

2018 IEEE Singapore Section Report

PART A - SECTION SUMMARY

A.1 EXECUTIVE SUMMARY

POSITION	NAME
Chairman	Arokiaswami Alphones
Vice Chair (Awards & Recognition Chair)	Ong Ling Chuen, Michael
Secretary (eBroadcast Chair)	Ponnuthurai Nagaratnam Suganthan
Treasurer (Conference Chair)	Muhammad Faeyz Karim
Immediate Past Chairman (Awards & Recognition Chair)	Sahoo Sanjib Kumar
Committee Member - Membership Chair	Shum Ping, Perry
Committee Member - Membership Co-Chair	Stefan Winkler
Committee Member - Student Activities Chair	Shao Xuguang, Michelle
Committee Member Publicity Chair	Li Wei
Committee Member - Professional Activities Chair	Amit K Gupta
Committee Member - Professional Activities Co-Chair	Kush Agarwal
Committee Member - Educational Activities Chair	Ma Maode
Committee Member - Educational Activities Co-Chair	Huang Shaoying

2018 is another eventful and wonderful year for the IEEE Singapore Section. Altogether we, Chapters and the Section, have managed to organize 331 technical events, 32 social events and 65 administrative events as of 1 December 2018. I would like to thank all the active volunteers in Singapore for their strong support that made the various events possible. They have indeed spent a lot of time organizing and planning all the activities that happened so far in 2018.

Growing the membership base remains a challenge and our goal would be to strive for a sustainable increase in members by reaching out to more young students and Engineers next year. We have run a few membership promotions for attracting new student members. We hope these new members will be engaged in various IEEE activities and would appreciate the value of professional networking.

1. AWARDS RECEIVED

The Section received the Certificate of Recognition for outstanding achievement in membership recruitment during the 2018 membership year.

2. ELEVATED FELLOWS – 2018

Meng Hwa Er

for contributions to electrical and electronic engineering education

Steven Chu-hong Hoi

for contributions to machine learning for multimedia information retrieval and scalable data analytics

Xianming Qing

for contributions to antennas for radio frequency identification systems

Yap-Peng Tan

for contributions to visual data analysis and processing

3. Region 10 Meeting

The R10 meeting was held 3-4 March 2018 at Langkawi, Malaysia. It was chaired by R10 Director, Prof Chun Kukjin. This year's theme was to raise awareness and understanding of science and technology and their potential to address a global challenge application. On a whole R10 has 125,707 members which is 30.1% of entire IEEE population which is 417,429. The IEEE President Jim Jeffries shared his remarks about future directions of IEEE, and also to target the membership towards 1 million.

A.2 FINANCIAL REPORT

Our consolidated financial position continues to remain healthy. The level of reserve is not excessive as the Section comprises 32 sub-entities (30 Chapters and 2 Affinity Groups), each recognized as a full-fledged IEEE Organizational Unit in terms of its privilege to organize events and manage its own finance.

The Section also helped to open 12 conference bank accounts for the conferences held in 2018, 8 for the 2019 conferences and 1 for a 2020 conference, with the OCBC bank as at end November.

Our Treasurer Dr Muhammad Faeyz Karim, together with the Section Accountant, Ms Joy Leong have worked tirelessly over the past year to maintain our accounts in an efficient manner, and would like to thank them for their invaluable services.

PART B - ORGANIZATIONAL ACTIVITIES

B.1 MEMBERSHIP DEVELOPMENT PROGRAMS

Below are the tables for the past 3 years' membership:

IEEE Grade Description	Active Members (as at 30 November 2018)
Student Members	166
Graduate Student Members	401
Associate Members	25
Members	1598
Senior Members	436
Fellow	47

Life Members	24
Life Seniors	17
Life Fellow	6
TOTAL	2720

IEEE Grade Description	Active Members (2017)
Student Members	177
Graduate Student Members	416
Associate Members	24
Members	1595
Senior Members	421
Fellow	41
Life Members	20
Life Seniors	15
Life Fellow	4
TOTAL	2713

