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NEWSLETTER

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Editor's Remarks

Robert Ellen

Greetings once again IEEE Queensland Section members. This Third Quarter newsletter will be the last regular edition for the year. We will publish a special edition prior to the Annual General Meeting on Thursday 29 November at the Sofitel Brisbane.

The section's chapters are winding up for the year and preparing for the AGM but not before hosting a few more events such as the Power Engineering Society chapter's *distinguished lecturer* presentation and the Computational Intelligence Society chapter's Postgraduate Symposium. I attended this Symposium last year and was impressed by the quality of research into Computational Intelligence be pursued by Queensland universities and their students. This year I have no doubt that there will be more excellent work on display.

Please consider attending the AGM and the AGM dinner. Details are provided in Joe's Vice-Chair message. Last year this evening was very entertaining and this year's is shaping up to be even better. I hope to see you there.

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Message from the Chair, IEEE Queensland Section

Dr Vaughan Clarkson

As we enter the final quarter for 2007, I am pleased to report that our Queensland Section has continued to be very active this year. All of our technical chapters have held events through the year to date and more are planned. Please see details in the remainder of the newsletter. Our membership also continues to grow strongly.

I am happy to report that our Section Executive Committee is now fully populated with volunteers: all offices are now taken. Since the last newsletter, Dr. Philip Machanick, Visiting Fellow at The University of Queensland, has graciously volunteered his time in the position of Student Activities Chair, the only position that was still vacant.

I'd like to announce that Robert Ellen is also putting on another hat in the committee. As well as serving as our Newsletter Editor, he has also nominated for the position of GOLD (Graduates of the Last Decade) Affinity Group Chair, in which he was unopposed. Robert replaces Peter McLarty in this position, though Peter is staying on as our Membership Coordinator. I'm looking forward to new initiatives in GOLD under Robert's leadership and indeed there is already a function planned: see Robert's inaugural column as GOLD Chair.

Another change which has taken place is that Amoakoh Gyasi-Agyei leaves us as Student Counsellor for Central Queensland University and is replaced by Dr. Shawkat Ali. Amoakoh leaves not only the committee but also our fair shores. We wish you well, Amoakoh, and thank you for your service not only as Student Counsellor but also, in the past, as Treasurer.

It is at this time of year that the Section Officers begin preparing in earnest for the AGM and dinner. Our Vice-Chair, Joe Dong, has an announcement to make in that regard, and I think this year's event promises to be a very pleasant evening with an engaging special guest speaker. Last year's event was the best attended Section dinner that anyone can remember and I hope we can outdo ourselves again this year. I look forward to seeing you there!



Message from the Vice-Chair, IEEE Queensland Section

Assoc. Prof. Zhao Yang Dong

IEEE QLD Section Final Year Student Thesis Prizes

With the end of the university academic semester approaching it is time to consider the *IEEE Prize for the Best Final Year Thesis* in all fields of electrical engineering and information technology, and the *Mat Darveniza IEEE Student Prize* for the best final year thesis in power engineering. Information about these prizes have been sent to all student counsellors. Details of these prizes are available at:

<http://www.ewh.ieee.org/r10/queensland/StudentPrize.html>.

To win these prizes, students participating in the competition should have their thesis submitted to the student counsellor of their home university by 12 November 2007. The winning students will be notified before the annual general meeting. Winners of the student thesis prizes will be invited to attend the AGM, where the prizes will be awarded.

IEEE QLD Section 2007 Annual General Meeting (AGM)

The section's annual general meeting will be held on Thursday 29 November 2007 at *Sofitel Brisbane*, 249 Turbot Street, Brisbane (Tel: 07 3835 3535), commencing at 5:30pm in the Concorde room. After the AGM we invite members and their partners to attend the AGM dinner. Sofitel Brisbane will provide set course meals and a beverage package of quality house selected red, white and sparkling wine, light and full strength local beer, orange juices, soft drinks and mineral water. The total cost of the AGM dinner is as follows:

\$80 for partners of participating members

\$60 for general IEEE members

Free for student thesis award receipts & partners

This year's AGM features a VIP guest speech by **The 2006 Prime Minister's Prize for Science** and **2007 Smart State Fellowship winner** - *Professor Mandyam Veerambudi Srinivasan*.

Members planning to attend the dinner should send their payment to the treasurer of the IEEE QLD Section. Payment can be made by direct deposit (preferred) or by cheque (sorry no credit card payment acceptable) by 15 Nov 2007.

Direct deposit can be made to:

Account name: IEEE Queensland Section

BSB: 804-083

Account number: 305832

Payment reference: Your 8 digit IEEE member number along with your last name.

Cheques payable to "IEEE Queensland Section" can be posted to:

Dr Peter Sutton

School of Information Technology & Electrical Engineering

The University of Queensland

St Lucia, QLD 4072

In either case, please also email Peter at p.sutton@itee.uq.edu.au so that he can confirm receipt by return email. Please also advise Peter or me of any special dietary requirements.

