

**MINUTES OF 12th ANNUAL GENERAL MEETING OF
ACADEMY OF ENGINEERING SINGAPORE (SAEng)
TUESDAY, 7th JUNE 2022, 5.30PM
VENUE: ZOOM MEETING**

Present:

Executive Committee (12)

Prof Cham Tao Soon	- President
Prof Thean Voon-Yew, Aaron	- Secretary
Prof Cheong Hee Kiat	- Treasurer
Prof Andrew Nee Yeh Ching	- Ordinary Committee Member
Er Chong Kee Sen	- Ordinary Committee Member
Prof Chou Siaw Kiang	- Ordinary Committee Member
Prof Hang Chang Chieh	- Ordinary Committee Member
Prof Lee Der-Hong	- Ordinary Committee Member
Prof Liu Bin	- Ordinary Committee Member
Mr Seah Moon Ming	- Ordinary Committee Member
Dr Richard Kwok	- Ex-officio President IES
Prof Yeoh Lean Weng	- Immediate Past President IES

Fellows (24)

Dr Chew Tuan Chiong, Dr Zhou Yingxin, Er. Edwin Khew, Er. You Fook Hin, Prof Chou Siaw Kiang, Mr Brian Chang, Ms Isabella Loh, Prof Brian Lee Chang Leng, Prof Chan Siew Hwa, Prof Chen Benmei, Prof Ge Shuzhi Sam, Prof Hong Minghui, Prof Leung Chun Fai, Prof Ma Kai-Kuang, Prof Pan Tso-Chien, Prof Wang Danwei, Prof Zhang Rui, Prof Yang Yiyan, Prof Guo Yong Xin, Prof Yeo Kiat Seng, Prof Wang John, Prof Soh Yeng Chai, Prof Wang Xin, Prof Wen Yonggang

By Invitation (3)

Prof Ho Teck Hua	- NUS
Prof Er Meng Hwa	- NTU
Mr Dalson Chung	- IES

Absent with Apologies:

Executive Committee

Prof Chong Tow Chong	- Ordinary Committee Member
Dr Lee Shiang Long	- Ordinary Committee Member
Prof Louis Phee	- Ordinary Committee Member
Prof Tan Thiam Soon	- Ordinary Committee Member

Fellows

Prof Freddy Boey, Prof Raj Thampuran, Dr Lee Bee Wah, Dr Lim Khiang Wee, Dr Shi Xu, Dr Susanto Rahardja, Dr Tan Kim Siew, Er. Chang Meng Teng, Er. Chong Kee Sen, Er. Chua Koon Hoe, Er. Dr. Lock Kai Sang, Er. Ho Siong Hin, Er. Lau Joo Ming, Er. Tan Ee Ping, Mr Chew Choon Seng, Mr Chiang Chie Foo, Mr Choo Chiau Beng, Mr Chow Khim Kun, Andrew, Mr Gan Boon Jin, Mr Gan Seow Kee, Mr Ho Hak Ean, Peter, Mr Inderjit Singh, Mr J Y Pillay, Prof Khoo Teng Chye, Mr Koh Boon Hwee, Mr Kwa Chong Seng, Mr Lee Ek Tieng, Mr Liew Mun Leong, Mr Lim Chee Onn, Mr Lim Soon Hock, Mr Mervyn Sirisena, Mr Moses Lee Kim Poo, Mr Philip Yeo, Mr Quek Gim Pew, Mr Ravinder Singh, Mr Teh Bong Lim, Mr Teo Ming Kian, Mr Wong Lup Wai, Mr Wong Ngit Liong, Ms Low Sin Leng, Prof Chan Eng Soon, Prof Chen I-Ming, Prof Chen Xiaodong, Prof Chen Zhining, Prof Cheng Tee Hiang, Prof Chung Tai-Shung Neal, Prof Deng Huijie, Robert, Prof Fwa Tien Fang, Prof Goh Eck Soong, Angela, Prof Goh Thong Ngee, Prof Kam Chan Hin, Prof Kot Chichung, Alex, Prof Lam Khin Yong, Prof Lam Yee Cheong, Prof Lee Fook Hou, Prof Lee Tong Heng, Prof Lian Yong, Prof Liew Jat Yuen, Richard, Prof Lim Chwee Teck, Prof Low Teck Seng, Prof Lui Pao Chuen, Prof Miao Chun Yan, Prof Ng How Yong, Prof Ng Wun Jern, Prof Ong Say Leong, Prof Phoon Kok Kwang, Prof Quek Tong Boon, Prof Seah Hock Soon, Prof Seeram Ramakrishna, Prof Soh Chee Kiong, Prof Su Guaning, Prof Subra Suresh, Prof Tay Tong Earn, Prof Teoh Swee Hin, Prof Thambipillai Srikanthan, Prof Thomas L. Magnanti, Prof Ting Seng Kiong, Prof Wang Chien Ming, Prof Wang Rong, Prof Wong Wai Choong, Prof Xie Lihua, Prof Yoon Soon Fatt, Prof Yue Chee Yoon, Prof Tan Gee Paw, Prof Li Haizhou, Dr Chew Yong Tian, Dr Yan Shuicheng, Mr Chua Chong Kheng, Prof Lee Der-Horng, Prof Lee Jim Yang, Prof Liu Ai Qun, Prof Guan Cuntai

