

# THE 6<sup>th</sup> STS FORUM ASEAN-JAPAN WORKSHOP IN SINGAPORE

## PROGRAMME BOOK

- HUMAN RESOURCE DEVELOPMENT  
AND BRAIN CIRCULATION
- FUTURE OF MANUFACTURING



23 April 2019  
Grand Copthorne Waterfront Hotel  
Singapore

# INTRODUCTION

The Science and Technology in Society forum (STS forum), established in 2004 by former Japanese Finance Minister Koji Omi, is an annual gathering of global leaders from various sectors of society-- government, academia, private sector and industry-- with the aim of discussing the opportunities by which science, technology, and innovation (STI) can help address the issues and problems facing mankind. To give focus on the STI needs, capabilities, challenges and opportunities in the region, the ASEAN-Japan Workshop was launched, creating another marked platform for Japan and ASEAN Member States to gather and discuss specific areas of interest in STI cooperation.

The first Workshop was held in Singapore in May 2014, attended by over 70 leaders from ASEAN's scientific communities. The next Workshop in Kuala Lumpur, Malaysia, in June 2015 focused on empowering youth and women, as well as their roles in the field of S&T. In June 2016, the third Workshop was hosted in Bangkok, Thailand, wherein the discussions centered on enabling small and medium enterprises and global companies in the era of ASEAN economic integration through technological innovations. The fourth Workshop, in April 2017 held in Bali, Indonesia, pondered on innovations for sustainable development. Finally, at the fifth Workshop in Cebu, Philippines held last April 2018, participants from Japan and ASEAN Member States gathered again to engage in fruitful discussion on the topics of Technology Transfer, Artificial Intelligence and Society 5.0.

This year, the 6th ASEAN-Japan Workshop hosted in Singapore will be guided by the two themes of "Science and Technology Cooperation between ASEAN and Japan: human resource development and brain circulation" and "Future of Manufacturing". By harnessing the rich expertise across the different fields, the Workshop provides the opportunity to shape the synthesis of ideas and contribute to the shared vision of the future society.

The 6th ASEAN-Japan Workshop is co-organized by the STS forum and Singapore's Agency for Science, Technology and Research (A\*STAR), and generously supported by the Embassy of Japan in Singapore, and the Japan External Trade Organization (JETRO).



# WELCOME MESSAGE



It is my pleasure to welcome you to the Workshop on Innovation, Science and technology Cooperation between ASEAN and Japan.

The rapid progress of science and technology has supported economic growth and enriched our quality of life on the one hand. But on the other hand, science and technology has brought about new environmental, ethical, and security problems. We call these the lights and shadows of science and technology. We must strengthen the lights, and control the shadows, of science and technology.

Science and technology issues affect all of us today. We must think of them as something that concerns us personally, not leaving them only to science and technology professionals. The problems also cannot be solved by one or two countries alone, and therefore it is important for people from all over the world to gather and discuss the issues.

Based on the document “Shared Vision, Shared Identity, Shared Future” issued by Prime Minister Shinzo Abe and ASEAN leaders in December 2013, this Workshop will explore how Japan and ASEAN nations can deepen cooperation in innovation, science and technology, and human resources development. I believe that such cooperation between Japan and ASEAN countries is important not only for Asia but for development on a global scale.

The aim of this Workshop is to promote exchanges of opinion leading to positive, forward-looking ideas and concepts that can be implemented to contribute to future development in Asia and throughout the world. I hope that this Workshop will serve as a catalyst toward making the ideas generated here today a reality.

Singapore, April 2019

A handwritten signature in black ink, which appears to read 'Koji Omi' followed by a stylized flourish.

**Koji Omi**

Founder and Chairman

Science and Technology in Society forum (STS forum)

# PROGRAMME

Tuesday, 23 April 2019

Time	Agenda
08:30 – 09:00	Registration (Welcome tea & coffee)
09:00 – 09:20	Opening Address: <b>Mr. Koji Omi</b> , Founder and Chairman, STS forum, Japan <b>Ms. Chan Lai Fung</b> , Chairman, Agency for Science, Technology and Research (A*STAR)
09:20 – 09:30	Welcome Remarks: <b>H.E. Mr. Jun Yamazaki</b> , Ambassador of Japan to Singapore <b>Mr. Yasukazu Irino</b> , Executive Vice President, Japan External Trade Organization (JETRO)
9:30 – 10:00	Photo session & Coffee Break – All participants
10:00 – 12:00	<b>SESSION 1: Science and Technology Cooperation between ASEAN and Japan: Human Resource Development and Brain Circulation</b>
	Chair: <ul style="list-style-type: none"> <li>◦ <b>Prof.Dr.Ir. Bambang Subiyanto</b>, Former Vice Chairman, The Indonesian Institute of Sciences (LIPI), Indonesia</li> </ul>
	Speakers: <ul style="list-style-type: none"> <li>◦ <b>Prof. Motoko Kotani</b>, Executive Director, RIKEN, Japan</li> <li>◦ <b>Mr. Yoshio Yamawaki</b>, Senior Deputy minister, Ministry of Education, Culture, Sports, Science and Technology (MEXT), Japan</li> <li>◦ <b>Dr. Yoshimasa Goto</b>, Executive Director, Japan Science and Technology Agency (JST), Japan</li> <li>◦ <b>Dr. Kayo Inaba</b>, Executive Vice-President for Gender Equality, International Affairs, and Public Relations, Kyoto University, Japan</li> <li>◦ <b>Prof. David Chan</b>, Director, Behavioural Sciences Institute, Singapore Management University, Singapore</li> <li>◦ <b>Mr. Lien Choong Luen</b>, General Manager (Singapore), Go-Jek, Singapore</li> <li>◦ <b>A/Prof. Jeremy Lim</b>, Partner, Health and Life Sciences Consulting Practice, Oliver Wyman, Singapore</li> <li>◦ <b>Mr. Has Bunton</b>, Secretary General, The National Science and Technology Council (GS-NSTC), Cambodia</li> <li>◦ <b>Dr. Mohd Nor Azman Hassan</b>, Deputy Secretary General (Science, Technology and Innovation), Ministry of Energy, Technology, Science, Climate Change and Environment, Malaysia</li> </ul>
	Discussion
	Table back
	Wrap-up by Commentators <ul style="list-style-type: none"> <li>◦ <b>Dr. Maria Cynthia Rose Banzon Bautista</b>, Vice President for Academic Affairs, Office of the Vice-President for Academic Affairs, University of the Philippines, Philippines</li> <li>◦ <b>Dr. Chadamas Thuvasethakul</b>, Executive Vice President, National Science and Technology Development Agency (NSTDA), Thailand</li> </ul>
12:00-13:30	Lunch Break



