

IEEE VICTORIAN SECTION

# Annual Report 2015



**Cover:** An unusually calm sea at Warrnambool, Victoria. The Section is currently seeking to engage more members from regional areas in Victoria and Tasmania.

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# Chairman's Report



Tony Gascoigne

*Highlights of 2015 include an unprecedented level of technical activity in the Section, the planning, preparation and conduct of a major new project by our WIE Group, and the introduction of several new policy initiatives.*

Early in the year we hosted a visit by IEEE-EMC Distinguished Lecturer Dr John D. Norgard from NASA in Houston, USA. Dr Norgard spoke on space vehicle design, particularly the problems of achieving electromagnetic compatibility between the many modules and subsystems in modern spacecraft. That this lecture attracted widespread interest would be an understatement – the auditorium was packed to the rafters with over 100 persons present. Clearly, the magic and romance of deep-space exploration has not lost its appeal!

In July we sponsored three of our Student members to attend the IEEE Region 10 International Student Congress held in Colombo, Sri Lanka. These congresses are always popular with our students and this year's event was no exception. It was evident from the very positive reports received on their return that it had been a valuable learning experience for all concerned.

In August, our Women in Engineering Affinity Group held their long-planned "Energised Fashion" Runway at RMIT University. Twelve (12) professional models paraded in an exhibition of original e-designs created by WIE members and

their friends. There were over 200 persons present. The event was preceded by many months of meticulous planning and preparation.

Our Systems Man and Cybernetics Chapter was judged "Best Subunit" for the year, based on their tally of twenty-two (22) well-managed technical events covering a very broad range of theoretical and practical topics. The WIE Affinity Group was the runner-up in this inter-group assessment with eighteen (18) events.

But while SMC and WIE were the star performers, almost all our Chapters and Affinity Groups have performed well, and some exceptionally well. As a result we recorded close to 100 technical events for the year, an all-time record for Victorian Section.

On a less conventional note, we recently called for expressions of interest in forming Special Interest Groups in the Section. Such groups will allow members with similar interests and professional experience to collaborate on practical "hands-on" development projects. The emphasis will be on the existing needs and opportunities of industry and community life, rather than research

for the future. Our initial publicity met with an encouraging response and implementation of this program will proceed in 2016.

Another recent initiative was the launch of a new Conference Travel Grant aimed at members working in Industry or Government, or otherwise employed outside the Academic/and Research sectors. Our aim is to encourage a greater degree of participation in IEEE conferences by our Industry members. In this case the response to date has been somewhat equivocal, but we consider that continuation of this scheme is warranted for the immediate future.

From this brief overview, I have shown that our Section activities are not limited to conventional lectures, seminars, workshops and conferences, although these remain our “core business”. But also - that we are constantly striving to launch out in new directions, to plumb new depths. And such diversity is possible only through the large fund of

talent, energy and commitment that we have available in our volunteer numbers.

Since this is my final Report as Section Chairman, I close by thanking my colleagues, Vice-Chair Alan Harvey, Section Treasurer Enn Vinnal, and Section Secretary Nishad Mendis, for their help and support. I’m also pleased to acknowledge the incoming executive team led by Eddie Custovic as Section Chair and Golnar Khomami as Vice-Chair, and I wish them every success. ■

*Anthony E. Gascoigne*  
*Section Chair, 2014/2015*  
*[a.e.g.@ieee.org](mailto:a.e.g.@ieee.org)*

## The Year Ahead



Eddie Custovic

*During 2016, the Section will work tirelessly with our membership to increase the IEEE Victorian Section representation, influence and visibility in Australia, and more importantly, in the whole Asia-Pacific region (IEEE Region 10).*

For years, IEEE Victorian Section has been an outstanding performer through our technical societies/chapters, student branches and affinity groups. We will ensure that the work of our volunteers is rightfully recognised through a strong advocacy of nominations for regional and global awards.

The recent launch of IEEE Collabratec as a powerful tool for collaboration and interaction will play a major role in increasing membership retention as well as enabling more effective engagement with industry. With the support of our membership we will effectively utilise social media platforms, public forums and other publications to strengthen the image of IEEE in the professional and public eyes. The needs of our members in industry are equally as important as those of students and young professionals. We will work to increase awareness of the member benefits available and encourage our members to take full advantage of these wherever possible.

The Section has initiated a very exciting

initiative for 2016, the “Signature Event Series”. These will be high-impact and high-value workshops, perhaps three or four in number, on topics of special interest to members, or having particular relevance to their work. These workshops will become the “premium products” offered by and coordinated by the Section.

Finally, as members of this great institution, we have a responsibility to educate the general public about advances in technology and how such trends are shaping community life and our future.

We will endeavour to “grow” the presence of IEEE in Victoria and Australia by establishing stronger links with the secondary education sector, also with regional communities in Victoria and Tasmania, with industrial enterprise (small and large), and with local and state governments. ■

*Dr Eddie Custovic  
Section Chair-Elect 2016/2017  
[e.custovic@ieee.org](mailto:e.custovic@ieee.org)*

# Review of Activities, 2015

*In this brief survey we touch on some of the highlights of the Section program in 2015, a year of unprecedented technical and professional activity.*

## ELECTION REPORT

Nominations were called for the 2016 Section Executive Committee in October 2015. Three Officer positions were contested, those of Chair, Assistant Secretary and Assistant Treasurer. As a result of the secret ballot elections held in November 2015, the Section Officers for 2016 will be as listed below:

**Chair** – Edhem Custovic

**Vice-Chair** – Golnar Khomami

**Treasurer** – Enn Vinnal

**Assistant Treasurer** – Mehrnaz Shoushtarian

**Secretary** – Nishad Mendis

**Assistant Secretary** – Elspeth McKay

**Immediate Past Chair** – Anthony Gascoigne

The voter turnout on this occasion was 8%, somewhat higher than in the previous two Section elections. Thanks are due to all outgoing members of the 2015 Committee for their valuable service during the past year. A special “thank you” also to the Nominations & Elections Committee, ably led by Ms Annick Boghossian.

## ANNUAL GENERAL MEETING

The Annual General Meeting of IEEE Victorian Section was held at the Metropolitan Hotel, William Street, Melbourne, on 9<sup>th</sup> December 2015. Forty-nine (49) persons attended, including IEEE Members and their partners and invited Guests. Many Student and Graduate Student members and their partners were present. Dr Mehrnaz

Shoushtarian, EMBS Chapter Chair, served as compere and MC. She displayed talent in this role, despite being recruited for the task at very short notice.

A highlight of the evening was a brief musical recital by Ms Harmony Yu, a student at La Trobe University, who plays the *erhu*, a traditional two-stringed Chinese instrument played with a bow. The talented Ms Yu also featured at the 2014 AGM and her performances were very well received on both occasions.

In accordance with our established practice, Cash Awards were presented to the two winners of the Student Paper Travel Grant Competition (see details under Student Paper Awards, below). Also, Certificates of Commendation were presented to outstanding Student volunteers and others who made a notable contribution to Section affairs during 2015

Special thanks are due to Ms Nalika Dona, Dr Ee Hui Lim and all others who assisted in the organisation and running of the AGM.

## MEMBERSHIP DEVELOPMENT

The Section has not grown as expected during 2015, in fact we have suffered a significant decline in several member grades (see tabular summary below). We understand that such setbacks to growth have been widely experienced throughout IEEE Region 10. Final membership statistics are currently being analysed and will be used to develop our publicity and recruitment strategies in the coming year. We are particularly keen to

recruit more members from Industry, and detailed strategies to achieve this objective will be implemented during 2016. We are pleased to note that the number of IEEE Fellows in the Section increased substantially from 1<sup>st</sup> January 2015, with five (5) new members in this grade, including Prof. Jean Armstrong, our first female Fellow. These 2015 grade elevations were announced late in 2014, but were not included in previous membership reports.

MEMBER GRADE	2015	2014	%
Fellow	20	16	+25
Senior Member	156	154	+1.3
Member	1421	1493	-4.8
Grad.Stud.Member	271	323	-16
Associate Member	29	38	-24
Student Member	109	109	0
<b>TOTALS:</b>	<b>2006</b>	<b>2133</b>	<b>-6.0</b>

During the coming year we plan to produce a set of promotional brochures covering a range of section activities and special interests. These will be made available on the Section website and on social media, in both soft and hard copy. Also, special projects and other initiatives undertaken by our WIE Affinity Group and other subunits will continue to have a positive impact on Section membership.

## CHAPTERS

For the second consecutive year, the general activity level of our technical chapters increased markedly over that of the previous year. During 2015 there were ninety-seven (97) technical events

in total – an increase of about 40% over the seventy (70) events recorded in 2014, which was itself an all-time record for the Section.

The star performer was the Systems, Man & Cybernetics Chapter with twenty-one (21) technical meetings, followed by EMBS Chapter with nine (9) meetings. Both chapters were distinguished by the diversity of the topics covered and the general quality of the presentations. The overall average of our fifteen chapters was more than four (4) events each, *excluding* joint (inter-chapter) events. All but one of our chapters satisfied the MGA compliance rule (two or more technical activities). The defaulting subunit has leadership issues and appropriate corrective action will be taken by the Section Committee early in 2016.