In Attendance:

Ms Ong Hui Tian

- Recording Secretary, NUS

Action By

1 CONFIRMATION OF QUORUM

1.1 There being 39 members present, quorum was declared and confirmed for the commencement of the meeting.

2 PRESIDENT'S ADDRESS

2.1 President welcomed and thanked all Fellows for taking their precious time to attend the meeting. President went through the agenda for the AGM for the meeting's information.

3 SECRETARY'S REPORT

- 3.1 The Secretary’s report (as attached in Annex A) was presented to the meeting for comments.
- 3.2 Prof Aaron Thean shared that the Academy now has 137 Fellows with 11 new Fellows joining in the past year. One key activity the Academy has been engaging in is the Engineering Doctorate (EngD) programme, which focuses on research of industrial importance. This is elaborated in point 5.2.
- 3.3 President encouraged all Fellows to take some time from their busy schedule to contribute to the Academy’s projects and activities.
- 3.5 President requested comments on the Secretary’s Report. Fellows endorsed the Secretary’s report without any amendment.

4 TREASURER’S REPORT

- 4.1 The Treasurer’s report on the Academy’s financial status for year ending 31 December 2021 (as attached in Annex B) was presented to the meeting for comments.
- 4.2 President requested the meeting for comments on the Treasurer’s report. Fellows endorsed the Treasurer’s report without any amendment.

5 ANY OTHER BUSINESS

5.1 President went through the composition of the ExCo members. It was highlighted that the SAEng Constitutions states that “All office-bearers, except the Treasurer, may be re-elected to the same or related post for a consecutive term of office”. Ms Isabella Loh explained that this is a MCCY requirement that needs to be fulfilled if the Academy would like to gain the IPC status. President therefore nominated Prof Liu Bin as the next Treasurer. Below table states the new ExCo member composition:

Name	Title/Role as of 7 Jun 2022
Prof Cham Tao Soon	President Emeritus
Prof Ho Teck Hua	President
Prof Liu Bin	Treasurer
Prof Aaron Thean	Secretary

Prof Cheong Hee Kiat	Member
Mr Dalson Chung	Ex-Officio-President IES
Dr Richard Kwok	Immediate Past President IES
Prof Chong Kee Sen	Member
Prof Chong Tow Chong	Member
Prof Chou Siaw Kiang	Member
Prof Hang Chang Chieh	Member
Prof Er Meng Hwa	Member
Prof Lee Der-Horng	Member
Prof Lee Shiang Long	Member
Prof Andrew Nee	Member
Mr Seah Moon Ming	Member
Prof Yeoh Lean Weng	Member

5.2 Prof Hang Chang Chieh shared about EngD in brief, a programme which exposes students to research translational projects in the industry while gaining industry-relevant skillsets in their course of study. This will also benefit the nation as it enhances manpower training. Prof Hang encouraged the members to contact him should they be keen about EngD.