# PROGRAMME

Tuesday, 23 April 2019

Time	Agenda
13:30-15:30	<b>Session 2: Future of Manufacturing</b> <p>Chair:</p> <ul style="list-style-type: none"> <li>Dr. David Low, CEO, Advanced Remanufacturing and Technology Centre (ARTC), A*STAR</li> </ul> <p>Speakers:</p> <ul style="list-style-type: none"> <li>Mr. Shoji Watanabe, Deputy Director-General, Industrial Science and Technology Policy and Environment Bureau, Ministry of Economy, Trade and Industry (METI), Japan</li> <li>Dr. Satoshi Sekiguchi, Vice President, National Institute of Advanced Industrial Science and Technology (AIST), Japan</li> <li>Mr. Fumio Otani, Director, Senior Vice President, Corporate Strategic Planning Division, Toshiba Energy Systems &amp; Solutions Corporation, Japan</li> <li>Dr. Alpesh Patel, Director of the Digital Capabilities Centre, McKinsey &amp; Company, Singapore</li> <li>Dr. Evert Helms, Managing Director &amp; Technical Director SEA, Pepperl+Fuchs Asia Pte. Ltd., Singapore</li> <li>Mr. Wouter Van Wersch, President &amp; CEO APAC, General Electric, Singapore</li> <li>Dr. Ir. Hammam Riza M.Sc, Chairman, Agency for the Assessment and Application of Technology (BPPT), Indonesia</li> <li>Dr. Rezal Khairi Ahmad, Chief Executive Officer, CEO's Office, NanoMalaysia Berhad, Malaysia</li> <li>Dr. Wilaiporn Chetanachan, Principal Innovation Advisor, Office of the President and CEO, The Siam Cement PLC, Thailand</li> <li>H.E. Bui The Duy, Deputy Minister, Viet Nam Ministry of Science and Technology, Viet Nam</li> </ul> <p>Discussion</p> <p>Table back</p> <p>Wrap-up by Commentators</p> <ul style="list-style-type: none"> <li>Dr. Mohd Yusoff Sulaiman, President &amp; Chief Executive Officer, Malaysian Industry-Government Group for High Technology (MIGHT), Malaysia</li> <li>Dr. Raphael Guerrero, Acting Dean, School of Science &amp; Engineering Dean's Office, Anteneo de Manila University Philippines</li> </ul>
15:45 - 16:00	Coffee Break
16:00 -16:20	<p>Concluding Remarks:</p> <p><b>Mr. Frederick Chew</b>, Chief Executive Officer, Agency for Science, Technology and Research (A*STAR)</p> <p><b>Mr. Koji Omi</b>, Founder and Chairman, STS forum, Japan</p>
16:20 - 17:30	Networking Reception hosted by A*STAR



# BIOGRAPHY



## Mr. Koji Omi

Founder and Chairman,  
Science and Technology in Society forum (STS forum)

Koji Omi was born in 1932 in Gunma Prefecture, Japan. After graduation from Hitotsubashi University in 1956, he joined the Ministry of International Trade and Industry (MITI). On an assignment with MITI, he served as Consul at the Japanese Consulate in New York from 1970 to 1974. He established his reputation for proactive action in acquiring up-to-date world energy related information during the first oil shock in 1973.

After assuming various key posts at MITI, such as Director of the South Asia & Eastern Europe Division, Trade Policy Bureau, and Director of the Small Enterprise Policy Division, Small & Medium Enterprise Agency (S & MEA), Koji Omi resigned from MITI in 1982 to run for the House of Representatives (lower house). He was elected in 1983 for the No.1 Gunma district with the largest number of votes won by a new independent candidate. During his 26 years of service until August 2009 in the House, Koji Omi held prominent positions in the ruling Liberal Democratic Party (LDP) and served three times as Cabinet Member namely Minister of Finance (2006 – 2007), Minister of State for Science and Technology Policy for Okinawa and Northern Territories Affairs (2001-2002), and Minister of State for Economic Planning (1997 – 1998).

