



**IEEE SOUTH AUSTRALIA  
SECTION**

**2023 REPORT**

**R10 Meeting**

**2-3 March 2023**

**Kuala Lumpur**

# Part A Section Summary

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## A.1 Executive Summary

2023 has been a very eventful year for the Section with the support of Chapters, Affinity Groups and Student Branches.

### Highlights

Section Supported the following activities:

- R10 Dinner at Adelaide Convention Centre
- JTP Committee Talk Held by Keith Kikkert
- Section-YP MATLAB workshop Hosted By Bisma Manzoor
- Return of Student-Industry Networking Night
- Section Support of RADAR 2023
- End of the Year Celebration Dinner 2023
- Event Activities in 2023 at least 86 events reported in VTools before AGM, 15 December 2023

The Section Received the following awards:

- 2023 Region 10 Best Membership Growth Medium Section Award
- 2023 IEEE Outstanding Member Recruitment Performance



With continuous support of active volunteers the Section plans on continuing hosting high quality events in South Australia for IEEE members.

As this is my transition period I am to ensure that bylaws section adaptable to challenges to enable future Section Executive Committee members have all the relevant information to able to best support IEEE, Section, Chapters, Affinity Groups, Student Branches, Members and Students.

Shela Cook

Chair IEEE SA Section, 2023  
shelasouthaustralia@ieee.org

## SECTION EXECUTIVE COMMITTEE MEMBER LIST

2023		
South Australia Section	Chair	Shela Cook
	Vice-Chair	Jignesh Jokhakar
	Treasurer	Michael Sadler
	Secretary	Brian Ng
	Student Activity Chair	Xin (Vernon) Yuan
	Webmaster	Brandyn Walsh
	Joint Technical Program	Vanika Sharma
Power & Energy Society	Chair	Jamal Alameddine
	Vice-Chair	Wai-kin Wong
	Treasurer	Ridma Kondasinghe
	Secretary	Ridma Kondasinghe
Computer Society	Chair	Adriel Cheng
	Vice-Chair	Adam Burdeniuk
	Treasurer	Hong Gunn Chew
	Secretary	Kyle Millar
CAES	Chair	Leigh Powis
	Vice-Chair	Waddah Al-Ashwal
	Treasurer	Luke Rosenberg
	Secretary	Nasim Chitsaz
	Membership Development	Xin (Vernon) Yuan
C&SP	Chair	Jignesh (Jay) Jokhakar
	Vice-Chair	Ronald Mulinde
	Treasurer	Brian Wai-Him Ng
	Secretary	Sharmil Randhawa

AP/MTT	Chair	Shengjian Jammy Chen
	Vice-Chair	Debrata Karmoka
	Treasurer	Bobby Yau
	Secretary	Morteza Shahpari
Young Professionals	Chair	Michael Sadler
	Vice-Chair	Dr Siti Nailah Mastura Zainarry
	Treasurer	Bisma Manzoor
	Secretary	Jignesh (Jay) Jokhakar
Life Members Affinity Group	Chair	Keith Kikkert
	Vice-Chair	Don Sinnott
WIE Affinity Group	Chair	Anika Talukder
	Vice-Chair	Anna Holland
	Treasurer	Sharmil Randhawa
	Secretary	Abigail Wicks
University of Adelaide Student Branch	Chair	Emily Hinze
Flinders University Student Branch	Chair	Caleb Miller
University of South Australia Student Branch	Chair	Aradhika Guha

For 2023, South Australia Section had a year full of high-quality technical activities. In support our members and the local community, the IEEE SA Section chapters, student and affinity groups held more than 86 (Some events were not yet reported at the time of the AGM), admin, technical, non-technical and pre-university events.

Prof	Tech	Non-Tech	Admin	Hum	Pre-U	Total
12	43	1	30	0	0	86

The IEEE SA Section Committee met six times in 2023 (February, April, June, August, October and December (AGM)). The Section Committee members also maintained ongoing contact by email to deal with issues that could be handled by electronic means.