5.3 With this being his last AGM, Prof Cham thanked all members for their contributions to the Academy. Prof Ho expressed his gratitude to be nominated as the next SAEng President and thanked Prof Cham for his leadership for the past twelve years. He has three key goals for the Academy in the coming years:

- (1) To continue to attract more Fellows from diverse backgrounds
- (2) To amplify influence in the Engineering industry through efforts such as the President Technology Award and create deeper engagements with NRF
- (3) For the Academy to take on new projects that will energise the Engineering profession

Prof Ho looks forward to a face-to-face meeting and encouraged Fellows to share ideas for interesting projects at the next AGM.

5.4 There being no other business, the meeting ended at 6.10pm.



**ACADEMY OF ENGINEERING
SINGAPORE**

Recorded by: Ms Ong Hui Tian
Vetted by: Prof Thean Voon-Yew, Aaron, Secretary
Approved by: Prof Cham Tao Soon
Date: 25 Jul 2022

12th Annual General Meeting Academy of Engineering, Singapore

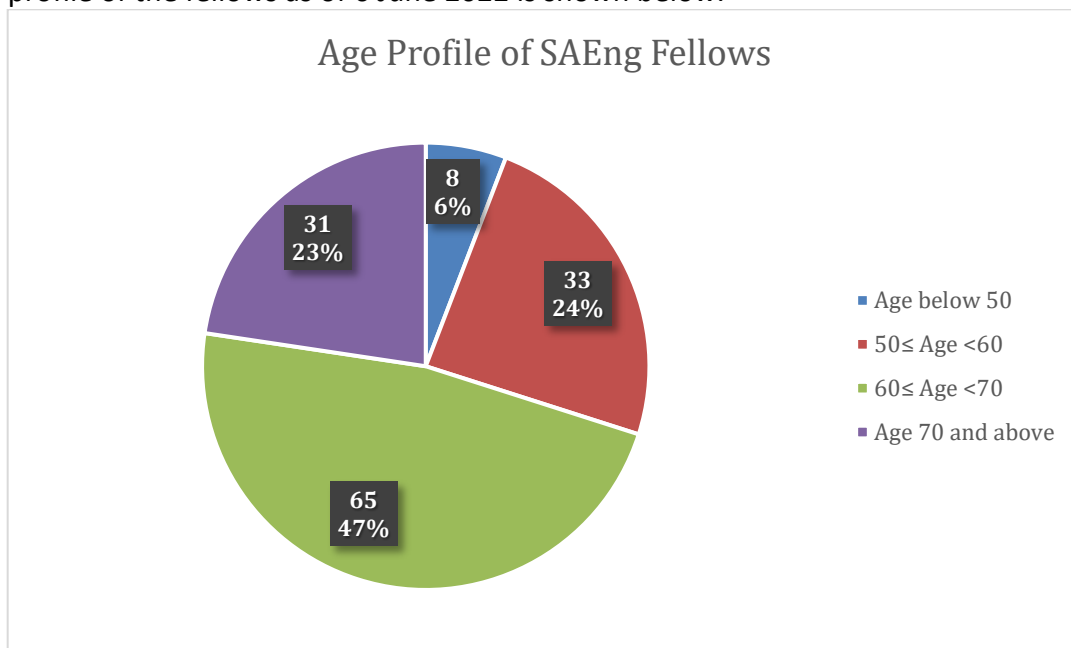
Secretary’s Report

Introduction

Welcome to the 12th Annual General Meeting (AGM) of the Academy of Engineering, Singapore. Since the last AGM which was held online on July 2021, the Academy has continued its work and mandate to serve as a think tank to deliberate on national agenda and issues related to the engineering profession by leveraging on the experience and expertise of its fellow members.

