The 15th Global Symposium on **Millimeter-Waves & Terahertz**



20-22 May 2024, Hong Kong SAR, PRC

Program Book

Organizer



CityU 香港城市大學 City University of Hong Kong



State Key Laboratory of Terahertz and Millimeter Waves 港設市大學





AP/MTT



		20 May, 2024 (Mond	lay)	
08:30-16:35		Registration ((Yellow Zone)	
Venue		LT	-1	
09:00-09:15		Opening (Ceremony	
09:15-10:15		Keynot	e 1	
10:15-10:35		Tea Break (Y	(ellow Zone)	
10:35-12:35	Keynote 2 & 3			
12:35-14:00	Lunch / Industrial Talk by Rohde & Schwarz Hong Kong Ltd (19/F, Lau Ming Wai Academic Building)			
Venue	LT-1			
14:00-16:15	A Special Session Dedicated To Professor Kwai Man Luk For His Four Decades Of Antenna Research and Innovations			
16:15-16:35	Tea Break (Yellow Zone)			
Venue	LT-1	LT-2	LT-5	LT-6
16:35-17:55	\$3	S8	R2	R1
18:15-20:15	Welc	oming Reception (19/F, La	u Ming Wai Academic Build	ding)

21 May, 2024 (Tuesday)					
08:30-15:50	Registration (Yellow Zone)				
Venue			Blue Zone		
09:00-10:20		Interactive Forum			
10:20-10:40		Tea Break (Yellow Zone)			
Venue	LT-1	LT-2	LT-4	LT-5	LT-6
10:40-12:20	S2	S2	S5	S6	S12
12:20-13:50	Lunch / Industrial Talk by Keysight Technologies Hong Kong Ltd (19/F, Lau Ming Wai Academic Building)				
13:50-15:30	S7	S9	R4	S17	S22
15:30-15:50	Tea Break (Yellow Zone)				
15:50-17:10	S14	S15	S13	S17	S22
18:30-21:30	Banquet (Hotel ICON)				

22 May, 2024 (Wednesday)					
08:30-15:00	Registration (Yellow Zone)				
Venue	LT-1	LT-2	LT-4	LT-5	LT-6
09:00-10:20	S16	S21	R3	R5	R7
10:20-10:40	Tea Break (Yellow Zone)				
10:40-12:20	S16	S10	S11	S19	R6
12:20-13:50	Lunch (19/F, Lau Ming Wai Academic Building)				
13:50-16:30	S4	S18	S20	S23	S24

Special Sessions: S1 – S24 Regular Sessions: R1 – R7

Venue at 4/F University Concourse, Yeung Kin Man Academic Building, City University of Hong Kong

LT-1 Tin Ka Ping Lecture Theatre

LT-2 Mr and Mrs Sze Chi Ching Lecture Theatre

LT-4 Mr and Mrs David T F Chow Lecture Theatre

LT-5 Mr and Mrs Lau Tat Chuen Lecture Theatre LT-6 Chan Kei Biu Lecture Theatre

LI-6 Chan Kei Blu Lecture Theatre

Yellow Zone (Area between LT-5 and LT-6)

Blue Zone (Area between LT-9 and LT-10)

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Chi Hou Chan General Co-Chair



Tie Jun Cui General Co-Chair

Global Symposium on Millimeter-Waves & Terahertz (GSMM) is a forum for researchers and practitioners to present and discuss new advancements, innovations, and emerging technologies in the field of millimeter-wave and terahertz research and development. GSMM2024 is the 15th edition of the symposium, following the traditions of previous symposia held across the continents in Nanjing, China (2008), Sendai, Japan (2009), Seoul, South Korea (2010), Espoo, Finland (2011), Harbin, China (2012), Sendai, Japan (2013), Seoul, South Korea (2014), Montreal, Canada (2015), Espoo, Finland (2016), Hong Kong, China (2017), Boulder, Colorado USA (2018), Sendai, Japan (2019), Nanjing, China (2021) and Seoul, Korea (2022).

With the diminishing risk of the coronavirus pandemic, we now resume an on-site GSMM in 2024 to be held at the campus of City University of Hong Kong. The symposium is organized by the State Key Laboratory of Terahertz and Millimeter Waves (City University of Hong Kong) and technically sponsored by the IEEE MTT-S and IEEE Hong Kong AP/MTT Joint Chapter. City University of Hong Kong (CityUHK) was founded in 1984 as the City Polytechnic of Hong Kong and became a fully accredited university in 1994. Together with the State Key Laboratory of Millimeter Waves (Southeast University, Nanjing), we have made contributions in



promoting international collaborations and advancing the research of millimeter-wave and terahertz science and technology.