The SA Section Chair, Shela Cook attended the regular meetings of the IEEE Australia Council meetings in 2023, chaired by Fouad Karouta, in order to coordinate with other Australian Sections. This included an in-person meeting in Ho Chi Minh 3 March 2023. The SA Section Chair also attended the Region 10 Annual Meeting, in-person meeting in Ho Chi Minh 4-5 March 2023

## **A.2 Financial Summary**

AUD Cashflow

Starting Position: \$204,598.34

Income: \$31,473.82

Expenses (excluding term deposits): \$36,992.65

Net: -\$5,518.83

Final Position: \$49,079.51 + \$150k in term deposits

USD Cashflow

Starting Position: US\$10,943.32

Income: US\$6,098.47. Without chapter grants: US\$3,648.47

Final Position: US\$17,041.79

Combined (US\$1 = A\$1.49) = -A\$82.61

# PART B - ORGANIZATIONAL ACTIVITIES

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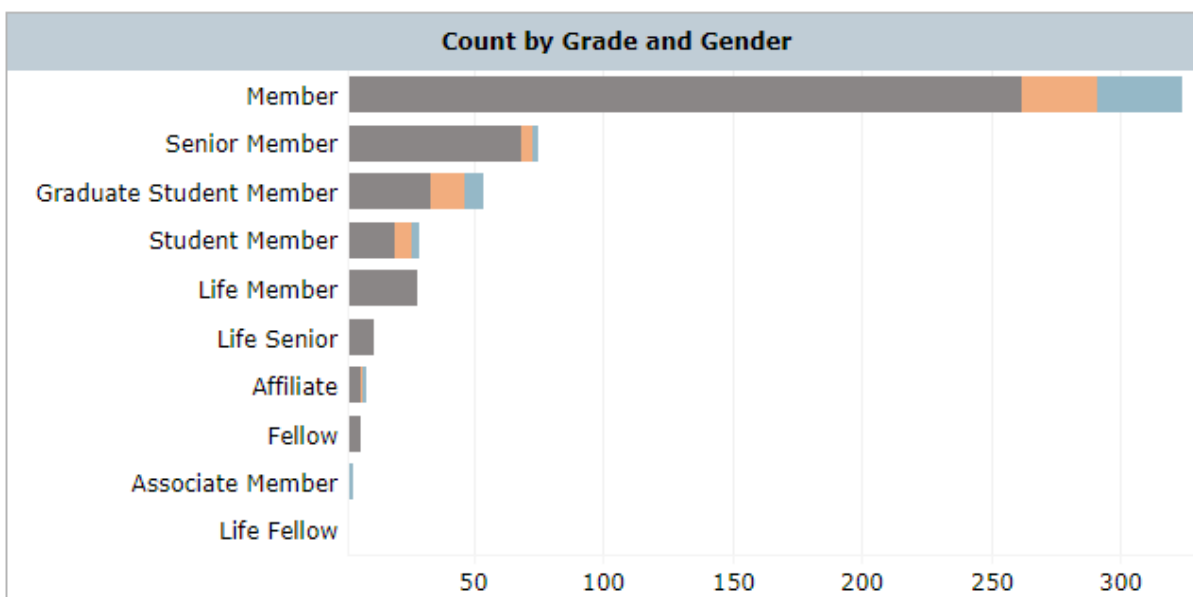
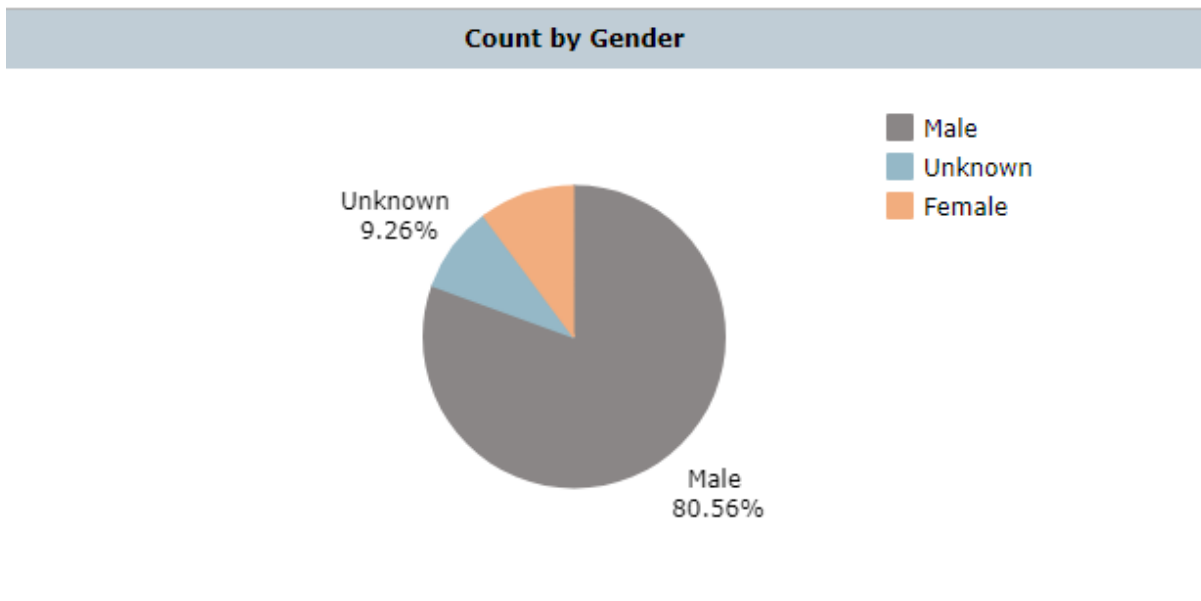
## B.1 Membership Development Activities