During the year we were pleased to welcome a number of IEEE Distinguished Lecturers, including Dr John D. Norgard from NASA, Houston; Prof. Ram Achar from Carleton University, Ottawa, Canada; and Prof. Albert Wang from The University of California, Irvine. The Norgard lecture covered NASA's present and planned future programs in deep Space exploration and was a particular "hit" with the very large audience present.

## AFFINITY GROUPS

All three (3) Affinity Groups were active during the year and collectively displayed a commendable degree of commitment and enthusiasm in their respective areas of operation. The outstanding performer was the Women-in-Engineering group, with eighteen (18) technical, educational and special-interest events. They were followed by the Life Members group and the Young Professionals group. All three affinity groups collaborated well with each other and with the technical chapters.



As mentioned in the Chairman's summary, a feature of the WIE program was the long-planned Energised Fashion Runway held at RMIT University in August 2015. Over 250 persons attended this event in which twelve (12) professional models paraded in a display of original e-designs created by WIE members and their friends. The project was supported by a generous grant from The National Science Foundation, Australia. Other features of the WIE year were a Hackathon held in November 2015, and a multitude of instructional workshops, visits to schools and universities, and other proactive initiatives.

### TECHNICAL ACTIVITIES SUPPORT

Technical activities are our Section's "core business". Since in the past our technical subunits have not always operated as effectively and consistently as might be desired, in 2014 a new Technical Activities Support Unit (TASU) was established with the aim of raising the general standards of operation. A Terms and Reference document was prepared to outline the primary functions and responsibilities of this new unit:

In the event, TASU has been a great success and has contributed directly to the unprecedented levels of technical activity achieved during the past two years. TASU is managed by Robert Slaviero, a past Section Chair and founding Chapter Chair, whose knowledge and experience have been key factors in the results achieved.

### STUDENT BRANCHES

Victorian Section has seven (7) IEEE Student Branches and most of these reported satisfactory levels of activity during 2015. In an end-of-year assessment by the Victorian Section Executive, The University of Melbourne Student Branch was

deemed the Outstanding Student Unit for 2015. But in fact, several of our SB's have exhibited very high levels of commitment and initiative, and this evenness of performance in the top-ranking groups must be emphasised.

In April 2015, we held an Introductory Student Workshop in which student members were introduced to the general organisation and operations of the Section. The particular duties and responsibilities of IEEE Student Branch officers and volunteers were highlighted. This workshop was first convened in 2014 and has now been scheduled as an annual event.

In July, we sponsored three of our Student members to attend the IEEE Region 10 International Student Congress held in Colombo, Sri Lanka. These congresses are always popular with our students, and it was evident from the reports received from our delegates on their return that it had been a valuable learning experience for all concerned.

In October, an informal dinner for Student Officers was held in Melbourne. This is now a regular calendar event that allows volunteers from the various student branches to become better acquainted. Also, students have an opportunity to discuss their activities with senior members of the Section Committee, in a low-key social setting.

Although the Student Mentoring scheme first introduced in 2014 has not been particularly successful, an improved and updated version of this scheme is under consideration for near-term implementation. The challenge here is to provide ample opportunities for experiential learning, without imposing unduly on the limited time availability of students, many of whom are already heavily burdened by their academic and research commitments.

## STUDENT PAPER TRAVEL GRANTS

The Student Paper Travel Grant competition provides financial support to IEEE Student Members and Graduate Student Members who present accepted papers at IEEE conferences (or approved non-IEEE conferences). In 2015 there were two such competitions, one in each half-year.

In the first round of the competition, the successful lead-author was Ms Negin Shariati of RMIT University, for a paper titled “Highly Sensitive FM Frequency Scavenger Integrated in Building Materials”. The lead-author in the second round was Ms Sahar Sabbaghi of Swinburne University of Technology, for a paper titled “Automated Colour Identification in Melanocytic Lesions”.

Although there were fewer papers submitted than in 2014, the general standard of the submissions remained at the commendably high level of recent years.

## SPONSORSHIP & PRIZES

The Section is pleased to offer limited awards and prizes in selected areas wherever our available financial resources permit, and subject always to our constitution and bylaws. During 2015 we supported the Endeavour program at the University of Melbourne, the Ingenius Awards and Exhibition at RMIT University, and the Engineering Awards program at La Trobe University. We expect to continue our sponsorship of these events during 2016.

Another recent initiative was the launch of a new Conference Travel Grant aimed at members working in Industry or Government, or otherwise employed outside the Academic and Research sectors. Our aim here is to encourage a greater degree of participation in IEEE conferences by our Industry members, consistent with the general

industry-engagement strategies of the Section. This award is still in an early stage of operation and may need further development, depending on the response received from eligible members.

## CONFERENCES

Several conferences and symposia in IEEE-related fields were held in Melbourne and elsewhere in the Section during 2015. Two such events are noted below.

**BDVA 2015.** The first IEEE International Symposium on “Big Data Visual Analytics...” was held at the CSIRO complex in Hobart, Tasmania, from 22<sup>nd</sup>-25<sup>th</sup> September 2015. IEEE Victorian Section was a Technical Co-Sponsor of this event. Further details are given in the Tasmanian Sub-Section review on page fourteen of this Annual Report.

**ICPADS 2015.** The 21<sup>st</sup> International Conference on Parallel and Distributed Processing was held at RMIT University, Melbourne, from 14<sup>th</sup>-17<sup>th</sup> December 2015. Sponsors were RMIT University and IEEE Computer Society and the conference was organised jointly by RMIT and The University of Melbourne.

## UPLINK

Three issues of the Section newsletter *Uplink* were published during 2015. This publication is one of our main channels of publicity and communication with the Section membership. We publish articles on technical, professional and historical topics likely to be of interest to Victorian Section readers; also reports on significant events and activities in the Section. .

*Uplink* is edited by Dr Alan Harvey and produced by Marie van der Klooster and other volunteers. Contributions to this publication are

always in demand, and photographs of interest to IEEE members are particularly welcome.

## PERSONNEL

During the year Mr Nissanga (Nishad) Mendis joined the Section Committee as Section Secretary, this position having been left unfilled since the last Section election. We also welcomed Mr Graeme Madigan as EMC Chapter Representative and Dr Sasan Adibi and Mr Sergio Freschi as members-at-large. Dr Adibi is a researcher in e-health, and we are very pleased to have a specialist in this burgeoning new field of technology on our committee.

Ms Annick Boghossian resigned as Computer Chapter Chair and has been granted 12 months leave of absence from the committee on maternity leave. We extend our best wishes to Ms Boghossian and thank her for her excellent work with the computer chapter. We look forward to her further involvement in Section affairs in the future.

## IEEE AUSTRALIA COUNCIL

IEEE Australia Council is a low-key confederation of the seven (7) IEEE Sections in Australia. The Council has no executive authority over its member entities, but it nevertheless plays an important role in inter-Section collaboration and the pursuit of common goals. During 2015 Victorian Section was very active in several areas of Council administration and policy development. Our contributions included the drafting of a new Rules and Guidelines document for the biennial student congress ANZSCON, a comprehensive re-drafting of the Council Bylaws, and proposing new formats for the annual reports and budgets of the Council. This active involvement is expected to continue in the future as an item of Section policy.

The Council meets infrequently – typically once

or twice per year – and conducts most of its business by regular teleconferences and email correspondence.

## IEEE REGION 10

The Annual General Meeting of IEEE Region 10 was held in Dhaka, Bangladesh, in March 2015. The Section was represented by Section Chairman Anthony Gascoigne. This meeting was largely routine in nature, but there were some interesting segments, notably the two presentations by Past R10 Directors Lawrence Wong and Janina Mazierska, who each raised matters of strategic importance for further consideration by attendees. We also heard brief electoral presentations by the two candidates for IEEE President-Elect 2016, Fred Mintzer and Karen Bartleson.

Apart from Regional business, the Dhaka visit also provided Australian delegates with an opportunity to convene as IEEE Australia Council. This was the only such face-to-face Council meeting held in 2015.

## INVITED VISIT TO MALAYSIA

In October 2015, Section Vice-Chair Dr Alan Harvey visited Kuala Lumpur at the invitation of the Circuits & Systems Chapter of IEEE Malaysia Section and later presented a seminar study on aspects of electronically-controlled magnetic bearings. This visit was arranged under the auspices of IEEE Region 10. On his return, Dr Harvey reported as follows:-

“I met and conferred with CAS Chapter Chair Dr Nurul Yunus and Professor Wan Yuha Hasan of University Putra, Malaysia (UPM), and later inspected the facilities of the university’s Department of Electrical and Electronics Engineering. UPM has a strong interest in microelectronics and integrated

circuits, and electrical engineering in general.

The next day I travelled by bus to Ipoh, about 220km away, accompanied by a large group from UPM. Our mission was to attend a traditional “High Tea” organised by the CASS Chapter. This event was actually a combination of technical and social activities. We commenced with two technical seminars, these were followed by a very lavishly-catered afternoon tea, and we closed with an informal discussion session.

I found that members of IEEE Malaysia Section were very keen to maintain contact with their counterparts in Victorian Section. And similarly, Malaysian universities are keen to collaborate with Australian universities and research institutions.” ■

## Financial Overview, 2015

**A summary of Victorian Section financial results for 2015 is set out in the Table below. Full details are given in the consolidated accounts appended to this annual report.**

We have also appended charts showing the income and expenditure profiles by category. In accordance with established business practice, all reported amounts are shown exclusive of GST where this tax is applicable.