Koji Omi is considered a key political figure and one of the most influential in the field of science and technology in Japan. One of his achievements includes the central role he played in enacting the Fundamental Law of Science and Technology in 1995. This law has contributed greatly toward making Japan a science and technology-oriented nation. As Minister of State for Okinawa and Northern Territories Affairs, and for Science and Technology, Koji Omi advocated for, and was very influential in promoting, the founding of the Okinawa Institute of Science and Technology, an international and interdisciplinary graduate university. In 2004 he founded the Science and Technology in Society (STS) forum, a non-profit organization, with the aim of building a worldwide network among scientists, policy makers, business people and journalists. STS forum has been successfully held annually in Kyoto, Japan, to discuss the “lights and shadows” of science and technology for the sake of humankind.

Koji Omi was awarded an Honorary Doctorate of Science Policy & Technology by Universiti Teknologi Malaysia (UTM) in 2013 and another honorary doctorate from University of York in January 2014, and from University of Quebec in June 2014.

# BIOGRAPHY



## **Ms. Chan Lai Fung**

Chairman,  
Agency for Science, Technology and Research

Ms Chan Lai Fung is the Chairman of A\*STAR. She was appointed to her current position on 1 April 2019 and assumes the responsibility for charting A\*STAR's strategic direction and priorities under the national Research, Innovation and Enterprise (RIE) plan.

Ms Chan is also currently Permanent Secretary (National Research & Development).

Prior to that, Ms Chan was Permanent Secretary (Education) from 2012 to 2019. She was appointed Permanent Secretary (Finance) (Performance) from 2009 to 2012; and Permanent Secretary (Law) from 2006 to 2010. She has also served in various portfolios in the former Ministry of Communications and Information, Ministry of Health, Ministry of Finance, Public Service Division of the Prime Minister's Office, Ministry of the Environment and Ministry of Trade and Industry.

Ms Chan is a board member of PSA International Pte Ltd.

Ms Chan joined the Singapore Administrative Service in 1986 after graduating from Monash University in Australia with a Bachelor of Economics (First Class Honours) on a Colombo Plan Scholarship.

# BIOGRAPHY



## **Mr. Frederick Chew** Chief Executive Officer, Agency for Science, Technology and Research

Mr Frederick Chew is the Chief Executive Officer of A\*STAR, Singapore's lead public sector agency that spearheads economic oriented research to advance science and develop innovative technology to further economic growth and improve lives.

Helming the science and technology agency of over 4,100 research staff, Mr Chew drives the implementation of A\*STAR's strategies, initiatives, and programmes, and the building of A\*STAR's organisational capabilities. He works to share A\*STAR's mission and vision with public and private sector stakeholders, and to strengthen collaboration with partners across the research, innovation and enterprise ecosystem.

Mr Chew is concurrently the Deputy Secretary (Technology) at the Ministry of Defence (MINDEF). In this role, he has been instrumental in optimising the Defence Technology ecosystem, in particular strengthening MINDEF's partnership with industry.

Mr Chew also held various key positions in MINDEF and the Singapore Armed Forces (SAF), including Director of Joint Operations, Commander of Maritime Security Task Force/Maritime Security Command and Head of Naval Plans.

Mr Chew is currently a Board Member of the Defence Science & Technology Agency (DSTA) and DSO National Laboratories.

Mr Chew graduated with a Masters of Engineering (First Class Honours) from the Imperial College of Science, Technology and Medicine. He also holds a Master of Science in Management from Stanford University. Mr Chew is an SAF Overseas Scholar. He is also a recipient of the Lee Kuan Yew Scholarship and Fulbright Award.

# BIOGRAPHY



## **H.E. Mr. Jun Yamazaki** Ambassador of Japan to Singapore

Jun Yamazaki is currently the Ambassador of Japan to Singapore (since October 2018). He graduated with a degree of Bachelor of Arts, Faculty of Arts and Sciences at The University of Tokyo in 1980. In April 1980, he joined the Ministry of Foreign Affairs and starts his career. He served as, Senior coordinator for APEC, Developing Economies Division, Economic Affairs Bureau (January 1996), Director, International Peacekeeping Division, Foreign Policy Bureau (May 1997), Director, Second Southeast Asia Division, Asian Affairs Bureau (April 1998), Counsellor, Embassy of Japan in Indonesia (October 1999), Counsellor, Permanent Mission of Japan to the United Nations in the New York (May 2002), Deputy Director-General, Consular Affairs Bureau and Deputy Director General, International Cooperation Bureau (Global Issues) ( August 2007), Assistant Secretary-General, Controller, UN Secretariat in New York (August 2008), Ambassador, Permanent Mission of Japan to the United Nations [Not the Permanent Representative] (October 2011), Chief of Protocol(July 2014), Ambassador of Japan to Sweden (September 2015).

# BIOGRAPHY



## **Mr. Yasukazu Irino**

Executive Vice President,  
Japan External Trade Organization (JETRO), Japan

Mr. Yasukazu Irino has been Executive Vice President, Japan External Trade Organization (JETRO) since October 2017. Prior to this, he served as Deputy Director-General for Trade Policy, Trade Policy Bureau, Ministry of Economy, Trade and Industry (METI). Mr. Irino graduated with a Law degree from Tokyo University and upon graduation he joined METI in 1987. After then, he has held various positions including experience working overseas as visiting fellow at Stanford University in the US and Commercial Counsellor at Embassy of Japan in UK, Head of Singapore Office, Chief Representative for Asia and Oceania at NEXI Singapore, assigned by Ministry of Economy, Trade and Industry (METI).

# SESSION I

## Science and Technology Cooperation between ASEAN and Japan: Human Resource Development and Brain Circulation

ASEAN Member states have made significant investments to train young scientists, researchers, engineers and also future business leaders. However, many would leave their own countries to go abroad in order to seek new opportunities, and better working conditions. What would make hopeful talent want to take an active role in their own countries, or how to take advantage of their developed experience again, and pass back the know-how they acquired to improve science and technology in their own countries.

