

President's Foreword



The past year has been an auspicious one for the Academy of Engineering, Singapore.

In October 2023, the International Council of Academies of Engineering and Technological Sciences (CAETS) accepted our membership at the council's annual conference. This was followed by a visit earlier this year to Singapore by the leadership of CAETS. We had a series of productive meetings that will no doubt lead to greater opportunities in the years to come.

Joining CAETS is a significant milestone in the history of our academy. It would not have been possible without the hard work of our past leaders in developing the academy, and of our current leadership and fellows, who serve as the lifeblood of SAEng.

CAETS is renowned as a leading consortium of national academies of engineering and applied sciences. It serves as a beacon for international cooperation and knowledge exchange in the field of engineering and technology. With esteemed member academies such as the Royal Swedish Academy of Engineering Sciences, the USA's National Academy of Engineering, and the Chinese Academy of Engineering, CAETS offers a dynamic platform for fostering collaboration and partnership among the world's foremost engineering institutions.

Joining CAETS has made SAEng the Singaporean representative to the world in the field of engineering and related sciences and underscores the academy's dedication to engineering excellence and innovation on a global scale. We are honoured to have been granted this privilege.

This membership presents a wealth of opportunities for SAEng to engage with international partners, exchange best practices, and collaborate on cutting-edge research and innovation projects. One highlight is SAEng's participation in a newly formed artificial intelligence (AI) working group. Our fellow, Professor Miao Chunyan, a leading expert in human-centred AI from Nanyang Technological University (NTU), has been appointed SAEng's representative. As you may know, Singapore is doing quite well in AI research – we are ranked number one in the world in terms of field-weighted citation impact – so I am optimistic that we can contribute greatly to this working group and shape the future landscape of AI applications.

SAEng's engagement with other CAETS member academies also provides a valuable opportunity to learn from our global peers and bring best practices to the engineering community in Singapore. By fostering collaboration and knowledge exchange within the CAETS network, SAEng aims to strengthen its efforts in inspiring the next generation of engineers and promoting engineering excellence in Singapore and beyond.

I look forward to hearing from you on how we can better engage with CAETS and its members academies.

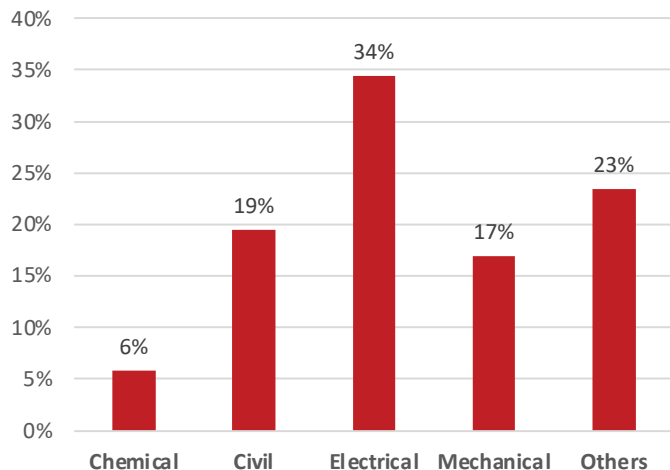
Professor Ho Teck Hua

About the Academy

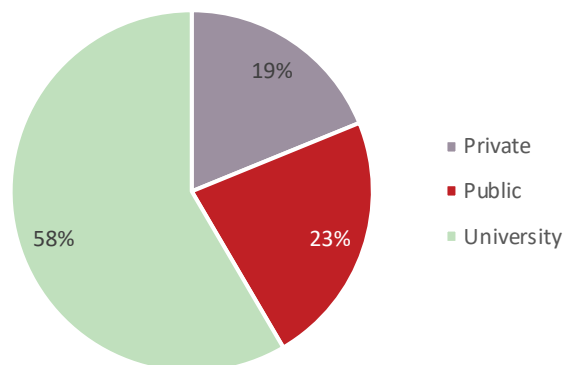
The academy's fellowship currently stands at 154 strong with the election of 6 new fellows in 2023.

As of 15 December, the demographics of our fellows are broadly illustrated below.