Compared to 2014, the balance sheet shows a decrease in net assets of \$18,154, before the IEEE Headquarters reserve allocation is taken into account. Cash-at-bank decreased by \$26,317. The difference between net assets and cash reserves is largely due to our repayment of seed money for an international conference held in Melbourne, for which we were co-sponsors with the Computer Society Chapter of IEEE Malaysia Section.

large number of member-facing meetings, including a major WIE event. The smaller revenue was due to reduced earnings from conferences and lower bank interest rates.

The highlight of the year was the WIE Fashion Runway, which was the culmination of approximately a score of workshops covering aspects of wearable electronics.

Two other items are noteworthy. First, IEEE Headquarters has increased our 'Section Reserve Allocation' to \$30,804. This is the Section's notional contribution towards liabilities of the IEEE Staff Defined Benefits Pension Plan Fund. The allocated amount must be kept in reserve and cannot be spent by the Section.

The second matter concerns the IEEE Technology & Society in Asia conference held in Singapore in October 2012, which was co-sponsored by the Section. The financial accounts for this event have now been finalised, and the Section received a net cash return of \$474.

In summary, the Section supported a large number of activities in 2015 and ended the year with \$140,921 of unencumbered assets. ■

*Enn Vinnal*  
2015 Section Treasurer  
[e.vinnal@ieee.org](mailto:e.vinnal@ieee.org)

ITEM	Amount \$	% Change from 2014
Revenue	42,166	-34%
Expenditure	60,709	-6%
Operating surplus (deficit)	(18,543)	.....
Cash at bank	169,188	-13%
Bank interest earned	4,236	-35%
IEEE HQ rebates received	16,849	+29%
IEEE Reserve Allocation	30,804	+136%

Year-on-year, the profit & loss statement shows that expenditure fell by 6% and revenue reduced by 34%, compared to 2014.

The expenditure in 2015 was used to support a

## Tasmanian Sub-Section

*Our efforts to restore the Tasmanian Sub-Section to fully-operational status continue as a work-in-progress. Nevertheless, three (3) important IEEE events were held in Tasmania during 2015 and outline details follow.*

**2015-05-30:** This was a Beginners Lilypad Arduino Workshop, organised by our WIE Affinity Group and held at The University of Tasmania, Launceston Campus. The workshop was led by the Victorian Section WIE Chair, Dr Ee Hui Lim. There were about ten participants, including the Section's WIE representative in Tasmania, Ms Amanda Lunt. We much appreciate the assistance given by Amanda in organising and running this event, also, the ongoing support provided by Professor Henry Duh of UTAS.

**2015-09-23:** The "IEEE Symposium on Big Data Visual Analytics" was held in Hobart, Tasmania, from 22<sup>nd</sup>-25<sup>th</sup> September, 2015. This was possibly the first-ever IEEE event in this new field of computer science. It attracted an enthusiastic audience of specialists in the relevant fields, from both Australia and overseas. The symposium General Chair was Dr Ulrich Engelke of CSIRO. There were six (6) keynote speakers and a wide diversity of workshops and breakout sessions. The venue was the CSIRO harbour facility in Hobart.

Financial support for the symposium was provided by CSIRO and several other research organisations in Australia. IEEE Victorian Section was a Technical Co-Sponsor. In view of the success of this inaugural event, a sequel will be held in Brisbane, Queensland, in 2016. Further details are given on the BDVA website, [www.bdva.net](http://www.bdva.net).

**2015-10-02:** "A Practical Framework for the Implementation of the Vehicle-to-Grid (V2G)

Concept". This seminar was organised jointly by our PES Chapter and The University of Tasmania and held at the UTAS Hobart Campus. The presenter was Professor George Gross from the Institute of Government and Public Affairs at the University of Illinois at Urbana-Champaign. The abstract for Prof. Gross' talk outlined the nature and purpose of his topic:

"Continuing high gasoline prices and rising environmental concerns are key drivers in the growing interest in electric and plug-in hybrid vehicles. Car manufacturers throughout the world understand this trend quite well. For the 90 % of Americans who use their cars to get to work every day, the average daily commute distance is 45 km and the cars remain parked, on average, 22 hours each day. A salient feature that electric vehicles have in common is the battery, providing an energy storage capability that could be effectively utilised by the grid. We focus on the design of a conceptual framework to integrate electric vehicles into the grid – the so-called V2G concept. The basic premise is to treat battery vehicles as distributed energy resources that can act both as supply and demand entities..."

There were 54 attendees at this lecture. Thanks are due to Professor Michael Negnevitsky of UTAS for his assistance in organising this event. (Joint with UTAS Department of Electrical Engineering). ■





Reflections on still waters, Central Tasmania. PHOTO: EE HUI LIM



Amanda Lunt is the Section's WIE and Student representative at UTAS Launceston.





Recently appointed Section Secretary, Nishad Mendis.



IEEE EMC Society Distinguished Lecturer Dr John Norgard (seated, centre) with Rob Slaviero, Claudio Insaurralde, Mark Mifsud and Tony Gascoigne.

PHOTO: COURTESY R. SLAVIERO.



Adventures in electronics: WIE volunteer Bhasi demonstrates for some young enthusiasts.

PHOTO: IEEE-WIE VICTORIA.





WIE Chair Dr Ee Hui Lim speaks during the Energised Fashion Runway at RMIT University.

PHOTO: IEEE-WIE VICTORIA.



La Trobe University prize winner Alice Beckett with Victorian Section's Rob Slaviero.  
PHOTO COURTESY R.SLAVIERO.

## Chapters & Affinity Groups

### CIRCUITS & SYSTEMS/SOLID STATE CIRCUITS JOINT CHAPTER

During 2015, four technical seminars were presented.

**2015-03-25:** The first was on Electronic manufacturing in the 1960's and 70's by Dennis Hosken.

**2015-06-24:** The second talk was a History of Australian Broadcasting by Albert Isaacs.

**2015-10-21:** The third talk presented the CAS chair's experiences when working for Intel in Santa Clara, USA, in the mid-1980's.

**2015-12-14:** The final event for the year was a double bill presentation by guest Distinguished Lecturer Professor Charles Wang from UCAL, Irvine. Professor Wang spoke first on ESD Protection design for IC's, and secondly, on communications using LED light beams.

All the above talks were organised jointly with the Life Members Affinity Group, and all were held at RMIT University. We appreciate the assistance of RMIT in timetabling these events.

ALAN HARVEY, CAS Chapter Chair

### COMMUNICATIONS CHAPTER

In March 2015 Dr Paul Fitzpatrick stepped down as Chapter Chair and A/Prof Kandeepan Sithamparanathan (RMIT University) was appointed in his place. We extend our sincere thanks to Paul for his outstanding contributions over the past several years.

During the year we organised two (2) technical meetings, outline details as below.

**2015-04-24:** This was an invited talk by Dr. Tinku Rasheed from the CREATE-NET Research Centre

(Italy). Rasheed leads a research team working on 5G systems and his talk was titled "5G communications pathways to mobile network evolution" There were 27 attendees. Many probing questions were raised at the end of the presentation.

**2015-04-27:** Dr. Raymond Chan (Broadcom), well known for his work on speech predictive coding, shared his experiences as a signal processing researcher and engineer and explained the technical details of his various algorithms for speech coding. The venue was EA North Melbourne. (Joint with Signal Processing Chapter).

Late in 2015 I visited several research organisations in Europe and Singapore. Various discussions were held and we explored the options for bringing overseas researchers and engineers to Victoria. Several such visits are being organised for 2016.

We are pleased to report that a Petition to form an IEEE Comsoc Student Branch Chapter at RMIT was successful and the new subunit has been in operation since mid-2015. In a further new initiative, ComSoc Chapter has proposed sharing details of research student seminars from various universities in Victoria. RMIT University, The University of Melbourne and Monash University have agreed to collaborate in such a scheme.  
KANDEEPAN SITHAMPARANATHAN,  
ComSoc Chapter Chair

### COMPUTATIONAL INTELLIGENCE CHAPTER

During 2015 CIS Chapter organised or co-organised four (4) technical seminars.

**2015-04-10:** Panel Discussion: “The Future of Science & Technology Research under Defence Controls: a Forum on DTCB 2015”. Speakers from various backgrounds discussed key items of the Defence Trade Controls Act (DCTA). The venue was The University of Melbourne. (Joint with SSIT and Computer Chapters).

**2015-11-25:** “Non-Parametric Bayesian Networks in Uninet”.

**2015-11-26:** “Bayesian Methods in Bio-information and Ecology”

**2015-11-26:** “Common Quandaries and Their Practical Solution”.

All the above were held at Monash University, Clayton, and all were very well attended.

KEVIN KORB, CIS Chapter Chair

## COMPUTER CHAPTER

Our chapter organised or co-organised six (6) technical events during 2015, outline details as below.

**2015-02-25:** “Social Media & Cyber Racism”. The presenter was Dr Andre Oboler. There were twenty-three in attendance.

**2015-03-04:** “Is Basel Turning Banks into Public Utilities?”. This talk was presented by Mr John M. Schiff. There were twenty persons present.

**2015-04-10:** This was a Panel Discussion: “The Future of Science & Technology Research under Defence Controls: a Forum on DTCB 2015”. This event was organised jointly with the CIS and SSIT Chapters. There were nineteen (19) present.