We would like to get back to the topic, “brain circulation” once again, which was chosen for the first ASEAN-JAPAN Workshop held in 2014. We achieved consensus that in order to stimulate innovation between ASEAN countries and Japan it is important to strengthen network of S&T and Innovation community from the R&D phase to commercialization. Moreover, there were fruitful discussions over promoting young talent exchange programs on a continuing basis between ASEAN countries and Japan and emphasizing brain circulation in entrepreneurial phase. Fresh and innovative perspectives of all participants from the 6th ASEAN-JAPAN workshop will surely blow a new wind to this topic once more.

ASEAN and Japan's cooperation is guided by an image of “Shared Vision, Shared Identity, Shared Future” which was adopted by the ASEAN leaders and Prime Minister Shinzo Abe in 2013. How this can be achieved, how ASEAN and Japan can deepen their cooperation in science and technology, innovation and human resources development, and how vital technologies will be dispersed to the less advanced economies to support their growth and development—these are some aspects for consideration to generate forward-looking ideas to strengthen ASEAN-Japan cooperation.





## CHAIR | Session I



### **Prof. Dr. Ir. Bambang Subiyanto**

Former Vice Chairman, The Indonesian Institute of Sciences (LIPI), Indonesia

2017: Acting Chairman of the Indonesian Institute of Sciences (LIPI); 2016 - Now: Vice Chairman of the Indonesian Institute of Sciences (LIPI); 2014-2016: Deputy Chairman for Scientific Services of LIPI; 2008-2014: Director of the Center for Innovation of LIPI; 2002-2008: Director of Research and Development Unit for Biomaterial of LIPI.

# SPEAKERS | Session I



## Prof. Motoko Kotani

Executive Director, RIKEN, Japan

Director, Professor and Principal Investigator of the WPI Advanced Institute for Materials Research (WPI-AIMR) and Professor, Mathematical Institute, Graduate School of Science at Tohoku University, Motoko Kotani specializes in geometry, especially, discrete geometric analysis. She received the 25th Saruhashi Prize for her contribution to Discrete Geometric Analysis on crystal lattice. She is an executive member of the Council for Science, Technology and Innovation, and

the Cabinet Office, a member of the Science Council of Japan, the President of the Mathematical Society of Japan, and Associate Executive Vice President (Research) of Tohoku University. She was appointed Executive Director of RIKEN in April 2017.



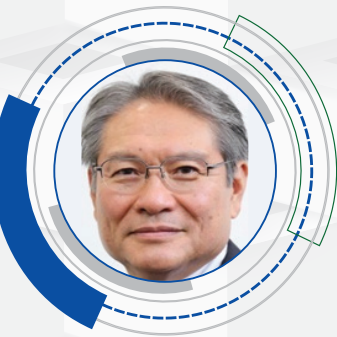
## Mr. Yoshio Yamawaki

Senior Deputy Minister, Ministry of Education, Culture, Sports, Science and Technology (MEXT), Japan

Yoshio Yamawaki was appointed Senior Deputy Minister, MEXT on July 2018. He started his career at the Science and Technology Agency in 1984. During his career, he served in various fields of Science and Technology Policy, such as Nuclear Energy. He also worked at the Permanent Mission of Japan to the International

Organizations in Vienna. He previously served as Deputy Director-General for Research Promotion Bureau, Ministry of Education, Culture, Sports, Science, and Technology (MEXT), 2013–2014; Director General for International Affairs, MEXT, 2014–2016; Director General for Science, Technology and Innovation, Cabinet Office, 2016–2018.

# SPEAKERS | Session I



## Dr. Yoshimasa Goto

Executive Director, Japan Science and Technology Agency (JST), Japan

After receiving his doctoral degree in Engineering from Nagoya University, Dr. Goto joined the Panasonic Corp. in 1981. He served as a visiting researcher at the Computer Science Department, Carnegie Mellon University while appointed Director of R&D Intellectual Property Rights Center, and Corporate Senior Director at the Panasonic Corp. He served as a Professor and Director of

Intellectual Property Division, Nagoya University as well. Since 2015, he has been serving as an Executive Director of JST, responsible for the Departments of: Research and Development Reform, Innovation Research, Research Projects, Green Innovation (ALCA), Industrial-Academic Collaboration, and Information Planning. He also received his doctoral degree in Technology Management from Ritsumeikan University in 2016.



## Dr. Kayo Inaba

Executive Vice-President for Gender Equality, International Affairs, and Public Relations, Kyoto University, Japan

Dr. Inaba served as dean of Graduate School of Biostudies from Apr 2003 to Mar 2005, and director of the Center for Women Researchers in Kyoto University from 2007 to 2014. She received her doctorate in science. She received the L'Oréal-UNESCO for Women in Science Award 2014 and Medal with Purple

Ribbon 2016. Dr. Inaba is known for her work on demonstrating the importance of dendritic cells, which act as “sentinels” of the immune system. She has also shown that these cells loaded with antigen in vitro stimulate immune responses by reinfusing into the body. In addition, she developed a method to generate dendritic cells from bone marrow precursor cells — a key advancement that could lead to a new type of anticancer treatment or open a new path for cellular therapy.