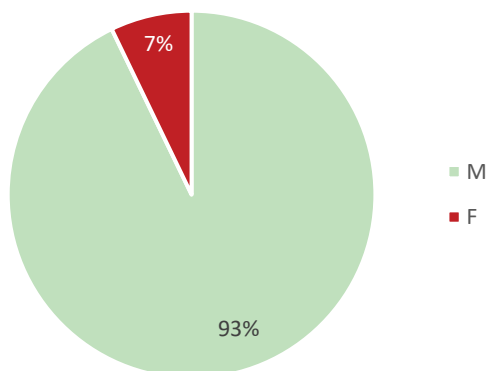
Disciplinary Field



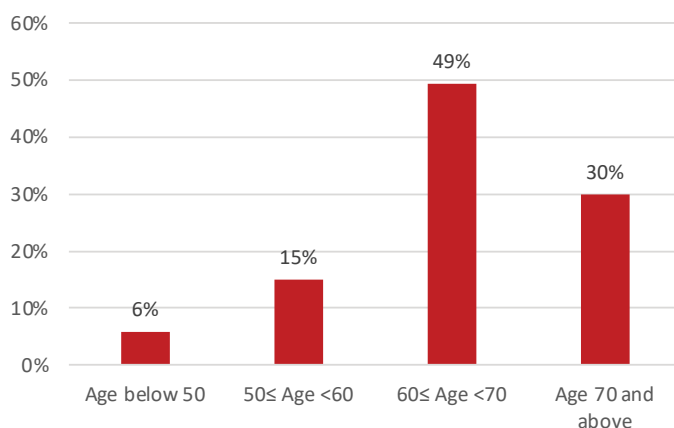
Sector



Gender Distribution



Age Profile



New Fellows



Professor Chu Jian

President's Chair in Civil Engineering; Chair, School of Civil and Environmental Engineering (CEE); Director, Centre for Urban Solutions (CUS) Nanyang Technological University, Singapore

Professor Chu Jian is a past president of the Geotechnical Society of Singapore and chair of Technical Committee TC217 on Land Reclamation, under the International Society of Soil Mechanics and Geotechnical Engineering. As a geotechnical engineering expert in the areas of laboratory and in-situ testing, soil improvement and land reclamation, he is an editor for Acta Geotechnica, editor-in-chief for Biogeotechnics, and associate editor for the ASCE Journal of Materials in Civil Engineering. He has garnered a number of awards, including the R. M. Quigley Award from the Canadian Geotechnical Society and the Outstanding Geotechnical Engineer Award from the Geotechnical Society of Singapore in 2018.



Professor Chua Chee Kai

Associate Provost for Research; Director, Centre for Healthcare Education, Entrepreneurship and Research @ SUTD (CHEERS); Cheng Tsang Man Chair Professor Singapore University of Technology and Design

Professor Chua Chee Kai joined SUTD in 2019 as head of the Pillar for Engineering Product Development. He has been the associate provost of research since 2022. Previously, he had a distinguished career at NTU spanning nearly three decades, holding key positions including head of division and chair of the School of Mechanical and Aerospace Engineering, and serving as executive director of the Singapore Centre for 3D Printing. Recognized for his services, he received the Public Administration Medal (Silver) in 2014. A leader in additive manufacturing for over 34 years, he won the International FAME Award in 2018. He has contributed more than 500 journal and conference papers, books, book chapters, and patents. He was a highly cited researcher in 2022 and 2023 according to Clarivate Analytics.

**Dr Sun Sumei**

Distinguished Institute Fellow; Acting Executive Director; Institute for Infocomm Research (I2R) Agency for Science, Technology, and Research (A*STAR)

Professor
Singapore Institute of Technology

Adjunct Full Professor
National University of Singapore

Dr Sun Sumei's research interests include next-generation wireless communications, applied artificial intelligence, and joint communication-sensing-computing-control design. In her current position, she leads A*STAR I2R's R&D to deliver globally competitive and locally relevant technologies in artificial intelligence, communications, and cybersecurity, for Singapore's digital transformation. She is a fellow of IEEE, a member of the Vehicular Technology Society through 2024, and chair of the IEEE Communications Society's Fellow Evaluation Committee through 2025. She was an elected member of the board of governors of the IEEE Communications Society from 2021 to 2023, and director of the IEEE Communications Society Asia Pacific Board from 2020 to 2021. She was the recipient of the 2014 Royal Academy of Engineering's Distinguished Visiting Fellowship, the 2022 National Day Award-Public Administration Medal (Bronze), and the 2023 IEEE VTS Women's Distinguished Career Award.