Membership

The network of Fellows has grown to 137 strong during the past year and the age profile of the fellows as of 6 June 2022 is shown below.



In the past year, the Academy is pleased to welcome 11 new Fellows who represent a range of academic and industry interests.

- 1) Prof Zhang Rui
Department of Electrical and Computer Engineering

College of Design and Engineering
National University of Singapore

- 2) Dr Yang Yi Yan
Covering Executive Director, Institute of Bioengineering and Bioimaging (IBB)
Agency for Science, Technology and Research
- 3) Prof Liu Ai Qun
Quantum Science and Engineering Centre (QSec)
Nanyang Technological University
- 4) Prof Guo Yongxin
Department of Electrical and Computer Engineering
College of Design and Engineering
National University of Singapore
- 5) Prof Li Haizhou
Department of Electrical and Computer Engineering
College of Design and Engineering
National University of Singapore
- 6) Prof Yeo Kiat Seng
Engineering Product Development
Singapore University of Technology and Design
- 7) Prof John Wang
Department of Materials Science and Engineering
College of Design and Engineering
National University of Singapore
- 8) Prof Soh Yeng Chai
School of Electrical & Electronic Engineering
College of Engineering
Nanyang Technological University
- 9) Prof Wang Xin
School of Chemical and Biomedical Engineering
College of Engineering
Nanyang Technological University
- 10) Prof Wen Yonggang

College of Engineering
Nanyang Technological University

- 11) Prof Guan Cuntai
School of Computer Science and Engineering
College of Engineering
Nanyang Technological University

Activities

Academy Project Initiatives

As part of the strategic plan, the Academy has previously established multiple project groups to address issues of national interest and challenges. They are:

- (1) Singapore as a Connected City
- (2) Engineers for the Future
- (3) Improving Sustainability in Transport Systems for Singapore
- (4) Enhancing the Role of Science Centre Singapore in Engineering Innovation
- (5) Study of Policies and Strategies to Revive Students' Interest in Engineering
- (6) Renewable Energy Alternatives for Singapore
- (7) Revival of the Prestige of Engineering and Engineers in Singapore
- (8) Engineering Doctorate Programme to Meet Industry Needs
- (9) Singapore's Cybersecurity Landscape

These studies are also publicised on the Academy's website (<https://www.saeng.sg/key-projects/>). All Fellows are encouraged to contribute to these projects and activities in the upcoming year.

Engineering Doctorate (EngD) Programme

On the eighth project, the Academy is happy to announce that three out of the first batch candidates of the Engineering Doctorate (EngD) Programme have completed their EngD study/research successfully and they have been awarded the Engineering Doctorate degrees: one from NUS and two from SUTD.

The Academy is a strong supporter of boosting Singapore's competitive edge in training the next generation of engineer-leaders. In the past few years, the Academy has been supporting the growth of the EngD programme which develops motivated young engineers for professional growth and a career in industrial research. The EngD focuses on research of industrial importance, endorsed by a supporting company which hosts the student as an employee for the duration of the EngD candidature. The student is jointly supervised by a University academic and a technology expert in the company to provide sufficient depth in scientific theory and a first-hand

understanding of industry-relevant needs. Intended for working professionals, the EngD programme requires candidates to undertake coursework in technology management.

The National University of Singapore (NUS) and Singapore University of Technology and Design (SUTD) were the first two local Universities to approve the EngD programme in 2017 and started admitting the first batch of EngD students in 2018.

