

## SEMINAR ANNOUNCEMENT

DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING  
COLLEGE OF DESIGN AND ENGINEERING

Website: <https://cde.nus.edu.sg/ece>

**Area: Microwave & Radio Frequency**

**Host: Professor Guo Yongxin**

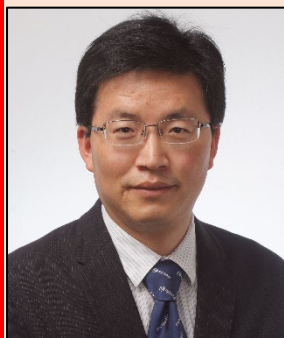
**Technical Seminar Jointly Organized by  
IEEE Singapore MTT/AP chapter and the Department of ECE, NUS**

|                |   |                                                                                         |
|----------------|---|-----------------------------------------------------------------------------------------|
| <b>TOPIC</b>   | : | <b>Silicon based mm-wave and THz Circuits and Systems</b>                               |
| <b>SPEAKER</b> | : | <b>Professor Kaixue Ma<br/>School of Microelectronics<br/>Tianjin University, China</b> |
| <b>DATE</b>    | : | <b>Tuesday, 17 January 2023</b>                                                         |
| <b>TIME</b>    | : | <b>2.30PM to 4.00PM</b>                                                                 |
| <b>VENUE</b>   | : | <b>Block E4, E4-04-03<br/>College of Design and Engineering, NUS</b>                    |

### ABSTRACT

With the advantages of excellent penetration, broad bandwidth and good security, millimeter-wave (mm-wave) and Terahertz (THz) has been drawn much attention in USA, Europe, China and worldwide. mm-wave band is already assigned for future 5G applications and THz technique has been recognized as the one of ten techniques which can change the future world. With down-scaling of the commercial silicon technique, which has been verified as one of excellent candidates for commercial 5G/6G mm-wave and THz applications in terms of the low cost, compact size and high integrity etc. This talk will present the progress silicon based circuits and systems of mm-wave and THz. The progress of our group will also be introduced. The challenge and future trend of the silicon-based mm-wave and THz will also be presented.

### BIOGRAPHY



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Kaixue Ma received B.E. and M.E. degrees from Northwestern Polytechnical University (NWPU), Xi'an, China, and Ph.D. degree from Nanyang Technological University (NTU), Singapore. From 1997 to 2002, he worked in Chinese Academy of Space Technology (Xi'an) as a group leader. From 2005 to 2007, he was with MEDs Technologies as an R&D Manager. From 2007 to 2010, he was with ST Electronics as R&D manager, Project Leader, technique management Committee and technique consultant in 2011. From 2010 to 2013, he was with NTU as a Senior Research Fellow and millimetre-wave RFIC team leader for 60-GHz Flagship Chipset project. From 2013 to 2018, He is Full Professor with the University of Electronic Science and Technology of China (UESTC), Chengdu, China. Since Feb. 2018, he has been the Dean and Professor of the School of Microelectronics of Tianjin University, PI of National IC Innovation & Entrepreneurship Platform of Tianjin, the Director of Tianjin Key Laboratory of Imaging and Sensing Microelectronics Technology and the Chairperson of Tianjin IC Association. Dr. Ma proposed a variety of RF and microwave integrated circuits based on advanced CMOS, SiGe BiCMOS, GaAs and SOI technologies, and microwave circuit and system design technology patented with "quasi-planar circuits with embedded air cavity" named as SISL in publication. He was responsible for designing the first low-power reconfigurable 60 GHz SiGe millimetre-wave transceiver SOC, packaging and system testing, and completed a high-speed dual-chip wireless communication system. He is currently working on silicon-based and GaAs RF millimeter-wave integrated circuits and systems. He has filed 50 patents, published two books, over 170 SCI international Journal papers (over 140 IEEE journal articles) and 180 international conference papers.

Dr. Ma is Fellow of Chinese Institute of Electronics and awardee of the Chinese National Science Fund for Distinguished Young Scholars. He received 10 technique awards including best paper award etc. He was Associate Editor for the IEEE Transactions on Microwave Theory and Techniques and Guest Editor of IEEE Microwave Magazine and current Member and he organizers for international conferences. He is the Coordinator IEEE MTT-S R10 for China and Singapore and current member and Speakers Bureau of MTT-S TC-4 etc.

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