**Ms Jessica Tan**

Member, Board of Directors
Ping An Group

Ms Jessica Tan was most recently the group co-CEO and executive director of the Ping An Group, overseeing 10 companies in the Group's insurance, healthcare and technology businesses. Under her leadership, the Group grew from the world's 30th largest financial conglomerate to the 5th largest with about US\$20 billion in operating profits, serving 690 million online/app users and 229 million financial customers. In addition, Ping An made major strides in technology and innovation, with over 49,000 invention patents applications globally, ranking 1st in fintech and healthtech globally for 5 consecutive years. She has served as a member of several global government advisory committees and has been ranked amongst Fortune's top 5 Most Powerful Women for 5 consecutive years, and Forbes' The World's 100 Most Powerful Women since 2019. Before joining Ping An, she served as a global partner at McKinsey & Company. She graduated from the Massachusetts Institute of Technology (MIT) with a master's degree in electrical engineering and computer science and two bachelor's degrees, in electrical engineering and economics.

**Mr Teo Swee Ann**

CEO and Founder
Espressif Systems

Mr Teo Swee Ann is the CEO and founder of Espressif Systems, an AI of things semiconductor company headquartered in Shanghai, with offices in India, Czechia, Singapore and Brazil. Before establishing Espressif, he worked at leading chip companies such as Marvell and Montage Technology, where he held key roles, and gained extensive experience in chip design and business development. Under his leadership, Espressif has become a significant player in the industry, known for its innovative microcontroller units, wireless connectivity chipsets, and cloud software offerings, which are crucial for internet-of-things devices. He has been a member of the Singapore Management University's International Advisory Council in China since 2021.

**Mr Wong Kim Yin**

Group President & CEO
Sembcorp Industries Ltd

Mr Wong Kim Yin has spearheaded the transformation of Sembcorp's portfolio from brown to green since joining the company in 2020. He actively contributes to the global energy transition through his role as the vice chair of Asia in the World Energy Council. He also serves on the boards of the National Research Foundation, the Inland Revenue Authority of Singapore, DSO National Laboratories and the Health Promotion Board. Prior to working at Sembcorp, he was the group CEO of Singapore Power (SP Group), and also held senior roles at Temasek International and the AES Corporation.

The Academy of Engineering, Singapore (SAEng) actively seeks candidates to join the academy as fellows.

To submit a nomination, please submit the following details with the candidate's CV and send it to secretariat@saeng.sg.

Nomination Criteria

1. The candidate must have resided in Singapore in the three years preceding their nomination.
 - a. Applicants who do not satisfy the three-year residential requirement prior to application cannot be considered.
2. At the national and/or international level, candidates should have:
 - Made impactful contributions to engineering practice, research, and/or education; or
 - Demonstrated outstanding entrepreneurship and leadership; or
 - Created innovations that have been successfully translated into practice; or
 - Shown leadership in the management and professional growth of the engineering industry, educational institutions, or research organisations.

National-level contributions to Singapore should be highlighted. Examples include serving on government statutory boards as a chair/member, serving on high-level technical committees, representing Singapore in major international organizations or professional societies, and receiving National Day Awards.

At the international level, the candidate can have served on scientific and advisory committees or judging panels at major scientific and academic events, or their work should have brought Singapore to international prominence in a particular field.

3. SAEng also welcomes candidates who are early in their careers but are expected to make major contributions in the years to come.