To date, NUS and SUTD have admitted a total of 29 EngD candidates from MNCs (e.g. Advanced Materials, AMD, Panasonic, Halliburton, Nippon Paint, Dyson, etc.), A*STAR, DSO, AISG, LLE/SME and start-ups (Engro, One Smart Engineering, ANOR Tech, etc.). The Economic Development Board (EDB) has supported a number of EngD candidates from the abovementioned companies through the Industrial Postgraduate Programme (IPP) and is pleased to continue supporting companies to train industry relevant talent through the IPP. The EngD programme's dual focus on industry and academia makes it an excellent programme for training talent for industry.

The SAEng is pleased that it has played a pivotal role in nudging the universities in Singapore to pioneer the development of EngD programmes to serve as a timely addition to the advanced manpower education programme for the future needs of Singapore's high-tech industry. It is interesting to note that out of the first 3 EngD graduates, two are females. The Academy is looking forward to supporting more high potential young individuals to pursue professional growth in Engineering industries.

Awards and Honors

Prof Chen Xiaodong

- **President's Science Award 2021** for his outstanding contribution to advanced materials research for soft bioelectronics capable of digitising biological senses and extending human sensing capabilities, and their application to advanced manufacturing and healthcare wearables.

Prof Chen Zhi Ning

- **2021 John Kraus Antenna Award** by the IEEE Antennas and Propagation Society (APS) for his outstanding contributions to translational research of electromagnetic metamaterials for antenna engineering.

Er. Chong Kee Sen

- **The Federation of Engineering Institutions of Asia and Pacific (FEIAP) Engineer of the Year Award 2021** for his outstanding leadership and services to advance engineering in the Asia Pacific region and his exemplary

contributions to the engineering profession, IES and the society.

- **Honorary Fellow Award 2021** by the Institution of Engineers, Singapore (IES) in recognition of his outstanding leadership and services to IES and his notable contributions to the engineering profession and the society.

Prof Er Meng Hwa

- **Distinguished Engineering Alumni Award 2021** by NUS Faculty of Engineering for outstanding contributions to the engineering profession.

Mr Koh Boon Hwee

- **Honorary Degree of Doctor of Letters** by Nanyang Technological University (NTU) for his enormous contributions that transformed NTU and the lives of many of its students.

Mr Lau Joo Ming

- **MND Medallion 2021** by Ministry of National Development in recognition of his continuous contributions to Professional Engineers Board (PEB) and other MND family of agencies.

Prof Lim Chwee Teck

- **Highly Cited Researcher 2021** by Clarivate Analytics for ranking in the top 1% by citations for field and publication year in Clarivate's Web of Science database.
- **Asia's Most Influential Scientist Award 2021** by business magazine Fortune Times for his distinguished academic achievements, independence of thought, originality, significance of discovery, overall impact of his research, being a good and inspiring role model.
- **IES Prestigious Engineering Achievement Award 2021** by Institution of Engineers, Singapore for engineering achievements that demonstrate outstanding engineering skills and which have made a significant contribution to the engineering progress and the quality of life in Singapore.
- **Fellow of the ASEAN Academy of Engineering and Technology** in recognition of eminent individuals from academia, research institutes, industry and government who have demonstrated successful leadership or outstanding contributions to engineering and technology, and played an important role in the overall development of the ASEAN region.

Mr Vincent Chong

- **Distinguished Engineering Alumni Award 2021** by NUS Faculty of Engineering for outstanding contributions to the engineering profession.

SAEng Newsletter

The 9th issue of the SAEng newsletter was circulated to all Fellows in May 2022 to keep members informed on the new elected Fellows, and the latest updates on the activities and projects championed by our distinguished Fellows.

Thanks and Acknowledgements

On behalf of the Academy, I would like to extend my appreciation and thanks to our Fellows for their support and contributions as Executive Committee Members and the project groups who have dedicated precious time and hard work in pursuing the Academy's mission and objectives for the past year.

I would also like to put on record my thanks to the Institution of Engineers, Singapore (IES) for their continuing valuable and generous support towards the Academy's activities.

Prof Wang Rong

- **SG100WIT 2021** by Singapore Computer Society and Infocomm Media Development Authority in recognition of her over 30 years of experience in chemical and environmental engineering, water and energy related research and innovation.

Dr Yan Shuicheng

- **AAAI Fellow 2022** by the Association for the Advancement of Artificial Intelligence (AAAI) in recognition of the top individuals who have made significant, sustained contributions to the field of artificial intelligence.
- **Highly Cited Researcher 2021** by Clarivate Analytics for ranking in the top 1% by citations for the field and publication year in Clarivate's Web of Science database.

Prof Soh Chee Kiong

- **Lifetime Achievement Award** conferred by the International Conference on Futuristic Technologies (FT21) for his exemplary dedication and research contributions in Futuristic Technologies.

Dr Yang Yi Yan

- **Stanford's Top 2% Scientists Worldwide 2021** by Stanford University for outstanding contributions to the field of Biomedical Engineering.
- **A*STAR's Top 10 Creators (Patents) in 2014 - 2021** for outstanding contribution in patent filings to the fields of Bioengineering, Antimicrobial, Biomaterials and Nano-medicine patent applications between 2014 to 2021 in A*STAR.



**ACADEMY OF ENGINEERING
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Finally, I would like to thank all of you who are attending the meeting today and to all Fellows who have contributed generously towards the Academy.

I look forward to seeing more Fellows playing an active role in the Academy in the coming year.

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STATEMENT OF PROFIT OR LOSS AND OTHER COMPREHENSIVE INCOME
 For the financial year ended 31 December 2021

	Note	2021 \$	2020 \$
Income			
General donations		29,000	1,000
Expenditure			
General expenses		(10,006)	(9,865)
Surplus/ (Deficit) before income tax	4	18,994	(8,865)
Income tax expense	8	-	-
Surplus/ (Deficit) after income tax		18,994	(8,865)
Other comprehensive income		-	-
Total comprehensive income/ (loss) for the financial year		18,994	(8,865)

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STATEMENT OF FINANCIAL POSITION
As at 31 December 2021

	Note	2021 \$	2020 \$
ASSETS			
Current assets			
Cash and cash equivalents	5	66,088	57,259
Total current assets		<u>66,088</u>	<u>57,259</u>
LIABILITIES			
Current liabilities			
Other payables and accrued operating expenses	6	2,600	12,765
Total current liabilities		<u>2,600</u>	<u>12,765</u>
NET CURRENT ASSET		<u>63,488</u>	<u>44,494</u>
UNRESTRICTED FUND			
General fund		63,488	44,494
TOTAL FUNDS		<u>63,488</u>	<u>44,494</u>

STATEMENT OF CHANGES IN FUNDS
 For the financial year ended 31 December 2021

	General fund \$	Total \$
Balance at 1 January 2020	53,359	53,359
(Deficit) for the financial year	(8,865)	(8,865)
Other comprehensive income for the financial year	-	-
Total comprehensive (loss) for the financial year	(8,865)	(8,865)
Balance at 31 December 2020	44,494	44,494
Surplus for the financial year	18,994	18,994
Other comprehensive income for the financial year	-	-
Total comprehensive surplus for the financial year	18,994	18,994
Balance as at 31 December 2021	63,488	63,488

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STATEMENT OF CASH FLOWS
For the financial year ended 31 December 2021

	Note	2021 \$	2020 \$
Cash flows from operating activities			
Surplus/ (Deficit) from operating activities		18,994	(8,865)
Operating surplus/ (deficit) before working capital changes		<u>18,994</u>	<u>(8,865)</u>
Changes in working capital:			
Other payables and accrued operating expenses		<u>(10,165)</u>	<u>9,765</u>
Net cash generated from operating activities		<u>8,829</u>	<u>900</u>
Net increase in cash and cash equivalents		8,829	900
Cash and cash equivalents at beginning of the financial year		57,259	56,359
Cash and cash equivalents at end of the financial year	5	<u><u>66,088</u></u>	<u><u>57,259</u></u>