# SPEAKERS | Session I



## Prof. David Chan

Director, Behavioural Sciences Institute,  
Singapore Management University, Singapore

Prof. David Chan is Director of the Behavioural Sciences Institute and Professor of Psychology at Singapore Management University. He has received numerous international awards including the Scientist-Practitioner Presidential Recognition award from the Society for Industrial and Organizational Psychology and he is the first non-American to receive the Distinguished Early Career Contributions

Award. His works have been cited over 10,000 times in various disciplines. He has served as Editor and board member on several journals and chairman or member on various national councils, taskforces, scientific advisory panels and boards of directors. He is the first scientist in the world to be conferred the Elected Fellow status from all six major international psychological associations.



## Mr. Lien Choong Luen

General Manager (Singapore), Go-Jek, Singapore

Mr. Lien likes to seek the path of most resistance, and has acquired a taste for challenging vacations over the years. He has summited Mount Everest and K2, run ultramarathons across the Gobi Desert and the Amazon jungle, skied to the North Pole and been solo in the Arctic Circle in winter and endured extremes from -50°C to +50°C. In his former day job, he spent several years as a McKinsey consultant in China, focusing on the consumer, technology and healthcare sectors,

before leading the McKinsey Centre for Government (SEA) working with different public and private sector organisations around South-East Asia. He spent half a year in Sierra Leone helping its government rebuild the healthcare sector post-Ebola crisis. Prior to McKinsey, Lien spent 14 years in the Singapore Army as a Special Forces officer, leading teams up to a 650-man battalion, and deployed for UN peace-keeping duties in East Timor. He graduated from US Ranger school and US Marines' officer course, and has trained with many regional Special Forces units. In the spirit of seeking challenges, he is now the Singapore head for Go-Jek, an Indonesian headquartered technology platform that started as a ride-hailing service, but has now grown into a super app. Singapore houses not just the local operations team, but also has a significant footprint of technologists working on Data Science, Payments, Food, Fraud and Product Engineering. This builds on his experience in both Ops and Technology as he had worked with the Singapore National Research Foundation developing their long-term innovation strategy.

# SPEAKERS | Session I

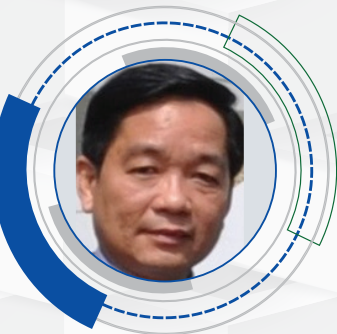


## A/Prof. Jeremy Lim

Partner, Health and Life Sciences Consulting Practice,  
Oliver Wyman Consultancies, Singapore

A/P Jeremy Lim (MD, MPH) is a Partner in Oliver Wyman's Asia practice. He advises senior officials at public sector agencies and furthermore has extensive experience consulting and advising multinational private and NGO clients on national and regional strategies for go-to-market plans and implementation, government engagement and public-private partnerships. The other part of his practice is with

health technology start-ups advising on growth strategies across Asia. Jeremy is also active in academia, and in 2013 authored *Myth or Magic: The Singapore Healthcare System*, a book that draws lessons from the Singapore health system for health reform efforts in other countries. Jeremy trained in both surgery and public health in Singapore and in the United States of America.



## Mr. Has Bunton

Secretary General,  
The National Science and Technology Council,  
Cambodia

Secretary General Has Bunton, currently heads the General Secretariat of the National Science and Technology Council (GS-NSTC), Kingdom of Cambodia. In his academia, he took up a position as Chairman of College of Science at Norton University, eventually becoming Professor of Computer Science in 2002. Secretary

General Bunton is a full member of the National Science and Technology Council, the highest political decision making authority in the area of Science and Technology, presided over by the Prime Minister of the Kingdom of Cambodia. His strong interest and background in science and technology has driven him to be a key founder of the NSTC and its General Secretariat, established in 2014 and 2015 respectively.

## SPEAKERS | Session I



### **Dr. Mohd Nor Azman Hassan**

Deputy Secretary General (Science, Technology and Innovation), Ministry of Energy, Science, Technology, Environment and Climate Change, Malaysia

Dr. Mohd Nor Azman Hassan is currently the Deputy Secretary General (Science) of the Ministry of Energy, Science, Technology, Environment and Climate Change. He oversees the policies and development of science, technology and innovation ecosystem to support the socio-economic development of the country. His previous positions were in the areas of higher education, policy and technological

development including industrial related technologies such as renewable energy, advanced materials and manufacturing, biotechnology and nanotechnology. He had extensive engagements with the industry especially the SMEs, in particular to communicate government's policies relating to STI. Dr. Azman holds a doctoral degree from Carnegie Mellon University, Pittsburgh, USA in the field of renewable energy technology and is trained in conducting Life Cycle Analysis (LCA). Dr Azman is also a registered Technologist with the Malaysian Board of Technologist.



# WRAP-UP COMMENTATOR



## **Dr. Maria Cynthia Rose Banzon Bautista**

Vice President for Academic Affairs, Office of the Vice-President for Academic Affairs, University of the Philippines, Philippines

Dr. Maria Cynthia Rose B. Bautista is currently Vice President for Academic Affairs of the University of the Philippines. She is former Dean of the UP College of Social Sciences and Philosophy, and Commissioner of the Commission on Higher Education. Dr. Bautista served on the advisory or governing boards of different institutions, and sat in the Executive Committee of the ASEAN Quality Assurance Network. She obtained her BA degree in Sociology from UP Diliman and her MS and PhD degrees in Sociology at the University of Wisconsin, Madison. Her awards include the National Academy of Science and Technology's Outstanding Young Scientist Award, the Ten Outstanding Women in the Nation's Service and the National Research Council of the Philippines' Achievement Award.