Update from the Awards and Recognition Coordinator

Michael Lees

IEEE Region 10 Outstanding Volunteer Award - 2007

There was recently a call for nominations for the Region 10 outstanding volunteer award for 2007.

"The IEEE Region 10 Outstanding Volunteer Award aims to recognize those volunteers who have made outstanding contributions to a particular Region 10 section."

The candidates are judged on a number of criteria including such things as: new ideas developments or projects that have significantly benefited the section, length of service, administrative and leadership ability and support for other volunteers.

After considering a number of potential candidates the IEEE Queensland section committee has nominated our immediate past Chair Tapan Saha for this award. Tapan has made an outstanding contribution to the Queensland section over a number of years in a number of different roles. During his time as Chair the Queensland section membership grew by 23%.

The nomination deadline was the end of September 2007. The results will be announced at the end of October and the award will be presented at the R10 committee meeting in February 2008.

We congratulate Tapan on his nomination and wish him all the best with the selection process.

Historical records for the IEEE Queensland section

We are currently seeking details on the history of the IEEE Queensland section. In particular we are seeking details on all office bearers that have occupied any roles in the IEEE Qld section since its inception. If you have any details or information that may be of assistance could you please contact me.

Michael.Lees@ieee.org



QUT Student Branch Update

Dr Jasmine Banks
QUT Student Branch Counsellor

The QUT student branch had a "pizza" lunch function on Aug 10. There was such an enthusiastic turn out that S405A was completely full and there was barely enough pizza to go around! I gave a talk about IEEE membership, and we also had a visit from the Chair of IEEE Queensland.

If you are completing a thesis this year consider entering the IEEE Queensland student thesis prize. There are two categories - one in the area of power engineering and the other open to all areas of electrical and electronic engineering and information technology. The prize in each case is \$500 so is not insubstantial.

If you have any suggestions for future activities for our QUT student branch, please contact me.

GOLD Affinity Group Update

Robert Ellen,
Chair-Elect, GOLD Queensland Affinity Group

It is an honour to be named your GOLD Affinity Group Chair for the next two years. As I was selected unopposed I must thank the Queensland Committee for their faith in my abilities to fulfil the role. My first actions will be to reach out to the GOLD membership and to begin initiatives for 2008.

Communication will be a key determinant of the ongoing success and level of growth that the Affinity Group will achieve. Even though we are often reminded that in many ways the engineering and computing professions are small and 'close-knit' in Queensland, poor communication within and outside of our community can make us feel isolated. Thus, I am very eager to hear from all GOLD members (those who received their first tertiary degree in related to electrical/electronic engineering or computing within the last ten years). I personally, and the IEEE generally, are here to serve members and without hearing from you I can only assume what interests you may have. Very soon I would like to contact GOLD members via email to begin to get to know you, what your interests are, and those of your non-IEEE professional friends and colleagues.

As the Affinity Group is still barely crawling getting an agenda for 2008 will be challenging. Initially, I have four approaches to developing initiatives to serve GOLD members. Firstly, I intend to model GOLD Affinity Groups elsewhere, applying locally what has worked well for others. Secondly, I want to approach other organisations in Queensland who represent young or recently established engineering and computing professionals to co-operate on providing services relevant to IEEE members. As mentioned, we are a small community, so it makes sense not to compete for resources. Thirdly, I will take suggestions from members for event ideas as well as drawing from what I personally find interesting. Finally, as newly established professionals we all need to take the lead and contribute to others from time to time. As such, I ask that members step in with real possibilities for initiatives that they find interesting and are passionate about.

I hope to see as many of you as possible at GOLD Affinity Group events very soon.

Computational Intelligence Chapter Update

**Assoc. Prof. Brijesh Verma,
Chair, Computational Intelligence Society Queensland Chapter**

Upcoming Event: Postgraduate Symposium & Distinguished Visitor

We are currently planning the Computational Intelligence chapter's Postgraduate Symposium at the end of November. The date is being finalised - the most probable being the 30th November 2007. The symposium will take place between 9am and 3pm via AccessGrid at CQU, UQ, Griffith and QUT. It will be a full day event including a total of 12 presentations from students at CQU, UQ, Griffith and QUT. There will also be a presentation by Professor Andre de Carvalho. Prof. Carvalho will be visiting the CIS Chapter, CQU and ARC research network (ISSNIP) during 27th November-6th December 2007. His visit is fully funded by ARC research network (ISSNIP).

Please stay tuned to your email for further information regarding the symposium.

Computer Society Chapter Update

**Dr John Williams
Chair, Computer Society Queensland Chapter**

I am very pleased to announce that IEEE Queensland Section has agreed to support our chapter as a Bronze sponsor of the Open Source Developers' Conference (OSDC), to be held in Brisbane from November 26th-29th.