**2015-06-04:** “Telemedicine and Remote Patient Monitoring – a Smartphone Perspective”. The speaker was Dr Sasan Adibi of Deakin University. There were five persons present. (Joint with EMBS Chapter).

**2015-06-27:** “E-Sewing Wearable Technology Hackathon”. This hands-on session was organised

jointly with the WIE Affinity Group. There were more than a dozen participants, together with several course leaders and supervisors.

**2015-09-10:** “SUS: Machine Understanding & Human Understanding”. This lecture was presented by Prof. Zbigniew Les. The venue was RMIT University and there were twelve attendees. ANNICK BOGHOSSIAN, CS Chapter Chair

## EDUCATION CHAPTER

The EdSoc Chapter organised two (2) technical lectures during 2015, summary details as below.

**2015-03-26:** “Dynamic (videotaped) Worked Examples in Student Learning”. This presentation was given by Professor Iouri Belski of RMIT University. It was an interesting account of Prof. Belski’s research applied to an undergraduate course in electronics.

**2015-04-27:** A Tour of Sparsity-Aware Learning Calling at: Online, Distributed, Robust, and Dictionary Learning”. Professor Serios Theodoridis DL/CSS.

PAUL JUNOR, Education Chapter Chair

## ELECTROMAGNETIC COMPATIBILITY CHAPTER

During 2015 the EMCS Chapter organised or co-organised three (3) Distinguished Lecturer seminars and also a one-day workshop.

**2015-05-14:** Distinguished Lecturer Professor John Norgard from NASA, provided an overview of space exploration and NASA’s past, present and future missions, with an emphasis on EMI problems and EMC solutions. The second part related to the Orion project, a prototype manned spacecraft for future NASA deep space exploration.

**2015-06-26:** Our chapter held a Workshop at the RACV Club in Bourke St. The invited speakers



included Martin Wiles from ETS Lindgren UK, Frank Demming from CST Germany, Andy Sayers from ElbitSystems Australia, Steve Philips from EMC Technologies and Mark Mifsud from Nova Systems. Topics included Aerospace Interoperability, CISPR Standards Update, Near-Field Radhaz Assessment in a Complex Environment, and Simulation for EMC Performance in Modern Electronics. (Joint with EMCSA).

**2015-12-01:** Distinguished Lecturer Prof. Ram Achar from Carleton University, Ottawa, Canada, presented a lecture titled “Demystifying Signal Integrity in High-Speed Designs”. The venue was RMIT University, Melbourne.

**2015-12-02:** This was a repeat of Prof. Achar’s presentation the previous day. The venue on this occasion was Deakin University, Waurin Ponds Campus (Geelong). (Joint with SMC Chapter and Deakin CISR).

MARK MIFSUD, EMC Chapter Chair

## ENGINEERING IN MEDICINE & BIOLOGY CHAPTER

In 2015 our program had the general theme, “Technical Innovations in Healthcare”. A total of nine (9) talks were organised and all were well received. The program included:

**2015.02.17:** “Emerging Cardiac Technology, clinical need and engineering evolution. Professor James Cameron Director, Monash Cardiovascular Research Centre.

**2015-03-17:** “Current Technological Innovations in Neuro-Engineering and Medical Bionics”. Professor Hugh McDermott, Deputy Director, Bionics Institute of Australia.

**2015.04.21:** “Current Technological Innovations in Reproductive Technology: the LifePod Artificial Placenta and Womb”. Dr Stephen Bird. Department of Obstetrics and Gynaecology, The

University of Melbourne

**2015-05-19:** “Current Innovations in Abdominal Transplantation”. Professor Robert Jones AM, Director of the Victorian Adult and Paediatric Liver Transplant Unit.

**2015-06-04:** “Telemedicine and Remote Monitoring – A Smartphone Perspective”. Dr Sasan Adibi, Deakin University, School of Information Technology, Burwood. (Joint with Computer Chapter).

**2015-05-16:** “Innovations in Replication of Human Anatomical Dissections by 3D Printing: Uses in Education and Research”. Professor Paul McMenamin, Director, Centre for Human Anatomy Education, Monash University.

**2015-07-21:** “Innovations in Critical Care: Stopping Patients Dying in Hospital – a Systems Engineering Approach”. A/Prof Chris Wright, Director, Clinical Programs, Monash University

**2015-08-18:** “Innovations in Applications of Technology to Prosthetics & Spinal Cord Injury”. A/Prof Andrew Nunn, Director, Victorian Spinal Cord Service.

**2015-09-15:** “Innovations in Applications of Skin Substitutes for Burn-Injured Patients”. Dr Heather Cleland, Head of Victorian Adult Burns Service, Alfred Hospital.

With the exception of Dr Adibi’s talk, all presentations were organised jointly with Engineers Australia and the Society for Medical and Biological Engineering (SMBE). During the year our chapter website ([embs.ieeevic.org](http://embs.ieeevic.org)) was completed and now lists details of past and upcoming events. Chapter members also receive regular program notices by email.

MEHRNAZ SHOUSHARIAN, EMBS Chapter Chair



## MICROWAVE THEORY & TECHNIQUES/ANTENNAS & PROPAGATION JOINT CHAPTER

During 2015 our chapter ran six (6) technical events. (No further details supplied, *Ed.*)

KAMRAN GHORBANI, MTT/AP Chapter Chair

## PHOTONICS/ELECTRON DEVICES JOINT CHAPTER

Our Chapter had six (6) technical meetings during 2015 (No further details supplied, *Ed.*)

MALIN PREMARATNE, Photonics Chapter Chair

## POWER & ENERGY CHAPTER

During 2015 the Victorian PES chapter ran five (5) events, summary details as follows:

**2015-04-08:** The first event was titled “NER Generator Compliance Requirements”, presented by Mr Tony Bertes, the discipline leader in generator testing at DigSILENT Pacific. The venue was RMIT University and there were 23 attendees.

**2015-05-11:** Our second event was “High Concentration Photovoltaic Converter Systems: from design to commercialisation”. The presenter was Simon Maan, Chief Technology Officer of Solar Systems. This event was held at RMIT University and there were 19 persons present. (Joint with TEMS Chapter).

**2015-10-02:** The third event was titled “A Practical Framework for the Implementation of the Vehicle-to-Grid (V2G) Concept”. Professor George Gross from the Institute of Government and Public Affairs at the University of Illinois at Urbana-Champaign described a conceptual framework for integrating electric road vehicles into the grid. The venue was The University of Tasmania, Hobart. There were 54 persons present.

(Joint with UTAS Department of Electrical Engineering).

**2015-10-09:** Our fourth event was a lunchtime seminar on, “The Influence of Distributed Generation Power Control Under Unbalanced Grid Voltage Conditions”. The presenter was Roozbeh Kabiri, a final year PhD candidate at RMIT University. It was held at RMIT University and there were 16 attendees.

**2015-12-15:** This was the Annual General Meeting of PES Chapter, held at The University of Melbourne. Apel Mahmud was elected as the incoming Chapter Chair for 2016, and Alan Goodrich as Vice-Chair.

I close by wishing my successor and his deputy every success. I will remain on the chapter executive as Immediate Past Chair.

JOSEPH LEUNG, PES Chapter Chair

## SIGNAL PROCESSING CHAPTER

We organised or co-organised five (5) meetings. (No further details supplied, *Ed.*)

KARIM SEGHOUANE, SPS Chapter Chair

## SYSTEMS, MAN & CYBERNETICS CHAPTER

During 2015 our chapter held twenty (20) technical seminars and one (1) tutorial workshop. A representative selection of these events appears below.

**2015-02-09:** “Neuromorphic approaches to computing acoustic information”, by Associate Professor Neil McLachlan. Attendance 31.

**2015-04-15:** “Non-Destructive Testing and Reliability Solutions for Utility Overhead Lines”. Dr. Jalal Kia. Attendance 26.

**2015-04-20:** “Aerial Robotics – future opportunities and challenges”, by Kelvin Hutchinson. Attendance 26.

**2015-04-28:** “Challenges and Innovations in Designing Lightweight Armour for Protected Vehicles and Critical Structures against Blasts and Impacts”. Dr Tuan Ngo. Attendance 40.

**2015-05-04:** “3D Spatial Environment and Precision GNSS Navigation for Machines”. Graeme Hooper. Attendance 40

**2015-07-01:** “Motion Sickness and Thermoregulation: from Humans to Rats and Back”. A/Prof Eugene Nalivaiko. Attendance 27.

**2015-09-07:** “Touch and Feel, the Human-Unreachable World: Haptic Devices and Rendering for Haptic-Based Teleoperation Systems”. Dr. Guanyang Liu. Attendance 25.

**2015-10-05:** “The Technology Response to the Bushfires Royal Commission – Using Technology to Reduce the Probability of Electricity Fire Starts”. Graeme McClure. Attendance 34.

**2015-12-02:** “Demystifying Signal Integrity in High-Speed Designs”. Prof. Ramachandra Achar. Attendance 21. (Jointly organised with TEMS Chapter).

**2015-12-04:** “Advanced Machine Learning for Big Data Analytics”. This tutorial workshop had five speakers: Prof Chandra Balasubramanian, Prof. Saeid Nahavandi, Dr Asim Bhatti, Dr Than Nguyen, and Dr Mohammed Anwar Hosen. Attendance 19

All but the last of the above events was held at the Centre for Intelligent systems Research, Deakin University, Waurn Ponds. The workshop was held at Deakin Burwood Campus.