## **Dr. Chadamas Thuvasethakul**

Executive Vice President, National Science and Technology Development Agency (NSTDA), Thailand

Dr. Chadamas Thuvasethakul is the Executive Vice President of Thailand National Science and Technology Development Agency, and a member of the Board of Trustees of Kenan Foundation Asia. Presently she looks after S&T Human Resource Development. Examples of programs under her supervision are; Junior Science Talent Project, NSTDA Graduate Scholarships, TAIST-Tokyo Tech. She is also a deputy-secretary general of HRH Princess Maha Chakri Sirindhorn's Information Technology Foundation, which works on the application of ICT to enhance the quality of life of the under privileged. She received a Ph.D. in Health Policy and Administration from the University of North Carolina at Chapel Hill, U.S.A., and a Bachelor of Pharmaceutical Sciences (1st Class Honors) from Chulalongkorn University, Bangkok.



# SESSION 2

## Future of Manufacturing (FoM)

Industry 4.0 is transforming how products are created, how supply chains are managed and how value chains, including business models, are defined. As such, ASEAN and Japan must continue to keep abreast of critical industry trends impacting manufacturing as well as the development of technologies, including Digital Manufacturing, Industrial - Internet of Things (IIoT), Additive Manufacturing and Artificial Intelligence (AI). By harnessing the opportunities created by global technology trends and industry shifts, ASEAN and Japan can enhance their capabilities to develop new solutions and business models across a range of sectors.

ASEAN and Japan are aware of the need to prepare for Industry 4.0 and the majority have developed strategic plans to unlock the opportunities from Industry 4.0. For example, Singapore has published a report on her FoM technology strategies to transform Singapore into a technology innovation hub for manufacturing by: 1) creating public-private partnership (PPP) platforms to drive technology innovation, knowledge transfer and adoption; and 2) investing in novel and impactful Industry 4.0 technologies.

The 6th edition of the STS Forum ASEAN-Japan Workshop provides a conducive platform to build on the complementary strengths and shared interests of ASEAN and Japan, for active discussions amongst participants and greater adoption of Industry 4.0. Participants can learn about the challenges and opportunities for Industry 4.0 in the region and identify means to deepen the science, technology and innovation cooperation between ASEAN and Japan.



# CHAIR | Session 2



## Dr. David Low

CEO, Advanced Remanufacturing and Technology Centre (ARTC), A\*STAR, Singapore

Dr. David Low developed the ARTC from a conceptualised public-private partnership programme, focusing on remanufacturing capabilities in 2012, to a full-fledged A\*STAR Research Institute in 2017, focusing on translational advanced manufacturing and remanufacturing R&D with the industry. Under his leadership, the ARTC grew from a team of 6 core staff to over 250 core staff today. David

established the ARTC industry membership framework and spearheaded the signing of the legal membership agreement, spanning across an initial 19 companies in 2013 to over 70 industry members in 2019. The ARTC membership ecosystem brings together MNCs and OEMs, technology and service providers, and SMEs from the aerospace, heavy machinery and fast moving consumer goods (FMCG) sectors. ARTC has established strong ties with over 70 industry members including Coca-Cola, DMGMORI, Nestlé, Procter & Gamble, SAESL, Shell, Siemens, Zeiss, and over 30 SMEs. ARTC has co-created various solutions with its members, and in some instances, partnered with SMEs to commercialise solutions before implementation in their factories located in Singapore and around the world. Prior to joining ARTC, David was the Chief of Manufacturing Technology and the Head of Process Technology Research Centre at Rolls-Royce Singapore Pte Ltd, where he steered the organisation's pioneering efforts to develop advanced manufacturing capabilities in Singapore for global deployment. David also spent significant time in Rolls-Royce's global facilities in Germany, UK, US, Singapore and Sweden. For his outstanding contributions, he received the prestigious Sir Henry Royce Team Award for Engineering Excellence in 2012. Trained as a researcher in mechanical engineering and laser materials processing, David started his research career at SIMTech in 2002 and eventually held the appointment of Group Manager for Machining Technology. In 2007, David was presented the MTI Borderless Gold Award for establishing the A\*STAR Aerospace Programme. David has published over 50 journals, conferences, patents and book publications. His publications have attracted over 1300 citations with a H-index of 20. David received his PhD and Bachelor degree (First Class Honours) in Mechanical Engineering from the University of Manchester Institute of Technology (UMIST), now known as The University of Manchester. He received his Executive MBA from INSEAD and Tsinghua University. David is also on the board of governors at Singapore Polytechnic and an Adjunct Associate Professor at the School of Mechanical and Aerospace Engineering, Nanyang Technological University (NTU). He is a Fellow and Chartered Engineer of the Institution of Mechanical Engineers (IMechE) and a Senior Member of the Institution of Engineers Singapore (IES).

# SPEAKERS | Session 2

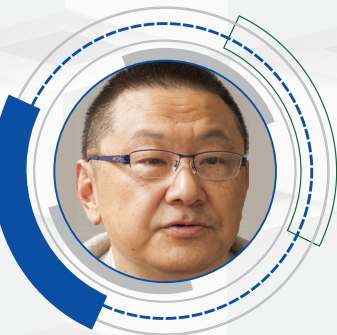


## Mr. Shoji Watanabe

Deputy Director-General, Industrial Science and Technology Policy and Environment Bureau, Ministry of Economy, Trade and Industry (METI), Japan

Mr. Watanabe has served as Deputy Director - General, for Industrial Science and Technology Policy at the Ministry of Economy, Trade and Industry (METI) since July, 2018. He also assumed Secretary - General of the Japanese Industrial Standards Committee (JISC). Prior to assuming his current roles, Mr. Watanabe

served in a number of METI's Director posts, for example as Director of the Commerce and information Policy Bureau, where he oversaw METI's policy related to the information industry, including information technology and cyber security, and the contents industry (2015 - 2018), Research and Development Division (2012 - 2015), Housing Industry Ceramics and Construction Materials Division (2012 - 2011), and New and Renewable Energy Division (2011 - 2008).