For GSMM2024, we have a very exciting technical program with three keynote speeches and 24 organized special sessions. Keynote speeches are on the topics of hybrid and composite waveguide integration technologies for millimeter-wave/ terahertz systems and broadband/ultrafast electronics, progress in millimeter-wave civil radars, and 3D printing landscape for next-generation radio frequency applications to be delivered by Professor Ke Wu, Professor Wei Hong, and Professor Stepan Lucyszyn, as well as other emerging topics, especially for the 6G and B6G. On the other hand, conference participants can also enjoy the vibrant city life of Hong Kong. The new West Kowloon Cultural District is an arts and cultural hub with performance and exhibition centers, a waterfront promenade, green open spaces, and restaurants. The must-sees there include the Hong Kong Palace Museum and M+, a museum of contemporary visual culture.

We look forward to meeting all of you in Hong Kong at GSMM2024.

Welcome Message from the TPC Chairs





Hang Wong TPC Chair

Shiwei Qu TPC Chair



Gengbo Wu TPC Chair

On behalf of the Technical Program Committee, we cordially welcome you to the 15th Global Symposium on Millimeter-Waves & Terahertz (GSMM 2024) in Hong Kong! GSMM has become one of the premier conferences in the world on millimeter-waves and terahertz. It is an excellent opportunity to meet together as a global family and exchange your visions, insights, in the millimeter-waves and terahertz challenges, and progress discipline! We are much delighted to present the excellent technical program for GSMM 2024, with the great effort from all the authors/speakers, reviewers, and Technical Program Committee members! We have received papers covering the millimeter-waves more than 170 to the terahertz spectrum, with submissions by authors from 13 countries/regions and finally accepted 158 papers (102 full papers and 56 abstract papers) after careful and rigorous review. The conference will be held onsite. All presentations will be in the oral format, presented in 31 technical sessions (7 regular sessions and 24 special sessions) surrounding major themes of antennas, millimeter-waves, terahertz, and systems. Besides regular talks, we are also glad to host 3 keynote talks throughout the conference.

On the first day of the conference, the opening ceremony on the first morning will officially launch the conference-anchored by three Keynote

Welcome Message from the TPC Chairs

talks: "Hybrid and Composite Waveguide Integration Technologies for Millimeter-Wave/Terahertz Systems and Broadband/Ultrafast Electronics" by Professor Ke Wu, from University of Montreal, "Research Progress in Millimeter Wave Civil Radars" by Professor Wei Hong and "Building-edge Additive Manufacturing Technologies: 3D Printing Landscape for Next Generation Radio Frequency Applications" by Professor Stepan Lucyszyn from Imperial College London.

Talks and focus sessions are interspersed throughout the conference, including, notably, a special session dedicated to Professor Kwai Man Luk for his four decades of antenna research and innovations. To appreciate the great efforts on the paper contributions to this GSMM and encourage the valuable enthusiasm on research, finalists for best paper awards and best student paper awards are selected from a big pool of candidates. The papers of finalists will be evaluated on site by the Award Committee and the awards will be presented at the banquet. We greatly thank the Technical Program Committee members and reviewers for their invaluable contributions to the technical program. We would also like to thank all the authors and presenters for their diligence in the papers and presentations. We hope you will enjoy this conference and look forward to hosting you all in Hong Kong.



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Reviewers



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Student Helpers

Liyuan Cao Hui Chen Sicheng Chen **Feiyang Deng** Jiachen Du Shuai Gao Hao Guo Jiawen Hao Xiaoluo He Jianhui Huang Tayyab Ali Khan Sheng Lei Zhicheng Liu Ji Liu Yifeng Liu King Tung Lo Chunling Qi Kai Qing Bowen Ren Wenjian Sun **Yiqing Sun** Yuanfa Sun Hiu Lok Tam Qian Tan **Peiwen Tang**

Yat Sing To Kaicheng Wang Chun Kit Wong Tsz Ming Wong Bingjie Xiang Jian Xing Bo Xue Chen Xue Chenfeng Yang Jinjie Zhang Yuxin Zhang



Lunches and Welcoming Reception

Venue

19/F, Lau Ming Wai Academic Building, City University of Hong Kong

IX)

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Banquet

Date / Time	Tuesday, 21 May 2024 / 19:30 - 21:30
	Hotel ICON
Venue	17 Science Museum Road, Tsim Sha Tsui East, Kowloon,
	Hong Kong SAR
	A round shuttle transportation will be provided:
	CityU 🛨 Banquet Venue
	More information about this arrangement will be
	shared during the symposium





The registration counter will be located at the Yellow Zone, 4/F University Concourse, Yeung Kin Man Academic Building.

The registration counter will be opened during these times:

Date/Day	Time
20 May 2024 (Monday)	08:30 - 16:35
21 May 2024 (Tuesday)	08:30 - 15:50
22 May 2024 (Wednesday)	08:30 - 15:00
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Delegates are required to bring along their payment receipt (Printed or Electronic).

Registration fee

Categories	Early Bird (By 31 March 2024)	Regular (1 April 2024– 22 May 2024)	
IEEE Member*	6,700 HKD	7,500 HKD	
Non-IEEE Member	7,500 HKD	8,300 HKD	
IEEE Student Member*	5,100 HKD	5,600 HKD	
Non-IEEE Student	5,500 HKD	6,000 HK D	

Note: *IEEE Membership number is required to qualify for the respective rates.