SAEID NAHAVANDI, SMC Chapter Chair

## **SOCIAL IMPLICATIONS OF TECHNOLOGY, JOINT AUSTRALIAN CHAPTER**

During the year SSIT Chapter organised or co-organised a total of ten (10) events, located variously in Melbourne, Sydney and Brisbane.

Summary details are given below.

**2015-02-25:** Dr Andre Oboler spoke on, “Social Media & Cyber-Racism”. The venue was Monash University, Clayton. (Joint with Computer Chapter).

**2015-03-01:** Dr Greg Adamson spoke on “Future Challenges in Technology”, at the Future Day 2015 forum held in Melbourne, Victoria. The talk focused on three key aspects: the future of work; autonomous warfare; and human-machine boundaries.

**2015-03-16:** Dr Greg Adamson presented “An Introduction to Engineering Ethics”, to undergraduate engineering students at La Trobe University, Bundoora. (Organised jointly with La Trobe School of Engineering).

**2015-04-10:** Panel Discussion: “The Future of Science & Technology Research under Defence Controls: a Forum on DTCB 2015”. Speakers from various backgrounds discussed key items of the Defence Trade Controls Act (DCTA). The venue was The University of Melbourne. (Joint with CIS and Computer Chapters).

**2015-04-28:** Phillip Hall presented on “National Security and Remotely-Piloted Aircraft Systems (RPAS)”. The venue was The University of Melbourne, Parkville.

**2015-04-30:** This was a repeat of the above presentation by Phillip Hall, this time at The University of Sydney, NSW.

**2015-10-28:** This was a one-day workshop held at RMIT University, Melbourne, on the topic, “RFID: Past, Present & Future”. There were several presenters speaking from both research and industry viewpoints.

**2015-12-02:** Associate Professor Matthew Burke presented on, “Disruptive Technologies and Our Transport Future”. This seminar examined the likely developments in Australian transportation up to the year 2030 and beyond. The venue was

Griffith University, Southbank Campus, Brisbane.

**2015-12-10:** This was a panel discussion on the theme, “We’re all Data Now: What Big Data Could Mean for Law & Public Policy”. The event was held at the University of New South Wales, Sydney. (Jointly sponsored by IEEE SSIT Australia, UNSW Law, and others).

**2015-12-17:** A seminar, “Workshop on Health and Engineering” was held at UNSW, Sydney. There were four presentations covering a range of topics, including business insights into cancer research.

MICHAEL RIGBY, SSIT Chapter Secretary

## TECHNOLOGY & ENGINEERING MANAGEMENT CHAPTER

TEMS chapter organised or co-organised four (4) technical events during 2015.

**2015-05-11:** “Dense Array High Concentration Photovoltaic Converter Systems: from design to commercialisation”, presented by Mr. Simon Maan, Solar Systems Chief Technology Officer. The venue was the EA Auditorium in North Melbourne. There were 19 attendees. (Joint with PES Chapter and Engineers Australia).

**2015-05-15:** “NASA ~ Past/Present/Future Missions and Space Exploration: EMI/EMC Problems and Solutions”, by IEEE Distinguished Lecturer Dr John Norgard, Chief Engineer for Electromagnetic Environmental Effects (E3) at NASA/JSC. The first part of this talk was an overview of past space exploration ventures, with an emphasis on EMI problems and EMC solutions. The second part described the Orion project, a prototype manned spacecraft for future NASA deep space exploration. The venue was the EA Auditorium. There were 110 attendees including 35 IEEE members. (Joint with EMC Chapter and co-sponsored by EA and IET).

**2015-07-20:** This workshop, “From Engineer to Manager - Mastering the Transition”, was

conducted by Claudio Insaurralde, a Reliability Consultant, member of the IEEE Region 10 Industry Relations Committee, and TEMS Chapter Chair. It was a two-day workshop aimed at developing leadership and management skills in young professional engineers. The venue was The University of Melbourne and there were 34 registrants. (Joint with Young Professional Affinity Group and The University of Melbourne IEEE Student Branch).

**2015-08-30:** This was the second day of the “From Engineer to Manager ...” workshop, as noted above.

CLAUDIO INSAURRALDE, TEMS Chapter Chair

## VEHICULAR TECHNOLOGY CHAPTER

VTs Chapter organised three (3) technical meetings in 2015, outline details below.

**2015-04-17:** “Compressive Co-variance Sensing for Enhancing access to Wireless Spectrum”, by Prof. Zhi.

**2015-07-29:** “The New Trends in Electric Vehicles”, presented by Dr Mehran Ektesabi, Swinburne University of Technology. This event was held at The University of Melbourne. There were 20 persons present.

**2015-11-13:** “Smart Energy Management in Wireless Networks with Harvested Energy”. The presenter was Prof Zhisheng Niu. The event was held at La Trobe University, Bundoora. There were 18 persons present.

MEHRAN EKTESABI, VTS Chapter Chair

## LIFE MEMBERS AFFINITY GROUP

We organised three (3) technical meetings and one Group General Meeting during 2015.

**2015-03-25:** “Electronics Manufacturing in

Australia in the 1960s and 1970s”, presented by Dennis Hosken.

**2015-06-24:** “The History of Australian Broadcasting”. The presenter was amateur historian Albert Isaacs.

**2015-06-29:** This was a group visit to the Australian Synchrotron in Clayton, Vic. On arrival, we were briefed by speakers from the facility.

**2015-07-20:** This was the Annual General Meeting of our Group. We elected the incoming officers for 2016 and had a general discussion about topics for the coming year. At the conclusion, we adjourned to a local public house for a convivial meal together.

**2015-10-21:** “Working with Intel in Silicon Valley”. This interesting talk was presented by Dr Alan Harvey, who described his experiences during a 6-month engagement at Intel on sabbatical leave from RMIT.

All the above events were organised jointly with CAS Chapter and held at RMIT University, except the visit to the Synchrotron.

KEITH ADAMS, Past Chair, Life Member Affinity Group.

## YOUNG PROFESSIONALS AFFINITY GROUP

During 2015 we hosted or co-hosted four (4) technical events.

**2015-07-20:** This workshop, “From Engineer to Manager - Mastering the Transition”, was conducted by Claudio Insaurralde, a Reliability Consultant and Chair of TEMS Chapter. It was a two-day workshop. (Joint with TEMS Chapter and UniMelb IEEE Student Branch).

**2015-08-30:** This was the second day of the above workshop.

**2015-10-17:** This was the first day of our 2-day

workshop on the Python Programming Language.

**2015-10-18:** This was the second day of the Python workshop.

LEILA KOUSHAEIAN, YP Affinity Group Chair

## WOMEN IN ENGINEERING AFFINITY GROUP

The WIE Affinity Group organised 18 events in 2015, including a series of Wearable Technology Workshops held at various Universities, Colleges and Schools across Melbourne, regional Victoria and Tasmania. We also ran a very well-attended E-Sewing Hackathon at RMIT University. We were successful in obtaining financial support from the National Science Foundation and IEEE Region 10. And our activities in general have opened doors to many collaborative and outreach opportunities for the future. A consolidated list of WIE events for the year is given below.

**2015-01-21:** Lilypad Arduino Beginners Workshop at RMIT University.

**2015-02-28:** Lilypad Arduino Beginners Workshop at RMIT University.

**2015-03-28:** Lilypad Arduino Beginners Workshop at Monash University.

**2015-04-9:** Lilypad Arduino Beginners Workshop at Monash University.

**2015-04-18:** Advanced Lilypad Arduino workshop at RMIT University.

**2015-05-23:** Beginners and Advanced Lilypad Arduino workshop at RMIT University.

**2015-05-30:** Beginners Lilypad Arduino workshop at UTAS, Launceston campus.

**2015-06-10:** Beginners Lilypad Arduino workshop and visit to CSIRO at Deakin University, Waurn Ponds campus.

**2015-06-17:** Beginners Lilypad Arduino workshop at Academy of Design Australia (AoDA).

**2015-06-20:** Beginners and Advanced Lilypad

Arduino workshop at Melbourne University.

**2015-06-27:** “E-Sewing Hackathon”.

**2015-06-30:** Monash ENGenuity Program.

**2015-07-22:** Beginners and Advanced Lilypad Arduino workshop at Swinburne University of Technology.

**2015-08-09:** Open Day Wearables Workshop at the Academy of Design Australia.

**2015-08-22:** “Energised Fashion Runway” at RMIT University.

**2015-10-08:** Over the period to 5th November we ran a series of five classes on Wearable projects for students at Preshill High School.

**2015-10-21:** ThoughtLAB-14 – “Back to the Future” Panel Discussion. This was a collaboration with the Carlton Connect group on the subject of wearable technology and included an exhibition.

**2015-23-11:** Wearable Technology workshop at the Australian Biomedical Engineering Conference held at The University of Melbourne.

EE HUI LIM, WIE Affinity Group Chair. ■

## Student Branches

### DEAKIN UNIVERSITY STUDENT BRANCH

During 2015 our IEEE Student Branch organised the following activities:

**2015-03-03:** The IEEE DUSB had a large stand at the Deakin clubs and societies Market Day. We organised competitions and activities to engage potential members. Many new members signed up.