IEEE Grade Description	Active Members (2016)
Student Members	116

Graduate Student Members	516
Associate Members	21
Members	1,726
Senior Members	430
Fellow	36
Life Members	9
Life Seniors	10
Life Fellow	1
TOTAL	2,865

Senior Member Elevation

Reached out to those who have been regular members since 2010 or longer and encouraged them to apply for senior membership

- 368 members contacted
- 40+ replied with interest
- 15 additional members elevated to Senior status so far

MD Awards

Received the 2018 Outstanding Section Membership Recruitment Performance Award

MD Events

- Membership Drive & Inspirational Talk on “Work-Life Harmony” (24 April)
- Health Awareness Talk and IEEE Members’ Networking on “Cancer Screening and Prevention” (28 August)

IEEE Fellows / Senior Members Networking Event: 4 April 2017, Tuesday

- “Legacy Planning – Why Every IEEE Fellow & Senior Member Needs It”
- *Keys To Wealth Control and Distribution* - Rick Tan

- “Turning Problems Into Possibilities”
- *Building Resilience In Life & Work* - Apelles Poh

IEEE Members Networking and Seminar: 2 June 2017, Friday

- "The Road To Financial Freedom & Early Retirement"
- *Retirement Planning – Pitfalls and Solutions* - Apelles Poh

IEEE Members Networking and Seminar: 26 August 2017, Saturday

- “Work Life Harmony” - Apelles Poh

B.2 Chapter Activities

The Singapore Section has 30 Chapters and 2 Affinity Groups. As at 1 December 2018, 331 activities have been reported via L31 Vtool system. Activities taking place after 1 December 2018 were reported subsequently after completion of the activities.

L31 submission status based on IEEE vTools System as at 1st December 2018:

SN	Section / Chapters / Affinity Groups	OU	Tech	Admin	Non-Tech	Total
1	Aerospace and Electronic Systems / Geoscience and Remote Sensing Joint Chapter	AES10/GRS29	6	4	1	11
2	Antennas & Propagation / Microwave Theory & Techniques Joint Chapter	AP03/MTT17	15	4	2	21
3	Broadcast Technology Chapter	BT02	2	3	0	5
4	Computer Chapter	C16	2	2	0	4
5	Circuits & Systems Chapter	CAS04	33	4	1	38
6	Consumer Electronics Chapter	CE08	2	0	0	2
7	Computational Intelligence Chapter	CIS11	10	2	0	12

8	Communications Chapter	COM19	9	0	0	9
9	Control Systems Chapter	CS23	6	2	0	8
10	Education Chapter	E25	4	2	0	6
11	Engineering in Medicine & Biology Chapter	EMB18	4	3	4	11
12	Electromagnetic Compatibility Chapter	EMC27	1	0	0	0
13	Industry Applications / Power Electronics Joint Chapter	IA34/PEL35	1	0	0	0
14	Industrial Electronics Chapter	IE13	8	8	2	18
15	Intelligent Transportation Systems	ITS038	6	3	0	9
16	Magnetics Chapter	MAG33	3	2	1	6
17	Nanotechnology Chapter	NAN042	7	5	0	12
18	Nuclear and Plasma Science Chapter	NPS05	9	2	0	11
10	Oceanic Engineering Chapter	OE22	7	8	0	15
20	Power & Energy Chapter	PE31	2	0	3	5
21	Photonics Chapter	PHO36	11	1	17	29
22	Reliability / Components, Packaging & Manufacturing Technology / Electron Devices Joint Chapter	R07/CPMT21/ED15	6	3	0	9
23	Robotics & Automation Chapter	RA24	3	0	0	3
24	Council on RFID	RFID741	4	0	0	0
25	Section	Section	0	5	2	7
26	Sensors Council Chapter	SEN39	9	0	0	9
27	Systems, Man & Cybernetics Chapter	SMC28	4	2	0	6