Our membership statistics for December 2023 are shown in the table below.

<b>Current Grade Description</b>	<b>Count of Members (2023)</b>
Associate member	3
Fellow	6
Graduate, Student member	51
Life Fellow	2
Life Member	28
Life Senior	11
Member	324
Senior Member	75
Student member	28
Affiliate	8
<b>TOTAL</b>	<b>541</b>

The spread in terms of gender is shown below, with 10.18% female, 80.56% male and 9.26% unknown.

The count by grade and gender shows this information in a different fashion. The majority of female members are student, members or senior members.



## B.2 Chapter Activities

IEEE South Australia section has five active chapters Computer Society, Communication/Signal Processing, Antenna Propagation/Microwave Theory & Techniques, Control/Aerospace and Electronic Systems and Power Engineering Society.

### Computer Society

### Communication/Signal Processing

- 1 Technical Talk by Professor Dixit

### Antenna Propagation/Microwave Theory & Techniques

1. **Title:** Present and Future Spin-on Electro-optic Waveguide Modulator **Speaker:** Prof. Shiyoshi Yokoyama of Kyushu University **Date:** 22 Mar 2023 **Venue:** Virtual **Attendees:** 24
2. **Title:** Antenna, Microwave and Electromagnetic Research For Smart Cities **Speaker:** Prof. Chalermwisutkul of King Mongkut's University of Technology North Bangkok **Date:** 04 Apr 2023 **Venue:** Virtual **Attendees:** 22
3. **Title:** 5G and Beyond: A Diverse Set of Antenna Solutions for a Diversity of Requirements **Speaker:** Dr. Rod Waterhouse of CTO Octane Wireless **DL:** Non-DL **Date:** 26 Apr 2023 **Venue:** Virtual **Attendees:** 20
4. **Title:** Millimetre-Wave Integrated Circuits Design in CMOS and SiGe Technologies **Speaker:** Dr. Forest Zhu of University of Technology Sydney **Date:** 28 Apr 2023 **Attendees:** 19
5. **Title:** Terahertz Communications Accelerated by Photonic Technologies **Speaker:** Dr. Weijie Gao, Nagatsuma's Laboratory at Osaka University **DL:** Non-DL **Date:** 03 May 2023 **Venue:** Virtual **Attendees:** 35
6. **Title:** Dielectric Properties of Healthy Human Skin and Challenges towards Dermal Anomaly Detection using Electromagnetic Techniques **Speaker:** Dr Akbar Naqvi, The University of Queensland **DL:** Non-DL **Date:** 16 Jun 2023 **Venue:** Virtual **Attendees:** 17
7. **Title:** Terahertz Integrated Circuits and Applications **Speaker:** Prof. Jae-Sung Rieh, the School of Electrical Engineering, Korea University **DL:** Non-DL **Date:** 10 Aug 2023 **Venue:** Virtual **Attendees:** 40
8. **Title:** Wireless Energy Harvesting and Power transfer from RF to Optical Frequencies **Speaker:** Prof Yi Huang, the Department of Electrical Engineering & Electronics, the University of Liverpool **DL:** APS-DL **Date:** 27 Sep 2023 **Venue:** Virtual **Attendees:** 16
9. **Title:** E-Band Multibeam Transmitarrays for Unmanned Aerial Vehicle Aided Communications **Speaker:** A/Prof. Peiyuan Qin of Global Big Data Technologies Centre, University of Technology Sydney **DL:** Non-DL **Date:**