**2015-04-20:** This was a Welcome BBQ followed by a site visit through Deakin University's Centre for Intelligent Systems Research. We had all current IEEE DUSB student members attend. The site visit inspired some members to undertake final year project work with CISR.

**2015-08-04:** "3D Printing 101: From Idea to Physical Part". This 3.5 hour workshop was a great success, with over 30 people in attendance. Topics covered included, "What is 3D Printing?"; "What Technologies and Print Qualities are Available?"; "3D Part Design Using Autodesk"; "Practical 3D Printing". The success of this event has motivated us to repeat it in 2016.

**2015-06-10:** Beginners Lilypad Arduino workshop and visit to CSIRO at Deakin University Waurn Ponds campus. (Joint event with WIE Affinity Group).

KRISTAN MARLOW, Chair, Deakin University Student Branch

### LA TROBE UNIVERSITY STUDENT BRANCH

During 2015 LTUSB organised ten (10) technical and social activities. Outline details are given below.

**2015-03-18:** Games Programming Workshop, conducted by James Hegedus and Tom Wright. There were ten (10) participants per session and

nine (9) sessions overall.

**2015-03-23:** Engineering & Technology BIG BBQ. This was held on the Grass Lounge in the Student Hub. There were about 50 present.

**2015-05-26:** MATLAB Tutorial, conducted by Andrew Martchenko. There were 10 attendees.

**2015-06-30:** Solidworks Tutorial 1. This tutorial was led by Adam Console. There were 20 participants.

**2015-07-01:** Solidworks Tutorial 2. This was the sequel to Part I held the previous day, with presenter and attendance unchanged.

**2015-08-19:** Industry tour to Cablex Pty Ltd in East Bentleigh. We were briefed on site by Ms Heidi Krebs of Cablex. There were twenty (20) La Trobe students present.

**2015-09-22:** Engineering Career Options Forum. Presenters included representatives from Metro Trains, Australian Defence, Cablex Pty Ltd., Mondelez International, and three staff members from La Trobe. There were 40 attendees.

**2015-09-23:** Annual Networking Dinner. This event was held at the Eagle Bar, La Trobe University. There were 150 present.

**2015-10-24:** IEEEExtreme Programming Competition (held in the Beth Gleeson Building). There were 9 participants in this competition.

**2015-11-13:** "Smart Energy Management in Wireless Networks with Harvested Energy". This lecture was presented by Prof. Ahisheug Niu. The venue was The Undercroft Lecture Theatre, La Trobe University. There were 10 attendees.

MATTHEW FELICETTI, Chair, La Trobe University Student Branch



## MONASH UNIVERSITY STUDENT BRANCH

During 2015 we organised fifteen (15) events and selected items are noted below. Further details are given in our Student Branch Annual Report.

**2015-02-24 (to 28):** During Orientation Week, we ran an information desk to promote IEEE to new undergraduates and postgraduates and to attract new volunteers for the student branch.

**2015-03-20:** This was a seminar on Final Year Projects (FYP) conducted by Moses Wan, Ashan Senevirathne, and Boon Shen Loh. The speakers related some of the “success stories” of past student endeavours and gave general advice on FYP requirements. We received very positive feedback from this seminar.

**2015-03-27:** This BBQ was aimed particularly at undergraduates to encourage them to volunteer with IEEE; also to promote awareness of the duties and responsibilities associated with student branch operation.

**2015-04-30:** Altium Designer Workshop. Due to popular demand, this was a repeat of the workshop held last year (2014). The course leaders were Monash postgraduate students Simon Kennedy, Dilpreet Buxi and Moses Wan.

**2015-07-21:** Dr. Isaac Balbin, who completed his entire tertiary education at Monash University, gave an inspirational talk on “From Doctor to Director: An Alumnus’ Successful Startup Story”.

**2015-08-10 (to 12):** This was a Career Development Program where we heard several presentations aimed at helping students to identify career pathways and providing advice in pursuing their personal goals.

**2015-09-14:** This was a workshop on web development to teach interested students the basic building blocks of website construction. It was

conducted by Moses Wan. We received very good feedback for this workshop.

**2015-09-25:** “Life in Academia”. Prof. Jamie Evans, Head of the ECSE Department, gave a very interesting talk on his professional career. This presentation was very popular and about 50 persons attended.

**2015-11-06:** This was a workshop on CST MICROWAVE STUDIO (CST MWS), a specialist tool for 3D electromagnetic simulation, used in the design of high frequency components. The workshop was conducted by Dr. Frank Demming.

**2015-12-10:** At our Annual General Meeting we heard brief reports on Student Branch activities in 2015. We also held an election for all positions on the 2016 SB Committee.

Apart from the foregoing events, we collaborated in a new Mentoring program for postgraduate students. The objective is to help recent postgraduates settle in to their research environment at Monash. This new initiative was introduced at the instance of ECSE Head of Department Prof. Jamie Evans. Detailed organisation during 2015 was by senior postgrads Dilpreet Buxi and Harish Vangala. The program has received very good feedback to date and we plan to continue it in 2016.

AMANTHI THUDUGALAGE, Chair, Monash University Student Branch

## RMIT UNIVERSITY STUDENT BRANCH

There were no reported activities by RMIT Student Branch during 2015 (*Ed.*)

## SWINBURNE UNIVERSITY OF TECHNOLOGY STUDENT BRANCH

No report was received from this Student Branch (*Ed.*)

## UNIVERSITY OF MELBOURNE STUDENT BRANCH

Our Student Branch organised or co-organised twenty (20) events during 2015. Selected details of our program are given below.

**2015-03-26:** “How to Start a PhD Study and How to Win PhD Scholarships”. This seminar was organised to give undergrad and masters students some insights into PhD studies at UniMelb.

**2015-05-07:** “Finding Your Dream Job”. This was the first of a five-part series for the year in the university’s Career Development Program. These presentations outlined the key factors in Recruitment from the employer perspective, in various industries and sectors.

**2015-05-29:** This was a field visit to NBN Co’s Network Operations and Test Facility. We gained an insight into the operations of the Australian National Broadband Network. A total of twenty-four (24) students attended this tour, in two 1-hour sessions.

**2015-06-19:** We participated in a Wearable Electronics Workshop organised by the Victorian Section WIE Affinity Group. We learned how embedded technology can be creatively applied to fashion design.

**2015-07-29:** “New Trends in Electric Vehicles”. In this seminar, Dr Mehran Ektesabi of Swinburne University of Technology discussed aspects of AC motor technologies and the latest design concepts and system architectures for electric road vehicles. (Joint with VTS Chapter).

**2015-07-30:** “From Engineer to Manager, Mastering the Transition”. This workshop was led by Claudio Insaurralde, Chair of TEMS Chapter. Various aspects of management were discussed and the audience had a chance to practice the applicable skills in interactive role-play. (Joint with Young Professionals Affinity Group).

**2015-10-06:** “An Engineering Student for a Day” This seminar was organised by our UniMelb WIE Affinity Group to highlight the importance of having women in the engineering profession. It was attended by 30 students.

**2015-10-06:** “IEEE Day 2015”. This event was part of the global celebrations marking the achievements of IEEE members. Two IEEE Ambassadors were selected from Australia to promote the event beforehand.

**2015-10-15:** “Work –Life Balance in Engineering”. In this lecture, A/Prof. Valerie Francis discussed aspects of work-life conflict, with particular reference to research carried out in the construction industry.

Finally, in July 2015 we were very pleased to have four representatives from our student branch attend the R10-SYW Congress in Sri Lanka.

GITANSH KHIRBAT, Chair, The University of Melbourne Student Branch.

## VICTORIA UNIVERSITY STUDENT BRANCH

We organised two (2) technical seminars during 2015.

**2015-02-16:** “Storage and Triggered Release from Ultra-Porous Materials”. This lecture was presented by Dr Matthew R. Hill of CSIRO Materials Science and Engineering, Clayton, Vic. Dr Hill was the Prime Minister’s Physical Scientist of the Year in 2014. His presentation was followed by an extended general discussion.

**2015-03-09:** “Research and Development in Optical Fibre Sensors for Various Industrial Applications”. The speaker was Professor Kenneth Grattan of City University, London, UK.