This is very much a professional/industry-focussed conference, and the program is available now on the OSDC website:

<http://osdc.com.au>

As part of this sponsorship deal, we have negotiated extended early-bird registration discounts for IEEE members. The discounted registration fees are:

- \$275 (normally \$295) until October 31st.
- \$295 (normally \$325) after that.

IEEE Computer Society will also have a table at the exhibition day on the conference Wednesday, so please drop by and say hello.

I hope we will see you there!

Control Systems / Robotics & Automation Joint Chapter Update

Michael Lees

Chair, CSS/R&A Queensland Joint Chapter

Recent Events

Seminar: **The Australian Synchrotron**

The seminar was held on Thursday 23rd August at Hawken Auditorium, Engineering House. It was a very interesting talk that covered both Engineering aspects behind the design and operations of the synchrotron as well as some of the applications that it is used for. It was also interesting to hear about the prominent role of open source software in the everyday operation of the synchrotron facility.



Figure 1 Audience members listening to Richard Farnsworth presenting the seminar on "Australian Synchrotron", at the Hawken Auditorium at Engineering House

The talk was attended by an audience with broad interests ranging from Engineering to various strains of Science. It also included some local Queensland research groups with an interest in actually using the synchrotron to assist with areas of their research.

A live display of the synchrotron's current beamline status (as shown in Figure 2 overleaf) can be seen at:

<http://vbl.synchrotron.vic.gov.au/fsm>

Upcoming events

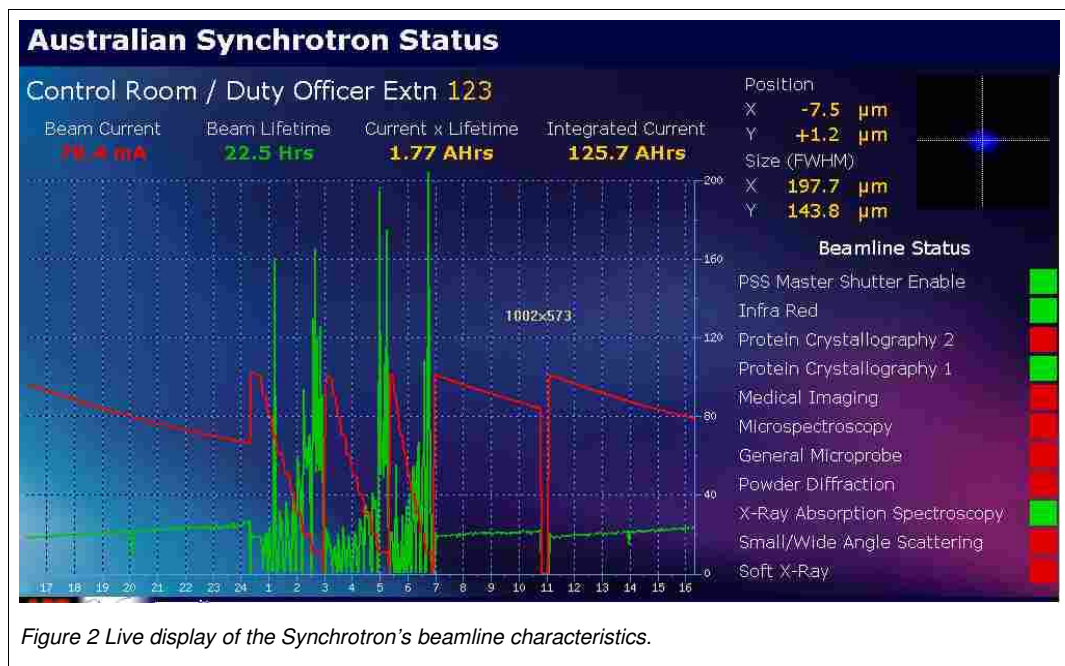
February 2008

Seminar: Sensor Networks for Agriculture and the Environment

Speaker: Dr. Peter Corke Chief Research Scientist at the Autonomous Systems Laboratory at the CSIRO ICT Centre. (As seen on ABC's The New Inventors Special: Future Thinking).

Date: 28th February

Location: Hawken Auditorium, Engineering House (This is a joint seminar with Engineers Australia (ITEE))



IEEE Expert Now

A selection of new courses that have been developed from some of the best IEEE tutorials and workshops from around the world are being packaged as one-hour online learning courses under the brand IEEE Expert Now.

"...these courses have been developed by recognized experts in a wide range of engineering and research technologies."

