FORUM ON ADVANCED PHOTONICS & FLAT OPTICS

28TH FEB 2025, FRIDAY 09:00 - 12:00
MARINA BAY SANDS, SANDS EXPO & CONVENTION CENTRE, LEVEL 1 BAYFRONT AVENUE 10 SINGAPORE 018956

REGISTER NOW

BREAKFAST AND TEA BREAK WILL BE PROVIDED

Join us at this exciting forum that unites leaders, innovators, and experts from the photonics & semiconductor industries to explore cutting-edge advancements in Advanced Photonics & Flat Optics technologies. Whether you're an industry professional, researcher, or entrepreneur, this event offers valuable insights, networking opportunities, and a platform to collaborate with key players shaping the future of these transformative fields. This event is jointly organized by the National Semiconductor Translation & Innovation Centre (NSTIC), LUX Photonics Consortium and the Singapore Semiconductor Industry Association (SSIA).

FORUM CHAIR

Assoc. Prof. Ang Kah Wee
National University of Singapore,
Chief Technology Officer
National Semiconductor Translation & Innovation Center (NSTIC)

Dr. Kah-Wee ANG is currently a tenured Associate Professor of Electrical and Computer Engineering and a Director of Microelectronic Technologies & Devices at the National University of Singapore. Concurrently, he is a Chief Technology Officer at the National Semiconductor Translation and Innovation Centre (NSTIC). His current research interests focus on nano-electronics and nano-photonics technologies. He has authored over 220 journal and conference papers, including 40 keynote/invited talks, 25 granted/filed US patents, and 4 book chapters. He was conferred the President's Technology Award, the highest national honors bestowed on exceptional research scientists and engineers for their excellent achievements in science and technology. He received the IEEE Paul Rappaport Award for the best paper published in IEEE Transactions on Electron Devices and the Best Demo Paper at the 2019 Symposia on VLSI Technology and Circuits. He is also a recipient of the IEEE Electron Devices Society Graduate Fellowship Award and the inaugural TSMC Outstanding Research Gold Award.

INVITED SPEAKERS

Prof. Yeo Yee Chia
Deputy Chief Executive (Innovation & Enterprise) **A*STAR,**
Executive Director
National Semiconductor Translation & Innovation Center (NSTIC)

Prof Yeo Yee Chia is Deputy Chief Executive (Innovation & Enterprise) at Agency for Science, Technology, and Research (A*STAR), where he steers industry engagements and R&D priorities to achieve significant national impact and outcomes. He spent 10 years at Taiwan Semiconductor Manufacturing Company (TSMC). He was Director of Research and Development (R&D) at TSMC where he led organisations spanning research, pathfinding, and development, and contributed to TSMC's industry-leading 7 nm, 5 nm, and 3 nm technologies. He is Professor of Electrical and Computer Engineering, National University of Singapore (NUS). He published over 700 research papers. He is an inventor of 302 U.S. patents. 44 PhD students graduated under his tutelage. He received his Ph.D and M.S. degrees in Electrical Engineering and Computer Sciences from the University of California, Berkeley, and the M.Eng and B.Eng degrees in Electrical Engineering from NUS. He completed the Advanced Management Program at Harvard University.

JOINTLY ORGANISED BY:

NSTIC NATIONAL SEMICONDUCTOR TRANSLATION AND INNOVATION CENTRE

LUX PHOTONICS CONSORTIUM SINGAPORE

SSIA Singapore Semiconductor Industry Association

Dr. Ramon Jose Paniagua Dominguez
Principal Scientist
National Semiconductor Translation & Innovation Center (NSTIC)

Dr. Ramon Paniagua Dominguez is a Group Leader and the Head of the Advanced Optical Technologies department at the Institute of Materials Research and Engineering (A*STAR). He also holds a joint appointment at the National Semiconductor Translation and Innovation Center (NSTIC), where he is helping to develop Flat Optics towards its industry adoption.

Mr. Aloysius Chua
Projects Director
MetaOptics Technologies Pte Ltd

Mr. Aloysius Chua co-founded Metaoptics in June 2021. Graduated from National University of Singapore Bachelor of Engineering (Mechanical Engineering), he has co-developed several metalens IoT products and is familiar with metalens fabrication processes.