MARZIYEH NAZARI, Chair, VU Student Branch. ■



## FINANCIAL ACCOUNTS

### I. Consolidated Operating Statement, 2015 (calendar year)

ITEM	2015 \$	2014 \$
<b>REVENUE</b>		
Meetings & social	1917	4303
Conferences/workshops	9977	29,096
Student activities	229	600
Sections Congress subsidies	0	4172
Rebate from IEEE HQ	16,849	13,095
IEEE societies	4636	1959
IEEE Region 10	3148	939
IEEE Australia Council	700	1950
Bank interest	4236	6475
Miscellaneous receipts	474	1432
<b>TOTAL REVENUE:</b>	<b>42,166</b>	<b>64,021</b>
<b>EXPENDITURE</b>		
Meetings & social	15,376	18,920
Conferences/workshops	17,842	23,965
Student activities	4771	5930
Sections Congress expenses	3618	3757
Grants & awards	10,946	5432
Travel & accommodation	3283	5199
IEEE Australia Council levies	1647	0
Postage, printing, miscellaneous	3227	1623
<b>TOTAL EXPENDITURE:</b>	<b>60,709</b>	<b>64,826</b>
<b>SURPLUS (DEFICIT):</b>	<b>(18,543)</b>	<b>(805)</b>

## FINANCIAL ACCOUNTS (cont'd)

## II. Balance Sheet as at 31 December 2015

ITEM	2015 \$	2014 \$
<b>ASSETS</b>		
Cash & cash equivalents	169,188	195,505
Accounts receivable	1885	1000
Loans receivable	0	4111
GST tax credits	1141	1682
<b>TOTAL ASSETS:</b>	<b>172,214</b>	<b>202,298</b>
<b>LIABILITIES</b>		
Accounts payable	342	0
Loans repayable	0	10,000
ATO creditors	147	1929
Other creditors	0	490
<b>TOTAL LIABILITIES:</b>	<b>489</b>	<b>12,419</b>
<b>NET ASSETS:</b>	<b>171,725</b>	<b>189,879</b>
<b>RESERVES</b>		
Provisions – doubtful debts	0	4111
IEEE – Section Reserve Allocation	30,804	13,072
<b>NET ASSETS LESS RESERVES:</b>	<b>140,921</b>	<b>172,696</b>

**FINANCIAL ACCOUNTS** (cont'd)**III. Cash Flow Statement**

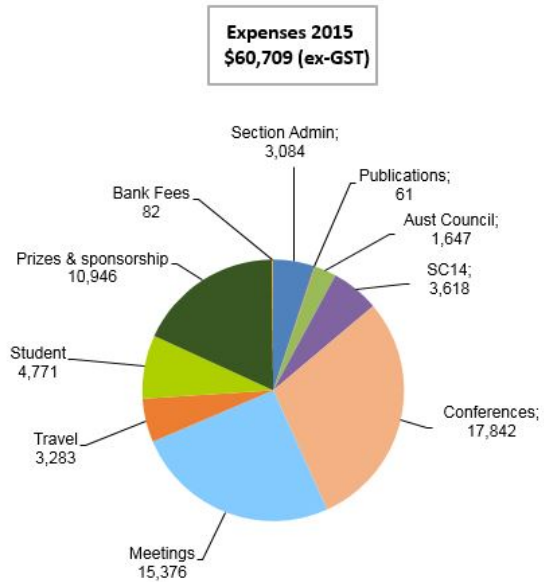
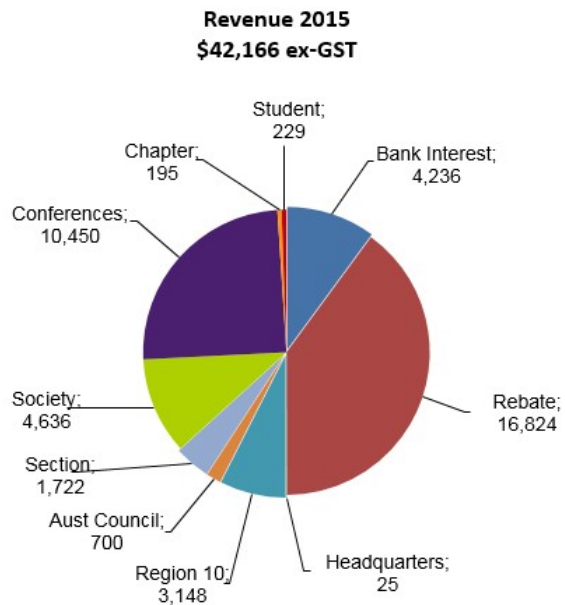
ITEM	2015 \$	2014 \$
<b>OPERATING CASH PROFILE</b>		
Cash from (to) Section activities	(59,997)	(9385)
IEEE HQ rebates	16,849	13,095
IEEE – other receipts	8484	9020
Bank interest	4236	6475
Loan receipts (payments)	4111	(10,000)
<b>NET CASH INFLOW (OUTFLOW):</b>	<b>(26,317)</b>	<b>9205</b>
<b>CASH RECONCILIATION</b>		
Cash at start of year	195,505	186,300
Cash at end of year	169,188	195,505
<b>NET CHANGE IN CASH HELD:</b>	<b>(26,317)</b>	<b>9205</b>

## GENERAL NOTES TO ACCOUNTS

1. These are unaudited accounts
2. All GST-bearing receipts and expenses are shown ex-GST

FINANCIAL ACCOUNTS (cont'd)

IV. Analysis of Revenue and Expenditure



## SECTION & CHAPTER OFFICERS, 2015

### Section Officers:

**Anthony E. Gascoigne** – Chair, IEEE Victorian Section, [aeg@gnsassoc.com.au](mailto:aeg@gnsassoc.com.au)

**Alan L. Harvey** - Vice-Chair, IEEE Victorian Section, Email: [acupak00@hotmail.com](mailto:acupak00@hotmail.com)

**Enn Vinnal** - Treasurer, IEEE Victorian Section, Email: [e.vinnal@ieee.org](mailto:e.vinnal@ieee.org)

**Nissanga (Nishad) Mendis** - Secretary, IEEE Victorian Section, Email:

### Chapter & Affinity Group Officers:

**Alan Harvey** - Circuits and Systems / Solid-State Circuits Societies Chapter Chair, Email: [acupak00@hotmail.com](mailto:acupak00@hotmail.com)

**Kandeepan Sithamparanathan** - Communications Society Chapter Chair, Email:

**Annick Boghossian** - Computer Society Chapter Chair, Email: [annick.n.boghossian@ieee.org](mailto:annick.n.boghossian@ieee.org)

**Kevin Korb** - Computational Intelligence Society Chapter Chair, Email: [kevin.korb@monash.edu.au](mailto:kevin.korb@monash.edu.au)

**Paul Junor** - Education Society Chapter Chair, Email: [p.junor@latrobe.edu.au](mailto:p.junor@latrobe.edu.au)

**Mark Mifsud** - Electromagnetic Compatibility Society Chapter Chair

**Mehrnaz Shoushtarian** - Engineering in Medicine & Biology Society Chapter Chair, Email: [mehrnaz.shoushtarian@gmail.com](mailto:mehrnaz.shoushtarian@gmail.com)

**Kamran Ghorbani** - Microwave Theory & Techniques/ Antennas & Propagation Societies Chapter Chair, Email: [kamran.ghorbani@rmit.edu.au](mailto:kamran.ghorbani@rmit.edu.au)

**Malin Premaratne** - Photonics/ED Societies Chapter Chair, Email: [malin@ieee.org](mailto:malin@ieee.org)

**Joseph Leung** - Power & Energy Society Chapter Chair, Email:

**Karim Seghouane** - Signal Processing Society Chapter Chair, Email: [karim.seghouane@unimelb.edu.au](mailto:karim.seghouane@unimelb.edu.au)

**Lidia Bennett-Moses** – Society on Social Implications of Technology Chapter Chair, Email:

**Saeid Nahavandi** - Systems Man & Cybernetics Society Chapter Chair, Email: [saeid.nahavandi@deakin.edu.au](mailto:saeid.nahavandi@deakin.edu.au)

**Claudio Insaurralde** - Technology Management Council Chapter Chair, Email: [c.insaurralde@ieee.org](mailto:c.insaurralde@ieee.org)

**Mehran Ektesabi** - Vehicular Technology Society Chapter Chair, Email: [mektesabi@swin.edu.au](mailto:mektesabi@swin.edu.au)

**Keith Adams** - Life Members Affinity Group Chair: [wortel30@gmail.com](mailto:wortel30@gmail.com)

**Leila Koushaeian** - Young Professionals Affinity Group Chair, Email: [leila.koushaeian@ieee.org](mailto:leila.koushaeian@ieee.org)

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## CONSOLIDATED LIST OF TECHNICAL EVENTS, 2015

2015-01-31 LilyPad Arduino Workshop - VICTORIAN WOMEN IN ENGINEERING AFFINITY GROUP

2015-02-09 IEEE SMC - Victorian Chapter Event 1 - VICTORIAN SMC28 CHAPTER

2015-02-11 IEEE SMC - Victorian Chapter Event 2 - VICTORIAN SMC28 CHAPTER

2015-02-17 Current Innovations in Cardiovascular Technology: Emerging Cardiac Technolog...

2015-02-25 Social Media & Cyber-Racism - VICTORIAN C16 CHAPTER

2015-02-28 LilyPad Arduino Workshop - VICTORIAN WOMEN IN ENGINEERING AFFINITY GROUP

2015-03-.01 Future challenges in technology - VICTORIAN SIT30 CHAPTER

2015-03-02 IEEE SMC - Victorian Chapter Event 3 - VICTORIAN SMC28 CHAPTER

2015-03-04 Is Basel Turning Banks into Public Utilities? - VICTORIAN C16 CHAPTER

2015-03-16 An introduction to Engineering Ethics - VICTORIAN SIT30 CHAPTER

2015-03-17 Current Technological Innovations in Neuroengineering and Medical Bionics - ...

2015-03-24 Fluorescent nanoparticles for bioimaging applications - VICTORIAN ED15/PHO36...

2015-03-25 Australian Electronics Manufacture in the 1960s and 70s - VICTORIAN CAS0...

2015-03-26 Dynamic (Videotaped) Worked Examples in Student Learning - VICTORIAN E25 CHA...