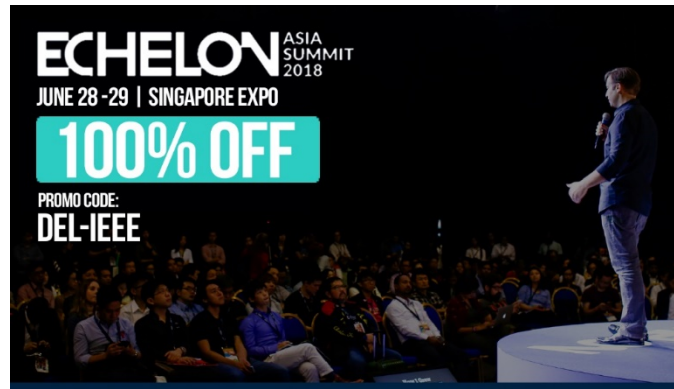
28	Signal Processing Chapter	SP01	8	2	0	10
29	Solid State Circuits Chapter	SSC37	15	3	1	19
30	Technology and Engineering Management Chapter	TM14	3	4	2	9
31	Vehicular Technology Chapter	VT06	6	3	0	9
32	Women in Engineering Affinity Group	WIE	3	3	3	9
33	Young Professionals	YP	1	0	8	9
	Total		210	80	47	331

B.3 Professional and Continuing Education Activities

1) Entering into the tech innovation ecosystem by supporting and partnering events.

- IEEE SG Section was Event Partner for Echelon 2018





➤ In discussions with IoT World Asia Event (Technical Sponsor)

2) SUTD IEEE-HKN Hosted Karen Galuchie, IEEE Foundation Executive Director



B.4 Students Activities

IEEE Singapore Section has 3 active Student Branches - NUS, NTU and SUTD and 2 IEEE-HKN Branches – NUS and SUTD. These Student Branches organize regular educational workshops for the IEEE Student Members and for reaching out to non-members. They serve as platforms for connecting IEEE Members and the Student Members. They are also effective channels for IEEE to reach out to young Engineering students in the local universities under the enthusiastic direction of Dr Michelle Shao.

- Helps Student Branches in our Section to maintain continuity: provides them resources for managing their activities, and ensures a steady contact with the Section.
- Support up to S\$ 1500 to the three student branches in total
 - NUS Student Branch requested and obtained sponsorship S\$1000 for the Hackathon 2018 – First Hackathon event organized
 - Provide regular report to the IEEE ExCo about the status of Student Activities programs in the Section.
 - NTU, NUS and SUTD student branches function actively

B.5 Affinity Group Activities

IEEE YOUNG PROFESSIONALS (YP) AFFINITY GROUP

Chairman: David Wong Liang Tai

(A) ACTIVITIES FOR THE YEAR 2018:

- **Administrative Meetings**

20180124 – 1st IEEE YP Meeting to discuss on planned activities

20180416 – 2nd IEEE YP Meeting to discuss on planned activities

20180621 – 3rd IEEE YP Meeting to discuss on planned activities

20180803 – 4th IEEE YP Meeting to discuss on completed and planned activities

- **Technical Seminars and Talks**

a) [1x] NTU EEE Graduate Research Showcase (Keynote speaker: Dr. Tan Geok Leng) at NTU on Oct 18th, 2018.

b) [1x] PCB Design Workshop presented by Sulin and Rajeswari, PCB GraphTech, Singapore at NTU on 5th Oct, 2018.

c) [1x] IEEE YP-Young NTUC- Antler Technopreneurship Talk presented by Prerna Sharma, Head of Recruiting at NTUC Centre on 3rd Oct 2018.

d) [1x] Short course on machine learning for beginners by Dr. Sivanagaraja Tatinati at NTU on July 23rd to 25th July.

e) [1x] Technology Entrepreneurship- Be a startup founder at NTU on 15th Mar, 2018.

f) [1x] Intellectual Property in Research and Related Career at NTU on 16th Mar, 2018.

g) [1x] Singapore Circuits and Systems (CAS) Workshop 2018 at NTU on 9th Mar, 2018.