Review Process

1. Candidates must be nominated by one fellow and sponsored by another fellow.
 - a. A fellow cannot nominate more than one candidate and cannot sponsor more than one candidate.
 - b. The nominator and the sponsor should be in the same field as the candidate.
 - c. The nominator and the sponsor must each provide a letter of support.
 - d. To avoid conflicts of interest, members of the Fellows Selection Committee and members of the Executive Committee cannot be nominators or sponsors.
 - e. After the nomination, the nominator and sponsor cannot communicate with the candidate on election matters as candidates' credentials and election deliberations are strictly confidential.
2. Nominations will be reviewed on a yearly basis, in December. To be considered for assessment in any given year, nominations must be received by the 30th of October that year. Nominations received after the 30th of October will be considered the following year.
3. Successful candidates will be notified in February of the subsequent year.
4. A maximum of five fellows can be elected per year, unless there are exceptionally strong candidates in a particular year, subject to approval by the president of the academy.
5. The nomination of candidates who are not successful will automatically be carried forward for the next two years subject to their consent. They can provide updates to the secretariat in October each year. After two years, a fresh submission and new nomination letters will be required.

Our heartiest congratulations to the following fellows who have received the honours and awards mentioned below.

Professor Chen Xiaodong

- Bestowed the Nanyang Research Award by Nanyang Technological University (NTU) for his significant contributions in the field of mechanomaterials and flexible electronics.
- Awarded the Dan Maydan Prize by the Center for Nanoscience and Nanotechnology at the Hebrew University in Jerusalem for his seminal contributions to novel nanomaterials and nanodevices, in particular for flexible electronics, nano-bio and cyber-human interfaces, and for alternative energy applications.
- Winner in the Falling Walls Foundation's Engineering and Technology Category, for his contribution to developing a universal interface to assemble stretchable devices simply and quickly, and effectively overcoming the challenge of fragile connections in such devices.
- Won the Kabiller Young Investigator Award from the International Institute for Nanotechnology at Northwestern University for outstanding contributions to developing nanomaterials, nanotools and nanotechnologies.
- Presented the Nano Energy Award by the Beijing Institute of Nanoenergy and Nanosystems in the Chinese Academy of Sciences for achieving significant progress in interdisciplinary research enhancing energy storage performances under extreme conditions via nano-enabled tools.

Professor Er Meng Hwa

- Bestowed the Nanyang Award for Meritorious Achievement by NTU Singapore for his outstanding contributions of a long-term nature, which enabled the university to achieve significant milestones in its academic and administrative excellence journey and continuing to stay the course in upholding the spirit of excellence to a wider community, after leaving the university.

Mr Gan Seow Kee

- Awarded the Public Service Medal by the President of the Republic of Singapore at the 2023 National Day Awards for rendering commendable public service and for his achievements in business and service to the community.

Professor Goh Thong Ngee

- Awarded the prestigious Ishikawa-Kano Gold Medal by the Asian Network for Quality in recognition of his international accomplishments and contributions to the theory and application of Quality methodologies with exceptional leadership in advancement of techniques for quality excellence in Asian culture and social environments, and for an outstanding career dedicated to the integration of quality tools to practices in industry, government, and various service sectors.

Professor Guan Cuntai

- Bestowed the Nanyang Research Award by NTU Singapore for his significant contributions to brain decoding algorithms and pioneering work in applying brain-computer interface to various medical applications.

Professor Ho Teck Hua

- Awarded the Public Administration Medal (Gold) by the President of the Republic of Singapore at the 2023 National Day Awards.

Er Lau Joo Ming

- Awarded the National Health Group (NHG) Silver Medallion for his contributions over the last 10 years to healthcare as a board member of NHG, chair of the Tan Tock Seng Institutional Committee, the NHG Infrastructure and Facilities Committee and the Novena Health City Master Plan Review Committee, and serving as a board member of Woodland Health Campus.

Professor Li Erping

- Won the 2023 IEEE Motohisa Kanda Award for the highest cited paper in 5 years, from 2018 to 2022, published in IEEE Transactions on EMC 2018, 60(3).
- Elected to the board of directors of the IEEE EMC Society from 2024 to 2026.

Professor Lian Yong

- Awarded the Mac Van Valkenburg Award by the IEEE Circuits and Systems Society for his technical contributions and leadership in biomedical circuits and systems.
- Winner of the 2023 IEEE Transactions on Biomedical Circuits and Systems Best Paper Award for the paper titled “A 13.34 uW Event-Driven Patient-Specific ANN Cardiac Arrhythmia Classifier for Wearable ECG Sensors”.