2015-03-28 LilyPad Arduino Workshop - VICTORIAN WOMEN IN ENGINEERING AFFINITY GROUP

2015-03-30 IEEE SMC - Victorian Chapter Event 4 - VICTORIAN SMC28 CHAPTER

2015-04-08 NER Generator Compliance Requirement - VICTORIAN PE31 CHAPTER

2015-04-09 LilyPad Arduino Workshop - VICTORIAN WOMEN IN ENGINEERING AFFINITY GROUP

2015-04-10 The Future of Science & Technology Research under Defence Controls: A Forum ...

2015-04-17 Compressive Covariance Sensing for Enhancing Access to Wireless Spectrum - ...

2015-04-18 LilyPad Arduino Advanced Workshop - VICTORIAN WOMEN IN ENGINEERING AFFINITY .

2015-04-20 IEEE SMC - Victorian Chapter Event 6 - VICTORIAN SMC28 CHAPTER

2015-04-21 Current Technological Innovations in Reproductive Technology: the LifePod Ar...

2015-04-27 A Tour of Sparsity-Aware Learning Calling at: Online, Distributed, Robust an...

2015-04-27 Significantly Enhanced Audio Experience via Signal Processing for Extreme No...

2015-04-28 IEEE SMC - Victorian Chapter Event 8 - VICTORIAN SMC28 CHAPTER

2015-04-28 National Security and Remotely Piloted Aircraft Systems (RPAS) - VICTORIAN S...

2015-04-30 National Security and Remotely Piloted Aircraft Systems (RPAS) - VICTORIAN S...

2015-05-04 IEEE SMC - Victorian Chapter Event 7 - VICTORIAN SMC28 CHAPTER

2015-05-04 Sensor and Social Networks: A Case for Topological Data Analysis - VICTORIAN...

2015-05-11 'Dense Array' High Concentration Photovoltaic Converter Systems: from desig...

## TECHNICAL EVENTS (cont'd)

- 2015-05-14 Confessions of a Serial Entrepreneur: 30 Years of Photonics Startups in Acad...
- 2015-05-14 Technical talk - VICTORIAN AP03/MTT17 CHAPTER
- 2015-05-14 NASA: Past/Present/Future Missions & Space Exploration: EMI/EMC Problems/Sol...
- 2015-05-19 Innovations in Abdominal Transplantation - VICTORIAN EMB18 CHAPTER
- 2015-05-23 LilyPad Arduino Worksho - VICTORIAN WOMEN IN ENGINEERING AFFINITY GROUP
- 2015-05-30 LilyPad Arduino Worksho - VICTORIAN WOMEN IN ENGINEERING AFFINITY GROUP
- 2015-06-01 IEEE SMC - Victorian Chapter Event 9 - VICTORIAN SMC28 CHAPTER
- 2015-06-04 Telemedicine and Remote Monitoring – A Smartphone Perspective - VICTORIAN ...
- 2015-06-10 LilyPad Arduino Workshop - VICTORIAN WOMEN IN ENGINEERING AFFINITY GROUP
- 2015-06-16 Innovations In Replication of Human Anatomical Dissections by 3D Printing: u...
- 2015-06-17 LilyPad Arduino Workshop - VICTORIAN WOMEN IN ENGINEERING AFFINITY GROUP
- 2015-06-20 LilyPad Arduino Workshop - VICTORIAN WOMEN IN ENGINEERING AFFINITY GROUP
- 2015-06-24 History of Australian Broadcasting - VICTORIAN CAS04 CHAPTER
- 2015-06-26 EMC Society Workshop 2015 - VICTORIAN EMC27 CHAPTER
- 2015-06-27 E-Sewing/Wearable Technology Hackathon - VICTORIAN C16 CHAPTER
- 2015-06-29 Visit to the Australian Synchrotron - VICTORIAN LIFE MEMBER AFFINITY GROUP
- 2015-06-30 IEEE SMC - Victorian Chapter Event 10 - VICTORIAN SMC28 CHAPTER
- 2015-06-30 LilyPad Arduino Workshop - VICTORIAN WOMEN IN ENGRG. AFFINITY GROUP
- 2015-07-01 IEEE SMC - Victorian Chapter Event 11 - VICTORIAN SMC28 CHAPTER
- 2015-07-13 IEEE SMC - Victorian Chapter Event 12 - VICTORIAN SMC28 CHAPTER
- 2015-07-20 AGM - VICTORIAN LIFE MEMBER AFFINITY GROUP
- 2015-07-21 Innovations in Critical Care: Stopping Patients Dying In Hospital – A Syst...
- 2015-07-22 LilyPad Arduino Workshop - VICTORIAN WOMEN IN ENGINEERING AFFINITY GROUP
- 2015-07-29 VTS - guest speaker - title “The new trends in electric vehicles” - VICT...
- 2015-07-30 From Engineer to Manager Mastering the Transition - Part 1 - VICTORIAN TM14 ...
- 2015-08-03 IEEE SMC - Victorian Chapter Event 13 - VICTORIAN SMC28 CHAPTER
- 2015-08-07 Microwave Engineering: What is it, where is it headed, and how it serves the...
- 2015-08-09 Wearable Technology Workshop at Academy of Design Australia Open Day - VICTO...
- 2015-08-18 Innovations In Applications Of Technology To Prosthetics & Spinal Cord Injur...
- 2015-08-20 UWB Antennas for Wireless Communication and Detection Applications - VICTO...
- 2015-08-20 From Engineer to Manager Mastering the Transition - Part 2 - VICTORIAN TM14 ...
- 2015-08-22 Energised Fashion Runway - VICTORIAN WOMEN IN ENGINEERING AFFINITY GROUP
- 2015-09-07 IEEE SMC - Victorian Chapter Event 14 - VICTORIAN SMC28 CHAPTER

**TECHNICAL EVENTS (cont'd)**

- 2015-09-07 3D Shape analysis using Reimannian elastic metrics - VICTORIAN SP01 CHAPTER
- 2015-09-10 SUS: Machine Understanding and Human Understanding - VICTORIAN C16 CHAPTER
- 2015-09-14 Case studies in Modelling collective cell motion in biology - VICTORIAN ED15...
- 2015-09-15 Innovations in Applications of Skin Substitutes for Burn-Injured Patients - ...
- 2015-09-21 IEEE SMC - Victorian Chapter Event 15 - VICTORIAN SMC28 CHAPTER
- 2015-09-28 25 Years of Audio Coding: How we arrived at audio playback on iPhone and its...
- 2015-10-02 A Practical Framework for the Implementation of the Vehicle-to-Grid (V2G) Co...
- 2015-10-03 IEEE SMC - Victorian Chapter Event 16 - VICTORIAN SMC28 CHAPTER
- 2015-10-09 The Influence of Distributed Generation Power Control on Unbalanced Grid Vol...
- 2015-10-17 Python Programming workshop 1 - VICTORIAN YP AFFINITY GROUP...
- 2015-10-18 Python Programming workshop 2 - VICTORIAN YOUNG PROFESSIONALS AFFINITY GROUP...
- 2015-10-21 "Working with Intel in Silicon Valley", talk given by Alan Harvey - VICTO...
- 2015-10-27 Convex Optimisation for Optimal Design and Analysis of Small Antennas - VICT...
- 2015-10-28 RFID: Past, Present and Future - VICTORIAN AP03/MTT17 CHAPTER
- 2015-11-02 IEEE SMC - Victorian Chapter Event 17 - VICTORIAN SMC28 CHAPTER
- 2015-11-13 VTS - DL speaker - "Smart Energy Management in Wireless Networks with Harve...
- 2015-11-13 METAMATERIAL-BASED ELECTROMAG. SPACE, TIME AND SPACETIME DISPERSION ENGL...
- 2015-11-23 Wearable Technology Workshop at Australian Biomedical Engineering Conference...
- 2015-11-25 IEEE Victoria CIS Seminar: Non-parametric Bayesian networks in Uninet - VICT...
- 2015-11-26 IEEE Victoria CIS Seminar: Bayesian methods in bioinformatics and ecology - ...
- 2015-11-26 IEEE Victoria CIS Seminar: Common quandaries and their practical solutions i...
- 2015-12-02 IEEE SMC - Victorian Chapter Event 18 - VICTORIAN SMC28 CHAPTER
- 2015-12-02 Presentation: Demystifying Signal Integrity in High-Speed Designs - VICTORIA...
- 2015-12-02 Disruptive Technologies and Our Transport Future - VICTORIAN SIT30 CHAPTER
- 2015-12-03 Wearable Technology Workshop at Device and Technology Teachers' Association ...
- 2015-12-03 IEEE SMC - Victorian Chapter Event 19 - VICTORIAN SMC28 CHAPTER
- 2015-12-04 IEEE SMC - Victorian Chapter Event 20 - VICTORIAN SMC28 CHAPTER
- 2015-12-10 We're all Data Now: What Big Data Could Mean for Law & Policy - VICTORIAN ...
- 2015-12-14 IEEE SMC - Victorian Chapter Event 21 - VICTORIAN SMC28 CHAPTER
- 2015-12-14 ESD + RFIC Co-Design - VICTORIAN ED15/PHO36 CHAPTER
- 2015-12-14 Advances in ESD Protection for Design for IC's and Systems - VICTORIAN CAS04...
- 2015-12-14 LED-based Visible Light Communications and Positioning - VICTORIAN CAS04 CHA...
- 2015-12-17 Workshop on Health and Engineering - VICTORIAN SIT30 CHAPTER