## Dr. Satoshi Sekiguchi

Vice President,  
National Institute of Advanced Industrial Science and Technology (AIST)

Dr. Satoshi Sekiguchi is currently Vice President of the National Institute of Advanced Industrial Science and Technology (AIST) in Japan. Additionally, he serves as the Director General of the Department of Information Technology and Human Factors. He continues to drive innovative developments in high-performance

computing from its system architecture to applications, including AIST's new AI Bridging Cloud Infrastructure (ABCI). His expertise in IT-based solutions to address society's challenges is helping to develop the next generation of technologies for global environmental monitoring, smart manufacturing for precision and quality, and AI security. He received Ph.D. in Information Science and Technology from the University of Tokyo, and is a member of the Science Council Japan.

## SPEAKERS | Session 2



### Mr. Fumio Otani

Director, Senior Vice President, Corporate Strategic Planning Division, Toshiba Energy Systems & Solutions Corporation, Japan

Feb.1958: Born in Tokyo, Mar.1981: Graduated from the Faculty of Technology, Tokyo Metropolitan University, Apr.1981: Joined Toshiba Corporation, Mar.2004: TOS Energy Malaysia Sdn. Bhd., Apr.2005: Senior Sales Manager, Thermal & Hydro Power Systems & Services Div., May.2007: Toshiba International Corporation US, Chairman & CEO, REGENCO LLC, June.2012: Corporate Representative for Asia, President & CEO, Toshiba Asia Pacific Pte. Ltd., June.2014: Executive Officer, Corporate Vice President, Sep.2015: Executive Officer, Corporate Senior Vice President, Corporate Representative to the Americas, Chairman & CEO, Toshiba America, Inc., Jan.2018: Director, Senior Vice President of Toshiba Energy Systems & Solutions Corporation, General Manager of Corporate Strategic Planning Division



### Dr. Alpesh Patel

Director of the Digital Capabilities Centre, McKinsey & Company, Singapore

Alpesh is the Leader of Digital Capability Centers (DCCs) in Asia. The DCCs drive the development of intellectual property by bringing together global experts in a collaborative setting. As the leader, Alpesh collaborates with colleagues to pursue cutting-edge insights in Industry 4.0 capabilities, energy efficiency, digital technologies, and productivity. Alpesh is also an expert in operations and

manufacturing. He has deep expertise in motorsports and has extensive experience in the automotive industry as well as in assessing the economic impact of large events and infrastructure projects on countries. In addition to serving clients, Alpesh is a pundit commentator on the 'RaceDay' and 'Chequered Flag' programs for a number of F1 races broadcasted by TV channel Fox Sports Asia. Prior to joining McKinsey, Alpesh was with the Ferrari Formula One Team as Senior Aerodynamicist, he also developed flow simulation software for the aeronautics and aerospace industries at an engineering company. He is a native French speaker and is also fluent in English and Italian.

## SPEAKERS | Session 2



### Dr. Evert Helms

Managing Director & Technical Director SEA,  
Pepperl+Fuchs Asia Pte. Ltd., Singapore

Evert started his career in Manufacturing at Schaeffler where he setup manufacturing facilities in Germany, Romania and India, followed by a role as a Managing Director in Neuweg Fertigung GmbH-NSK Ltd, Munderkingen from 2008 to 2013. He joined Pepperl+Fuchs (Vietnam) Co., Ltd. in 2013 as a General Director. In 2018, he started his new portfolio in Pepperl+Fuchs Asia Pte Ltd,

Singapore as Managing Director & Technical Director SEA. Evert holds a Ph.D in Manufacturing and Management (University of Stuttgart and Fraunhofer Institute for Manufacturing and Automation). His dissertation is in robot-based track guidance support system of industrial handling and processing procedure. He is married with three children and currently based in Singapore.



# SPEAKERS | Session 2



## Mr. Wouter Van Wersch

President & CEO, General Electric,  
ASEAN-ANP

Mr. Wouter Van Wersch, 50, is President & CEO of GE Asia Pacific (APAC), and a Vice President of the GE Company. Based in GE's regional head office in Singapore, he is responsible for driving the company's growth in APAC with a focus on enhancing GE's cross-business capabilities, building localization strategies, and optimizing resources across GE's 15 APAC markets. His 26-year career to date,

has involved marketing, sales, and management roles for various multinational companies, in different regions, including 15 years working in Asia. He began his career at Vivendi Universal's international marketing department in Paris in 1994, before moving to Airbus as Sales Manager Asia. In 2000, he joined Alcatel as Business Development Director Europe before being appointed Sales Director for Asia Pacific, in Shanghai, and General Manager Indonesia, in Jakarta. In 2006, he moved to Alstom as Vice President Sales for Europe and was promoted to Senior Vice President Asia Pacific in 2011, based in Singapore. Following the completion of the Alstom acquisition in 2015, Wouter was named President & CEO of GE ASEAN. In January 2018, he was appointed President and CEO of the newly combined APAC region comprising ASEAN, Australia, New Zealand, Papua New Guinea, Japan and Korea. In addition, Wouter was appointed as a Board Member of the Singapore Economic Development Board with effect from 1 February 2018. A native of the Netherlands, Wouter grew up in France, and is a graduate in Business Administration from the Erasmus University Rotterdam. Wouter and his wife Lorraine have three children aged 18, 16 and 11. He is an enthusiastic sportsman, especially field hockey, which he played at the highest international level.