Professor Lim Chwee Teck

- Conferred the Lifetime Achievement Award for Mentoring in Science 2023 by the prestigious journal Nature in recognition of his support for early career researchers in their career development.
- Elected Fellow of the Institution of Engineers, Singapore for the worldwide recognition and his prominent achievements in biomedical engineering.

Professor David Lou

- Elected a member of the European Academy of Engineering in 2023.
- Named a fellow of the Singapore National Academy of Science (SNAS) in 2022.
- Won the Young Scientist Sustainable Development Goals Award (2023), which is jointly initiated by the World Young Scientist Summit and the International Research Center of Big Data for Sustainable Development Goals based in Beijing.
- Won the 36th Khwarizmi International Award (2023) from the Iranian Research Organization for Science and Technology (IROST).
- Ranked a highly cited researcher (in chemistry, materials science, physics and the environment) by Clarivate Analytics for 10 years, from 2014 to 2023.

Professor Ong Say Leong

- Conferred the title of honorary professor by Xi'an Jiaotong University, China, in recognition of his outstanding contributions and exceptional influence in the field of water resource management.

Professor Ooi Beng Chin

- Elected a foreign member of the Chinese Academy of Sciences.

Mr Quek Gim Pew

- Awarded the prestigious President's Science and Technology Medal for his pivotal role in developing Singapore's research ecosystem in critical areas including defence capabilities, space technology, advancing quantum engineering, artificial intelligence and high-performance computing.
- Bestowed the Outstanding Service Award by the National University of Singapore (NUS) for his outstanding achievements and contribution to the university and the nation.

Professor Tony Quek

- Named in Stanford University's "Top 2% of Scientists Worldwide 2023", for outstanding contributions to networking and telecommunications.

Mr Seah Moon Ming

- Conferred the IES Lifetime Engineering Achievement Award by the Institution of Engineers Singapore (IES) for his leadership and contributions that have benefitted the industry and community.

Professor Su Guanng

- Conferred the IES Lifetime Engineering Achievement Award by the Institution of Engineers Singapore (IES) in recognition of his immense contributions to education and the enhancement of Singapore's defence capabilities.

Professor Tan Thiam Soon

- Awarded the Meritorious Service Medal by the president of the Republic of Singapore at the 2023 National Day Awards in recognition of his significant contributions to Singapore's education and infrastructure development.

Professor Wang Chien Ming

- Elected as a member of the European Academy of Sciences and Arts.

Dr Yang Yi Yan

- Awarded the Long Service Medal by the president of the Republic of Singapore at the 2023 National Day Awards.

Professor Yeo Kiat Seng

- Named in Stanford University's Top 2% of Scientists Worldwide 2023, for contributions to the field of engineering and integrated circuit design.
- Named the World's AI Top Scientist by the International Artificial Intelligence Industry Alliance (AIIA) for contributions to advancing and promoting AI research, education and applications in 2023.
- Awarded the Top Scientist Laboratory by Tianjin City, China, in 2023.

Professor Yeoh Lean Weng

- Conferred the title of honorary fellow by the Institution of Engineers Singapore (IES) for his dedication to IES and contributions to the advancement of research and development and sustainable development in Singapore.
- Awarded the Long Service Medal by the president of the Republic of Singapore at the 2023 National Day Awards.

SAEng Fellow Professor Cheong Hee Kiat is the New Chairman of the Engineering Accreditation Board (EAB) of Singapore

Fellow of the Academy of Engineering, Singapore, (SAEng) Professor Cheong Hee Kiat who is emeritus president of the Singapore University of Social Sciences (SUSS) has been appointed the new chairman of the Engineering Accreditation Board (EAB) of Singapore, from 2024 to 2027, taking over from SAEng fellow, Professor Lim Kiang Wee of the Singapore Institute of Technology (SIT).