24 Oct 2023 **Venue:** The University of Adelaide **Attendees:** 21

10. **Title:** Distributed Phased Arrays: Challenges and Recent Progress **Speaker:** A/Prof. Jeffrey Nanzer, Department of Electrical and Computer Engineering, Michigan State University **DL:** DML **Date:** 13 Nov 2023 **Venue:** The University of Adelaide **Attendees:** 15
11. **Title:** Novel Techniques and Technologies of Microwave Non-destructive Sensors and Instruments **Speaker:** Dr. Amir Ebrahimi of RMIT **DL:** Non-DL **Date:** 29 Nov 2023 **Venue:** The University of Adelaide **Attendees:** 15

#### Control/Aerospace and Electronic Systems

- Organised 2 talks, 2 site visits, and 5 short courses (182 short course participants)
- Co-sponsored the International Radar Conference (Radar 23) in Sydney (471 attendees)
- CAESS provided 3 student travel awards, and funded 2 coffee carts for delegates
- The 2 co-chairs were both CAES members (Luke Rosenberg and Joe Fabrizio)
- Co-sponsored the IEEE SA Student-Industry Night (Vernon Yuan was organiser, 130 attendees)
- And Congratulations to Luke Rosenberg, who has just become an IEEE Fellow.

#### Power Engineering Society

- Organised 1 Webinar, 1 site visit, and 1 DLP
- Webinar on Women In Energy (Three speakers)
- Technical Tour to Elizabeth Shopping Centre Rooftop and Car park Solar
- Distinguished Lecturers Program (DLP) on What, where and who? Virtual power plants, energy communities and microgrids

#### Other highlights

The Section Received

- 2023 Region 10 Best Membership Growth Medium Section Award
- 2023 IEEE Outstanding Member Recruitment Performance

## B.3 Students Activities

IEEE South Australia has three student branches at Adelaide University, Flinders University, and the University of South Australia. In order to encourage more student members, the Section presents an award to a student at each of the three South Australian universities for the best achievement in electrical and electronic courses. The students are nominated by the University, and the awardees receive a certificate and a cash prize. The student award prize-winners for the IEEE South Australia Section 2022 Student Award for Excellence in Engineering with an electrical and/or electronics emphasis are:

- Byron Roman Betts, University of Adelaide
- David Olijnyk, Flinders University
- TBA, University of South Australia

### Student Industry Night 2023

The Section co-supported with CAES in hosting the student industry networking night. There were more than 150 student participants and at least 30 from industry.



## B.4 Affinity Group Activities

South Australia Section has three Affinity Groups: Young Professionals (YP), Women in Engineering (WIE) and Life Members Affinity Group (LMAG).

### Young Professionals (YP)

Everyone at the YP Committee has been very busy outside YP. Matlab Session was organised by Shela and Bisma as a joint event with the Section.

- Matlab Planning meeting with Matworks 1 Feb 20 3people
- Matlab Planning meeting with Presenters Bisma (YP Treasurer) 3 people
- Matlab Planning meeting with Matworks 22 Mar 3 people
- Matlab Workshop 3 August 5 people

For 2024 YP needs to find volunteers to take on positions.

### Women in Engineering (WIE)

List of official meetings that were held to plan WIE activities for the year

1. 8 March 2023, IEEE attendees: 6, guest: 5
2. 13 April 2023, IEEE attendees: 4, guest: 8
3. 28 May 2023, IEEE attendees: 5, guest: 6
4. 15 June 2023, IEEE attendees: 4, guest: 8
5. 22 June 2023, IEEE attendees: 6, guest: 6
6. 16 July 2023, IEEE attendees: 5, guest: 4
7. 3 August 2023, IEEE attendees: 4, guest: 5
8. 20 August 2023 (In person, Adelaide University), IEEE attendees: 6, Guest: 8
9. 9 September 2023, IEEE attendees: 2, guest: 5

*Outside of these 9 scheduled meetings, a range of individual meetings were held with Department of Education, Clare High School delegate and industry sponsors such as BAE Systems Australia.*

*STEM WORKSHOP for Country School Girls (Pre-University)*

- *STEM Workshop Setup 27 August 2023*
- *STEM Workshop Event 28-30 August 2023*

*The key workshops were all developed and presented by the WIE volunteers to a group of 50 female students, in addition to Teacher PD. The feedback from individual workshops are illustrated in the PDF attached named "WIE- Clare 2023". Overall the workshop was a success, and volunteers are keen to return in 2024 and collaborate with Department of Education to identify another regional school to undertake this activity.*

## Life Members Affinity Group (LMAG)

### Chairman's Report for 2023, presented 1 November 2023

#### PROGRAM FOR YEAR

The Group presented the following events – most were in person lectures held at the EA Chapman Lecture Theatre. The Micro-X visit was in person, but the 2 Nov 2022 and the 2 Aug 2023 events were video conferences. The program was wide ranging in topic selection. The visit to Micro-X aroused great interest, and the hosts instructed our members well beyond the original time allotted.

Topic Nr	Date	Speaker	Topic	Nr Participants
1	2 Nov 2022	Dr. Alexander Post Chief Technology Officer MGA Thermal	An overview and update on MGA (Miscibility Gap Alloys) Thermal energy storage technology	23
2	1 Feb 2023	Visit to Micro-X, Tonsley Park SA on Wed morning approx. 2 hrs	Cold Cathode carbon nano-tube X-Ray Technology production and machines	32
3	5 Apr 2023	Tharin Sayed, Audiologist and PhD candidate College of Nursing & Health Sciences Flinders University	Hearing loss and the technology of hearing aids	36
4	7 Jun 2023	Dr Joseph Kasser	Achievements, anecdotes and lessons learned from 50 years of developing software for amateur radio	20
5	2 Aug 2023	Paul Vella, Architecture – Principal, E2E Solutioning, Networks & IT, Telstra	"The Public Switching Telephone Network, do we still have one?"	24
6	5 Oct 2023	Dr Claudio Pizzolato Senior Research Fellow Griffith University QLD	BioSpine – digitally enabled rehabilitation technology for spinal cord injury	37

The Group acknowledges with thanks the continuing support of the University of Adelaide School of Electrical and Electronic Engineering Department; in particular the use of their video conference account.

#### Committee

Chairman: Philip Cheesman

Deputy Chairman: Geoff Jansen

Secretary: Don Grigg

Treasurer: Jim Emery

Programme Coordinator: Chris Nettle

Committee: Don Sinnott Deputy Chair of the IEEE SA Section LMAG

Committee: Cornelis (Keith) Kikkert Chair of the IEEE SA Section LMAG

Committee: Bill Harrod

Committee: Joseph Kasser representative to IET

## Part C- External Engagements

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### C.1 Relationship with National Societies

In the past, the IEEE-SA Section has had a strong collaboration with our professional colleagues in Engineers Australia, the Institution of Engineering and Technology (IET), and the Telecommunication Society of Australia (TSA). While there were ongoing technical meetings with the IET, the joint technical program (JTP) ran has successfully ran 3 events in 2023, one of the events was hosted by Section, Presented by Keith Kikkert.

## C.2 Collaboration with other IEEE Sections

Collaboration with other neighbouring IEEE Sections has been handled through IEEE Australia Council.

The section supported in the hosting of RADAR 2023 in Sydney volunteers from the Section were part of the organising committee and section has contributed on seed funding the conference. Special mention to Luke Rosenberg General Co-Chair and Brian Ng (Conference Treasurer)

## C.3 Problems ongoing/anticipated

The section anticipates that finding young people to be active IEEE members and volunteers is one of the biggest challenges that our section is facing in the future. This problem is also faced by many other sections around the world. Young members are under increasing time pressure from their employers and finding time for IEEE volunteering is a challenge. Another major concern is that we need to develop new Chapters that are in-tune with new directions in the industry. Finally to streamline officer handover procedures by updating the bylaws.

# Part D – Concluding Remarks

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For 2024 the section will attempt to conduct a wide variety of strategies for marketing and activities to attract new volunteers and members.

- **Casual Volunteering at Work**
  - Encourage Members from all Level Grades to host catch up events, technical talks etc.
  - Get to know your fellow IEEE members at work.
  - Opportunity to network with Senior Members and above to learn more about the Member Grade promotions
- **R10 Robotics Competition 2024**
- **IEEE Day 2024**
- **JTP and Joint Events**
- **Student Industry Night 2024**
- **YP Committee AGM**
- **Section Volunteering Awards 2023**
- **Form a Conference Committee Bidding Team**

To Enable future executive committee have a form of handover materials and necessary assistance in able to take on their desired roles by updating the section by laws and enabling them a smooth transition to the roles allowing them to have some form of training via. VoLT or informal shadowing

Shela Cook

Chair IEEE SA Section, 2024

28 February 2024