- h) [1x] IoT Industry Opportunities at NTU presented by Mr. Ashish Prabhu, UST Global on 9th Feb 2018.
- i) [1x] IEEE World IoT Forum 2018- Connected Healthcare & Industrial IoT at Sands Expo, on 6th Feb, 2018.

(B) FUTURE PLANS:

- Career talks on AI and Machine learning
- Industrial visits to IoT industrial facilities
- Graduates' Research Showcase 2019

(C) SUMMARY:

- Technical workshop – 2, Seminars-6, Conference – 1, Committee Meeting AY 2018 – 4

IEEE WOMEN IN ENGINEERING (WIE) AFFINITY GROUP

Chairperson: Lu Liru



WIE EXCO has organized 4 administrative meetings for the year 2018.

1. 1st Meeting on 12th January, 2018: WIE members met at Fusionopolis and discussed activities for the year 2018. Chairman presented appreciation certificates to long service members and appointment certificates to the office bearers of the year 2018.
2. 2nd Meeting on 18th April, 2018: WIE members had a good discussion for preparation of upcoming AI talk scheduled on 20 April 2018. Members worked together to ensure the event to be successful. Arrangements were also made for IRC-SET 2018 WIE special session.
3. 3rd Meeting on 6th September, 2018: WIE members welcomed a new co-opted member Dr. Kim on board. Chairman gave updates of past activities and all members jointly discussed the details of upcoming search workshop event scheduled on 21 September 2018.
4. 4th Meeting on 2nd November, 2018: Chairman hosted an appreciation dinner meeting for executive committee members. WIE members discussed and nominated office bearers and members for the WIE executive committee of the year 2019.

Apart from face to face meetings, executive members also communicate each other via WIE EXCO WhatsApp group to keep information up to date.

- **Technical Seminars and Talks**

WIE was actively involved/organized Technical Seminars and Inspirational talks to further promote women profile and network within Singapore and Region 10.

1. WIE actively engage women in Engineering through different channels. On 26 January 2018, WIE in collaborate with NTUC UWEEI organized “Mentoring Programme for Women Engineers”. Three invited women speakers shared their experiences on how they succeed in their career and manage the balance of work and life.
2. On 26 April 2018, WIE successfully organized a technical talk titled “Next Generation AI” at Fusionopolis. More than 80 people registered for this event. The talk received very positive feedbacks from audience and WIE will continue to organize similar events for IEEE community.
3. WIE organized a special session at IRC-SET 2018 on 4 June 2018 at Matrix, Biopolis. IRC-SET is a conference on Science, Engineering, and Technology. Speakers from various organizations has presented their research findings at this speaker session. The section was very successful.
4. On 25 Aug 2018, WIE Chairman Dr. Lu Liru was invited as panelist on “Achieving Your Potential in Engineering” at JobsCentral Career and Education Fair 2018 to share her thoughts on women in engineering and encourage young female students to take up the engineer jobs.
5. WIE member Dr. Guo Huaqun was invited as keynote speaker in ICITE 2018 and gave a keynote speech on 4 Sept 2018.
6. On 21 Sept 2018, with the support for IEEE Singapore office, WIE organized another workshop “Conducting a Winning Search” to help members improve their search skills on both IEEE Xplore and online patent databases. The workshop also received positive comments from participants.
7. On 20 November 2018, WIE will co-organize another mentoring programme with NTUC UWEEI and provide training on unconscious bias for women researchers, scientist and engineers.

(B) FUTURE PLANS:

WIE will follow up to meet the potential collaborators to explore and organize possible activity for WIE SG & IEEE members. We will continue to work closely with WIE Japan section, STEM Singapore, IEEE R10, IES WiSER and NTUC U Women Network in upcoming year.