The EAB which was set up by IES in May 2002 as a body to accredit engineering programmes that are delivered and awarded by the various universities in Singapore. IES is the Singapore signatory to the Washington Accord, with effect from June 2006. The Washington Accord is an international agreement which provides a mechanism for mutual recognition of the substantial equivalence of engineering academic programmes in satisfying the academic requirements for the practice of engineering at the professional level. The processes, policies and procedures for granting accreditation to engineering academic programmes by IES is administered by the EAB.

► Events & Meetings

SAEng Gears Up for Growth: 13th AGM Highlights Funding, Outreach, and Collaboration

The Academy of Engineering, Singapore (SAEng) held its 13th Annual General Meeting (AGM) on August 8th, 2023, at the Institution of Engineers, Singapore. Members gathered to discuss key achievements, financial plans, and exciting initiatives for the future.

Then-Secretary Professor Aaron Thean presented the Secretary's Report, highlighting the academy's strong membership base and the achievements of its fellows. Treasurer Professor Liu Bin outlined the financial status, emphasising the need for increased funding to fuel outreach efforts and pursue impactful projects. President Professor Ho Teck Hua announced plans to secure funding from the National Research Foundation, underscoring the importance of expanding the academy's activities.

Members actively brainstormed ideas, suggesting flagship forums, joint initiatives with the Ministry of Education and the Institution

of Engineers, Singapore, and expanding outreach to high school teachers. These initiatives aim to inspire future generations of engineers and strengthen ties with key stakeholders.

Professor Ho proposed nominees for the executive committee (as shown on page 8), emphasising their diverse expertise and dedication to the academy's mission. The nominees were supported and elected, marking a new chapter in the academy's leadership.

The 13th AGM concluded with a sense of optimism and commitment to driving growth. With a focus on securing funding, fostering engineering education outreach, and strengthening collaboration, SAEng is poised to make significant contributions to the engineering landscape of Singapore.

Leadership of the 13th AGM Executive Committee



Professor Ho Teck Hua
President



Professor Guo Yongxin
Secretary



Professor Liu Bin
Treasurer



Mr Dalson Chung
Ex-Officio-President IES



Dr Richard Kwok
Immediate Past President IES



Professor Chong Hee Kiat
Ordinary Member



Professor Chong Kee Sen
Ordinary Member



Professor Chou Siaw Kiang
Ordinary Member



Professor Er Meng Hwa
Ordinary Member



Professor Hang Chang Chieh
Ordinary Member



Professor Lee Der-Horng
Ordinary Member



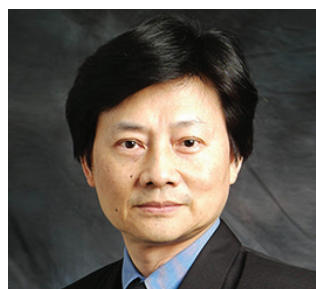
Professor Lee Shiang Long
Ordinary Member



Professor Lim Kiang Wee
Ordinary Member



Professor Phoon Kok Kwang
Ordinary Member



Professor Andrew Nee
Ordinary Member



Mr Seah Moon Ming
Ordinary Member



Professor Yeoh Lean Weng
Ordinary Member

Making a Donation

The Academy of Engineering, Singapore, is a not-for-profit entity registered in Singapore, funded by contributions from individuals and private organisations. Your donations enable the academy to develop and sustain projects to attract aspiring engineers, encourage innovation, and provide support to advance and promote excellence in engineering, and also improve the public awareness and understanding of engineering in Singapore.

To make a contribution to the academy, please contact secretariat@saeng.sg

Our Donors

The Academy has received a total of \$207,070 from organisations and individual donors thus far. We would like to express our sincere gratitude to all the generous individuals and organisations that have supported the academy over the years. Here is our 2011-2023 Honour Roll of Donors:

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Zhang Daohua
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SM Teo Chee Hean

13th AGM Executive Committee

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Ho Teck Hua

Secretary
Guo Yongxin

Treasurer
Liu Bin

Ex-officio - President IES
Dalson Chung

Ex-officio - Immediate Past
President IES
Richard Kwok

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Cheong Hee Kiat
Chong Kee Sen
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Er Meng Hwa
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c/o Institution of Engineers
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