Although still in its infancy, this service covers a wide range of fields and topics. The current list of offerings can be seen at: http://www.ieee.org/web/education/Expert_Now_IEEE/modules.html

The first title that is available in the Robotics and Automation field is: "SLAM, Simultaneous Localization and Mapping" by Henrik Christensen

IEEE Member Individual Purchase (\$69.95 – 30 day access)

RAS ADCOM ELECTION

There is an upcoming election for the Robotics and Automation Society's Administrative Committee (ADCOM). Voting will begin in October, where RAS members will elect six new ADCOM members from a list of twelve candidates.

Our own Dr. Peter Corke from CSIRO Queensland is one of the candidates for Area 3: Asia, Australia and Oceania (IEEE Region 10)

Special requests for specific seminar topics or speakers are also welcome. Please forward any requests to me at Michael.Lees@ieee.org

Power Engineering Society Chapter Update

Dr Rajat Majumder

Chair, Power Engineering Society Queensland Chapter

The IEEE Power Engineering Society, Queensland Chapter is pleased to announce the upcoming *IEEE distinguished lecture* by Dr. Kaushik Rajashekara on 1st November 2007. Dr. Rajashekara is Senior Technologist from Propulsion & Power Systems Engineering, Rolls-Royce Corporation.

Details of the Lecture:

Title: **Hybrid Electric Vehicles and Fuel Cell Systems for Transportation**

Abstract and outline of the talk:

The automotive companies are developing hybrid and fuel cell vehicles for reducing the emissions and for improving the fuel economy. In addition, fuel cells are also being considered for on-board power generation in transportation systems. In this seminar, different types of hybrid, including plug-in hybrid, and fuel cell vehicle strategies and their operation are described. The associated power electronics and control strategies will be explained. The use of Solid Oxide fuel cells for on-board power generation in transportation applications will also be presented. Future technology trends and strategies will be discussed.



Dr. Kaushik Rajashekara

- Introduction
- Challenges facing the Transportation Industry
- Electric, Hybrid, and Fuel Cell Vehicles
- Types of hybrid vehicles: Series, parallel, series/parallel
- Propulsion requirements
- Power Electronics and Control strategies
- Comparative study of Hybrid Vehicles
- Fuel Cell Vehicle Systems
- Freedom Car Targets
- SOFCs for on-board power generation in Transportation Applications
- Future Strategies
- Conclusions

Biography of Dr. Kaushik Rajashekara

Kaushik Rajashekara (M'86-SM'89-F99) received his B.Sc. degree from Bangalore University, India in 1971; B.Eng., M.Eng. and Ph.D. degrees from the Indian Institute of Science, Bangalore, India in 1974, 1977, and 1983, respectively. From 1977 to 1985, he worked as an Asst. Professor in Indian Institute of Science, Bangalore. In 1978 and 1984-85, he worked at Asea Brown Boveri, Switzerland, on power electronics systems. In 1982, he was a visiting scientist at the Technical University of Dresden, Germany. From 1985 to 1987, he was a visiting Associate Professor at the University of Quebec, Canada, working on Photovoltaic utility interactive systems. From 1987 to 1989, he worked at Viteq Corporation, USA, in the area of uninterrupted power supplies for computers. In July 1989, he joined Delphi Corporation, which was a division of General Motors. In Delphi, he held

various technical and managerial positions, and has been the Chief Scientist for Propulsion, Fuel Cell & Advanced Energy Systems. In May 2006, he joined Rolls-Royce Corporation, Indianapolis as a Senior Technologist working on the More Electric Aircraft systems. Dr. Rajashekara has done extensive research in the area of power conversion for Transportation, Propulsion Systems for Electric, Hybrid, and Fuel cell vehicles, and Fuel Cells for Transportation and Power Generation applications. He has published more than 70 papers in international journals and conferences. He currently has 19 patents and 10 more that are pending. He has been a keynote speaker in several conferences. He has conducted short-term tutorial courses in various universities in Asia, Europe, and local IEEE chapters. In 1999, Dr. Rajashekara was elected to the Fellow of IEEE for his contributions to the advancement of propulsion systems for electric and hybrid vehicles. He was inducted into the Delphi Innovation Hall of Fame in 1999. In 2004, he was recognized as a short-term scholar under UNDP China program and China International Center for Economic and Technical Exchange. He was a member of the Technical Program Committee, Session Chair, and Session Organizer for several IEEE conferences. He was the Technical Program Chairman of the IEEE Workshop on Power Electronics in Transportation. He was also the Chairman of the Power Electronics Devices and Components committee of the IEEE Industry Applications Society (1999-2000). Dr. Rajashekara has been elected as Distinguished Lecturer of the IEEE Industry Applications Society (2006-2007). Dr. Rajashekara is recipient of the IEEE Industry Applications Society Gerald Kliman Innovator Award 2006.



List of your Volunteer Office Bearers for 2007

NOTE: full contact details may be found at

<http://www.ewh.ieee.org/r10/queensland/OfficeBearers.html>

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