(C) SUMMARY:

Year 2018 is another successful year for WIE. We had organized 4 administrative meetings which drive the whole year for exciting activities and 7 technical seminars/Inspirational talks for promoting our WIE and IEEE section activities and continued the cooperation with IEEE Singapore section, IRC and NTUC U Associates Network. We will work closely with our new women networks and connection with professional bodies to promote women profiles in Singapore.

In total, we have **11 activities** in terms of social, technical, networking and promoting event for the year 2018. We appreciate the strong support from IEEE Singapore Section, IEEE R10 WIE. We believe WIE SG can contribute more interesting and meaningful events and activities both in social and technical and serves as a communication bridge for women engineers and scientists with the world leading IEEE science and technology community.

B.6 Awards & Recognition Activities

AWARDS RECEIVED

The Singapore Section presents two awards annually: the Best Chapter Award and the Outstanding Volunteer Award. The purpose of the Best Chapter Award is to recognize the volunteers' efforts, from within the member chapters of the IEEE Singapore Section. The IEEE Singapore Section Outstanding Volunteer Award aims to recognize those volunteers who have made outstanding contributions to the Singapore Section, and/or its Chapters/Affinity Groups and/or its IEEE Conferences.

In 2018, the Circuits and Systems Chapter won the Best Chapter Award and the Outstanding Volunteer Award was given to Prof Andrew Tay from the Singapore University of Technology and Design.

B.7 Communication Activities (Newsletter, Home Page, E-mail etc.)

Regular broadcasts containing information on seminars, talks, conferences, social events and membership benefits have been sent to IEEE members in Singapore. This was well coordinated by Prof Ponnuthurai Nagarathnam Suganthan.

B.8 Industry Relations

- Membership growth and retention

The section EXCO has formed a sub-committee headed by Dr. Amit Gupta to brainstorm about ways to promote IEEE membership among industry professionals in Singapore.

The section is actively involved with NTUC to develop common technical and professional courses and seminars for the technical personnel in Singapore.

PART C - OTHERS

C.1 Special Events

C.2 Relationship with National and International Societies and Non-Government Organizations (NGO)

- IES-IEEE Joint medal of excellence being continued. The Institution of Engineers, Singapore (IES) and the Institute of Electrical and Electronics Engineers, Inc. (IEEE) intend to continue with the IES/IEEE Joint Medal of Excellence Award. The aim of the award is to promote engineering as a profession and to recognize an individual for his/her contributions in Engineering that have had far-reaching impacts on society. The award is expected to inspire the young to take up engineering as a profession. This award is highly prestigious and the recipient will be recognized not only in Singapore but also the region and around the world.
- IEEE Singapore Section works with the national trade union congress (NTUC) as one of the members of U Associates. U Associate is a partnership program designed to engage and support professional associations. As members of U Associate, IEEE volunteers get chance to engage with professionals from related industry and prepare for future challenges to the economy. NTUC helps us in publicizing IEEE activities among other NTUC members and thus helps in our outreach to industry.

PART D - GOALS AND PLANS

D.2 Goals and Future Plans

Membership Development

To attract new members as well as make existing ones retain their membership.

1. Tie up with hotels and popular attractions for special discounts
2. Hold regular net-working events with topics that are of interest members
3. Organize movies events for networking
4. To add other attractions as membership benefits
5. Offer seminars / trainings / short courses with NTUC
6. List of activities to be included in website like a calendar of events

Engaging Students

To increase support for HKN activities. To encourage the HKN chapters to lead outreach activities in schools.

To continue to support activities like Graduate Student Symposium (GSS) organized by YP at NUS and towards membership development.

Engaging Industry

The section EXCO has formed a sub-committee headed by Dr. Amit Gupta to brainstorm about ways to promote IEEE membership among industry professionals in Singapore.

The section will engage with NTUC to publicize useful technical and professional courses and seminars for the industry professionals in Singapore.