Prof. Qiu Cheng Wei
Department of Electrical & Computer Engineering,
National University Singapore (NUS)

Prof. Cheng-Wei Qiu is Fellow of APS, Optica, SPIE and The Electromagnetics Academy, and Foreign Fellow of Chinese Optical Society. He is the recipient of President's Science Award 2023, the highest science distinction in Singapore. He was elected Fellow of ASEAN Academy of Engineering and Technology. He is well known for his research in structured light and interfaces, and received multiple scientific awards. He has been serving as Associate Editor for various journals such as JOSA B, PhotoniX, Photonics Research, and Editor-in-Chief for eLight. He also serves in Editorial Advisory Board for Laser and Photonics Review, Advanced Optical Materials, and ACS Photonics.

Dr. Lim Leh Woon
Senior Scientist
National Semiconductor Translation & Innovation Center (NSTIC)

Dr. Lim Leh Woon is working as a scientist in the advanced photonics team in the Institute of Microelectronics, A*STAR and National Semiconductor Translation and Innovation Center (NSTIC). He previously graduated with a B.Eng and Ph.D specializing in III-V materials for photodetectors from the University of Sheffield, U.K. His current research interests are on multi-material photonic integration and device development.

Dr. Victor Li Dongdong
Lead Scientist
Delta Electronics Int'l (Singapore) Pte Ltd

Dr. Li is a seasoned technology leader with a deep understanding of photonics and semiconductor device build for applications. As a Lead Scientist for Silicon Photonics at Delta Electronics Singapore, he works on advanced technology research and development, with a particular focus on Silicon Photonics for LiDAR. Prior to his current role, Dr. Li held key positions at various multinational corporations where he led technical projects in VCSEL and AR/VR waveguide technologies. He also served as a Principal Investigator at research institute, driving the development of a flat optics fabrication line. Additionally, Dr. Li has extensive experience in advanced CMOS foundries, including, where he contributed to the development of non-volatile memory technologies. Dr. Li holds a Ph.D. in Photonics from Nanyang Technological University. His expertise spans photonics, electro-optics, optics, non-volatile memory, and advanced fabrication technologies. He has a strong track record of innovation, evidenced by numerous publications and patents.

Asst. Prof. Brian Sia Jia Xu
School of Electrical &
Electronic Engineering,
Nanyang Technological University

Sia Jia Xu Brian Sia is an Assistant Professor at the School of Electrical and Electronic Engineering, Nanyang Technological University, Singapore. Brian specializes in large-scale photonic integration, and advanced laser technologies. To date, the IPs authored by Brian have been the subject of licensing fees from industry in excess of 900,000 SGD. He serves as the reviewer for Advanced Optical Materials, Journal of Lightwave Technology, ACS Photonics, Optics Express/Letters, and JOSA B. Brian has been the corresponding author in internationally renowned journals such as Nature Communications. His work has been featured in numerous media outlets (i.e., MIT News, Optics.org).

EVENT PROGRAMME

9.00 am - 9.45 am	**Breakfast**
9.45 am – 10.00 am	**Opening Speech** Prof. Yeo Yee Chia Deputy Chief Executive (Innovation & Enterprise), A*STAR Executive Director, National Semiconductor Translation & Innovation Center (NSTIC)
10.00 am – 10.15 am	**Flat Optics: A Paradigm Shift in Optical Technologies** Dr Ramon Jose Paniagua Dominguez Principal Scientist, National Semiconductor Translation & Innovation Center (NSTIC)
10.15 am – 10.30 am	**Breakthrough Existing Optics Limitations with Metaoptics** Mr. Aloysius Chua Projects Director, MetaOptics Technologies Pte Ltd
10.30 am – 10.45 am	**Quo vadis, Metasurfaces?** Prof. Qiu Chengwei Department of Electrical & Computer Engineering, NUS
10.45 am – 11.15 am	**Tea Break**
11.15 am – 11.30 am	**Photonic Heterogenous Integration through Die-to-Wafer Bonding** Dr Lim Leh Woon Senior Scientist, National Semiconductor Translation & Innovation Center (NSTIC)
11.30 am – 11.45 am	**Advanced Photonic ECL Laser for Compact & High-Performance FMCW LiDAR** Dr Victor Li Dongdong Lead Scientist, Delta Electronics Int'l (Singapore) Pte Ltd
11.45 am – 12.00 pm	**Electrically-driven, Chip-scale Dual-comb Spectrometer driven by Frequency-modulated Locking** Asst. Prof. Brian Sia School of Electrical & Electronic Engineering, NTU
12:00 pm - 12.05 pm	**Closing Remarks** Assoc. Prof. Ang Kah Wee Forum Chair, National University of Singapore

JOINTLY ORGANISED BY: