsylvania (US). The phone is able to complete its calls using a technology called Internet Telephony, or VOIP for short. Additionally, the system relies on routers set up inside that create a path to the outside. The routers are configured to find the optimal path for the signal, so that if one were to collapse due to a cave in, another could pick up the signal. Once outside, the signal is converted to analog and sent over traditional phone lines. The first of the phones, called MP1, are in development and will also come with homing technology to track each individual miner. Read more:
http://www.informationweek.com/story/showArticle.jhtml?articleID=196802591&cid=RSSfeed_IWK_News

4.8. Get Certified With IEEE Computer Society's Certified Software Development Professional Program

The IEEE Computer Society's Certified Software Development Professional (CSDP) program, a certification program for mid-level software engineers, will offer two testing windows in 2007. The application deadline for the 2 April - 30 June testing window is 2 April. The application deadline for the 1 September - 30 November testing window is 1 September. For more, visit: www.computer.org/certification

4.9. Engineers Model Superfluid Behaviour with Lasers

Superfluids, frictionless liquids that are difficult to create and study, can be modeled using lasers, according to electrical engineers at Princeton University, who say that the technique allows them to simulate experiments that are difficult or impossible to conduct with superfluids. The researchers say that they validated their technique by generating results that matched data from previous superfluid experiments. Particles in superfluids move together instead of at random and the same behavior has been observed in light waves that pass through certain materials known as nonlinear crystals. The research could heighten the current understanding of condensed matter physics as well as lead to advances in sensor technology, atomic trapping and optical communications. Read more:

http://www.theengineer.co.uk/Articles/297586/Lasers+shed+light+on+liquids.htm

4.10. See-through Displays

Transparent, high-performance transistors embedded in glass or plastic can power see-through displays, according to a Northwestern University chemist, who says the technology could lead to displays that are indistinguishable from plates of glass when not displaying an image. Applications could include car windshields that display maps, giant billboards and a variety of applications for new electronics, according to the chemist who says he has launched a start up to commercialize the technology and could have products on the market by 2008. Read more:
http://blog.wired.com/gadgets/2006/12/seethrough_disp.html

4.11. Mobile Gigabyte DRAM

The first 1-gigabyte DRAM for mobile products, using 80-nanometer process technology, has been developed by Korean electronics giant Samsung. The synchronous DRAM is intended for use in a range of handset applications, digital still cameras, portable media players and portable gaming products, according to Samsung. The new DRAM uses the same packaging technique as the 512-megabyte double-die stack, but includes a temperature-sensing feature. Samsung claims its temperature-compensated self-refresh feature reduces power drain in standby mode by 30 percent over conventional memory chip designs. Samsung said it plans to mass produce the new device beginning in the second quarter of 2007. Read more:

http://www.eetimes.com/news/latest/showArticle.jhtml;jsessionid=F4BELYO01LHUEQSNDLSCKHA?articleID=196702063

4.12. Healthy Cell Phone Chip Will Battle Harmful Emissions

At the recent GSM World Congress in Barcelona, Spain, one emerging company made itself heard by touting its new healthy mobile phone chip. Created and patented by Exradia, a London-based technology company only a year old, the ASIC Chip is embedded into a mobile phone's battery to neutralize potentially harmful emissions, generating the noise field signal that drives a wire coil to produce the noise field itself. It's based on Noise Field Technology and works by superimposing a low frequency randomized magnetic field over the man-made regular electromagnetic field (EMF) emissions that such components output. The added noise essentially manages to mimic low-level erratic EMF emissions that occur in nature, causing human biological cells to ignore them. Read more:

http://www.informationweek.com/story/showarticle.jhtml?articleid=197005092&cid=rssfeed_iwk_news

5. Technical Meetings & Conferences

All members are cordially invited to attend these joint meetings with the Engineers Australia (EA), IEEE, ITEES and IET. These joint meetings are held at 6.00 pm (with light refreshments at 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.

2007	Event	Speaker	Host	Contact	Venue [ensure you re-confirm beforehand]
28/2/2007	RMV Queen Mary 2 - Electronics	John Jeremey	Joint (EA)	George Fox	Chatswood RSL, 446 Victoria
5/3/2007	IEEE NSW SECTION - Meeting		IEEE	Antony Zaglas	(7:00~9:00pm) Seminar Room 1 - Library Gore Hill TAFE
6/3/2007	Woods Hole Oceanographic Institute - Topic	Sandy Williams	IEEE	David Burger	MIDDAY to 2pm - Lecture Theatre - 570 George St, SYDNEY
8/3/2007	National Electricity Market	Dr Brian Spalding, NEMMCO CEO	EA	George Fox	8 Thomas Street, Chatswood
12/3/2007	Introduction to High Performance Computing (free of charge)	Dr Joachin Mai, Australian Centre for Advanced Computing & Com	IEEE Computer & joint members	M Arif Khan mkhan@ics.mz.edu.au	1pm to 2pm, conference room level 2, Building E6A (Room #211), Macquarie University
18/3/2007	Sydney Harbour Bridge 75th Anniversary – Walk [keeping engineers fit program]	www.ourbridge.com.au	EA Heritage	1300 884899	Listed out of special interest, albeit non electrical in nature, Free to Walk over it, $3 to drive over it, **FROM** $169 to walk to the top of it.
22/3/2007	Demand Management - relationship between energy efficiency, greenhouse abatement and peak demand	Paul Myors, EnergyAustralia	IET	David Bruce-Steer	8 Thomas Street, Chatswood
2/4/2007	IEEE NSW SECTION - Meeting		IEEE	Antony Zaglas	(7:00~9:00pm) Seminar Room 1 - Library Gore Hill TAFE
2/4/2007	ESA Terahertz Technology	Dr. Peter DeMaagt	??		???
April 2007, date TBA	Internet 3.0: Ten Problems with Current Internet Architecture and Solutions for the Next Generation	Prof. Raj Jain	IEEE Comsig	IEEE Asia Pacific Operations Centre, Singapore Science Park 1	Internet Conferencing Presentation using IEEE LiveMeeting conference center.
11/4/2007	ANSTO Nuclear Reactor Seminar		EA Illawarra	Bob Innes	Contact Engineers Australia Illawarra/Sutherland directly.
12/4/2007	Quantum Dots and Nanowires	Professor Chennupati Jagadish	Joint (IEEE)	Graham Town	8 Thomas Street, Chatswood
1/05/2007 - 3/05/2007	CeBIT Australia. CeBIT@hannoverfairs.com.au [Fees may apply].		Industry	Hannover Fairs Australia	Sydney Convention and Exhibition Centre
7/5/2007	IEEE NSW SECTION - Meeting		IEEE	Antony Zaglas	(7:00~9:00pm) Seminar Room 1 - Library Gore Hill TAFE
10/5/2007	Siemens - Future directions		Joint (EA)		8 Thomas Street, Chatswood
24/5/2007	Electrical Systems for the water poor		Joint (IET)		8 Thomas Street, Chatswood [SEMINAR]
4/6/2007	IEEE NSW SECTION - Meeting		IEEE	Anthony Zaglas	(7:00~9:00pm) Seminar Room 1 - Library Gore Hill TAFE
14/6/2007	The commercialization of Photonics technology, case studies	Ian Clarke (Optium Inc)	Joint (IEEE)	Graham Town	8 Thomas Street, Chatswood
28/6/2007	Sustainable Energy / Alternate Electricity		Joint (EA)	Peter Hitchiner	8 Thomas Street, Chatswood

- The 7th International Conference on Power Electronics and Drive Systems (PEDS'07) will be held in Bangkok, Thailand, 27 to 30 Nov 2007.
- IEEE Wireless Communications and Networking Conference (WCNC 2007) from 11 – 15 March 2007 / Hong Kong **/** http://www.ieee-wcnc.org

The 2nd International Conference on Wireless Broadband and Ultra Wideband Communications
AusWireless'07
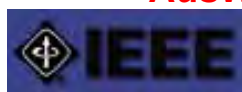
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Full papers due: **31 March 2007**
Notification of Acceptance: **15 May 2007**
Camera Ready due: **15 June 2007**

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All papers will be peer reviewed. Accepted and published papers will be included in the conference proceedings published by Springer. Selected best papers from the conference will also be published as a book by Springer Netherlands.

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Seminar on High Performance Computing organizes by MQ IEEE Student Branch.

Date: Monday, 12th March
Time: 1:00pm to 2:00pm
Venue: Conference Room Level 2, Building E6A (Room # 211), Macquarie University, Sydney

Topic: "Introduction to High Performance Computing"
Speaker: Dr. Joachim Mai
              Australian Centre for Advanced Computing and Communications (www.ac3.com.au)
Charge: No fee for attending this seminar.
Contact: M Arif Khan mkhan@ics.mq.edu.au (PhD Student, Electronics Department, Macquarie University)

Abstract:
Introduction to High Performance Computing (HPC)
General introduction to HPC for beginners. Covering different hardware architectures as well as software concepts. Introduction to the super computers available at ac3 and APAC.

1) General introduction into High Performance Computing
   a) Different system architectures (Hardware)
   b) Different programming strategies (Software: MPI, OpenMP, PVM, Parallel Libraries, commercial software)
2) Hardware and Software available at ac3 and APAC.
3) Choosing the right hardware/software for your problem

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