## SPEAKERS | Session 2



### **Dr. Ir. Hammam Riza, M.Sc**

Chairman, Agency for the Assessment and Application of Technology (BPPT), Indonesia

Dr Hammam Riza currently holds position as Chairman of the Agency for the Assessment and Application of Technology - BPPT, Government of Indonesia. He holds Doctor of Engineering degree in Electrical Engineering, Master of Science in Computer Science and Bachelor in Electrical Engineering. He has extensive 32-years' experience in ICT, with emphasis in artificial intelligence, enterprise information system, cybersecurity, broadband and mobile communication with in-depth experience in research, development, engineering and operation of IT system and network. He has broad experience in the Information Communication Technology (ICT) with the exposure to cyber security and information resiliency, IT Governance, IT Strategic Planning, IT Project Management and IT Service Management.



### **Dr. Rezal Khairi Ahmad**

Chief Executive Officer, CEO's Office,  
NanoMalaysia Berhad, Malaysia

Dr. Rezal Khairi Ahmad was appointed as the Chief Executive Officer in January 2013 under a secondment from Khazanah Nasional. He is a Board Member of NanoMalaysia and Nano Commerce, Founding Chairman of NanoVerify and Founding Director of Nanovation Ventures. He serves as Chairman of Advanced Materials Investment Advisory Panel Working Group under Malaysian Investment Development Authority, Treasurer for Asia Nano Forum (ANF) and Chairman of ANF Commercialization Working Group. In September 2017, he was appointed as International Advisor to China Graphene Industry Alliance (CGIA) linking Malaysia's National Graphene Action Plan 2020. He holds a PhD in Nanotechnology from London Centre for Nanotechnology, University College London as the first Khazanah PhD Scholar from 2007 to 2010.



# SPEAKERS | Session 2



## Dr. Wilaiporn Chetanachan

Principal Innovation Advisor, Office of the President and CEO, The Siam Cement PLC, Thailand

Dr. Wilaiporn Chetanachan is currently the Principal Innovation Advisor, Office of the President and CEO, SCG. During the past 10 years, she was the Director of Corporate Technology Office. She was responsible for the design and implementation of corporate-wide innovation management system that includes the management of R&D process, project portfolio, research financing and return monitoring, intellectual property and alliance development. Dr. Wilaiporn holds a Ph.D. in Organic Chemistry from the University of Cincinnati, USA. She has also completed Harvard Business School's Advanced Management Program, Strategic R&D Management by INSEAD, Management Development Program by Wharton School of Management and Leading Change and Organizational Renewal at Stanford School of Business.



## H.E. Bui The Duy

Deputy Minister, Viet Nam Ministry of Science and Technology, Viet Nam

### EDUCATION:

1998-2000: Bachelor's degree in Computer Science, Wollongong University, Australia  
2001-2004: PhD in Computer Science, Twente University, Netherland

### PROFESSIONAL EXPERIENCES:

2004-2014: Lecturer, School of Information Technology; Deputy Head, Department of Communication and Computer Network; Head, Human-Computer Interaction laboratory; Head, Department of Information Technology, School of Technology, Viet Nam National University in Hanoi.  
2014-4/2018: Chief of Office, Ministry of Science and Technology  
2018-present: Deputy Minister of Science and Technology

### RESEARCH INTERESTS:

Artificial intelligence - Machine learning, pattern recognition - Human – computer interaction - 3D animation - Emotional intelligence trait model

# WRAP-UP COMMENTATOR



## Dr. Mohd Yusoff Sulaiman

President & Chief Executive Officer,  
Malaysian Industry-Government Group for High  
Technology (MIGHT), Malaysia

Dr. Mohd Yusoff Sulaiman is the President & Chief Executive Officer of the Malaysian Industry- Government Group for High Technology (MIGHT) an agency under the Prime Minister's Department. MIGHT is a think-and-do tank that specializes in high technology industry strategy and implementation. Mohd Yusoff

specializes in Technology Management and holds a Ph.D. from Universiti Teknikal Melaka, Malaysia and an M.Sc. from the University of Wales, UK. He is a Fellow of the ASEAN Academy of Engineering & Technology (F.AAET), Academy of Sciences Malaysia (F.ASc) and the Chartered Institute of Logistics and Transport (FCILT).



## Dr. Raphael Guerrero

Acting Dean, School of Science & Engineering  
Dean's Office, Ateneo de Manila University,  
Philippines

Dr. Raphael A. Guerrero recorded his first hologram in 1996 and has since published papers on volume holography in Optics Communications, Applied Optics and Optical Engineering. Currently Acting Dean of the School of Science and Engineering, his other research interests include elastomeric optics and

optofluidics. In 2013, Dr. Guerrero received The World Academy of Sciences Prize for Young Scientists in Developing Countries. He was also recognized as an Outstanding Young Scientist by the National Academy of Science and Technology in the same year. Dr. Guerrero served as president of the Physics Society of the Philippines (SPP) in 2011 and 2012. He is a member of the Optical Society of America (OSA) and the International Society for Optical Engineering (SPIE).

## NOTES

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## NOTES

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