ONE registration for ONE participant includes (for all the registration categories):

1) Access to all technical sessions

- 2) Lunches
- 3) Welcoming Reception
- 4) Banquet (Limited Seats, First-Come First-Served)

One registration can cover up to TWO accepted papers.





Keynote 1

Hybrid and Composite Waveguide Integration Technologies for Millimeter-Wave/Terahertz Systems and Broadband/Ultrafast Electronics

Ke Wu University of Montreal, Canada

Date/Time:Monday, 20 May 2024 / 09:15 - 10:15Venue:Tin Ka Ping Lecture Theatre (LT-1)



Dr. Ke Wu is Industrial Research Chair in Future Wireless Technologies and Professor of Electrical Engineering with Polytechnique Montréal (University of Montreal), where he is also Director of Poly-Grames Research Center. He was the Canada Research Chair in RF and millimeter-wave engineering, NSERC-Huawei Endowed Chair, and the

Founding Director of the Center for Radiofrequency Electronics Research of Quebec. He has authored/co-authored over 1500 referred technical papers, and many books/book chapters and filed more than 90 patents. Dr. Wu was the organizer of numerous conferences and events including the General Chair of the 2012 IEEE MTT-S International Microwave Symposium (IMS - the IEEE largest annual conference). He was the 2016 President of the IEEE Microwave Theory and Technology Society (MTT-S). He also served as the two-terms inaugural representative of North America in the General Assembly of the European Microwave Association (EuMA). He was the recipient of many awards and prizes including the 2019 IEEE MTT-S Microwave Prize, the 2021 EIC Julian C. Smith Medal, 2022 IEEE MTT-S Outstanding Educator Award, and 2022 IEEE AP-S John Kraus Antenna Award. He was an IEEE MTT-S Distinguished Microwave Lecturer. Dr. Ke Wu is a Fellow of the IEEE, Canadian Academy of Engineering, and the Academy of Science of the Royal Society of Canada, and the German National Academy of Science and Engineering (acatech).





Abstract

Widespread applications and commercial success of millimeter-wave (mmW) and terahertz (THz) electronics and photonics depend on manufacturing cost, loss management, interference control, and integration density of their frontend modules and systems. On the other hand, the desire for prospective terabits and ultrafast electronics may eventually become the fundamental driving force for the development of next generation low-loss and lowdispersion guided-wave structures. This plenary talk will begin with the presentation of waveguide integration and transmission lines for the development of THz systems and applications. State-of-the-art substrate integration technologies including both metallic and dielectric topologies are reviewed for current mainstreaming THz ICs developments and applications. Fundamental issues judging from transmission loss and integration density are addressed. To overcome such technical hurdles for future THz circuits and systems, emerging composite waveguide architectures and hybrid planar integration strategies are demonstrated and discussed with theoretical and experimental results at THz frequencies. With the development of innovative fabrication processes and material synthesis techniques, unique high-density THz ICs and interconnects can be made of diversified metallic and dielectric integrated waveguides within the same design blocks in support of both TEM mode and non-TEM mode.



Keynotes



Keynote 2 Research Progress in Millimeter Wave Civil Radars Wei Hong Southeast University, China

Date/Time:Monday, 20 May 2024 / 10:35 - 11:35Venue:Tin Ka Ping Lecture Theatre (LT-1)



Wei Hong received the B.S. degree from the University of Information Engineering, Zhengzhou, China, in 1982, and the M.S. and PhD degrees from Southeast University, Nanjing, China, in 1985 and 1988, respectively, all in radio engineering.

He is currently a professor of the School of Information Science and Engineering, Southeast University. In 1993,

1995, 1996, 1997 and 1998, he was a short-term visiting scholar with the University of California at Berkeley and at Santa Cruz, respectively. He has been engaged in numerical methods for electromagnetic problems, millimeter wave theory and technology, antennas, RF technology for wireless communications etc. He has authored and co-authored over 400 technical publications and two books. He twice awarded the National Natural Prizes of China, four times awarded the first-class Science and Technology Progress Prizes issued by the Ministry of Education of China and Jiangsu Province Government, the 2023 CIE Science and Technology Innovation Team Award and 2021 IEEE MTT-S Microwave Prize etc.

Dr. Hong is a Fellow of IEEE, Fellow of CIE, the vice presidents of the CIE Microwave Society and Antenna Society, and was an elected IEEE MTT-S AdCom Member during 2014-2016, served as the Associate Editor of the IEEE Trans. on MTT from 2007 to 2010.



Abstract

In this talk, the recent research progress in some millimeter wave (mmWave) civil radars in the State Key Laboratory of Millimeter Waves (SKLMMW) of Southeast University and cooperative enterprises are reviewed, including chip design and development of automotive radar, intelligent transportation radar, human feature detection radar, etc.





Keynote 3

Building-edge Additive Manufacturing Technologies: 3D Printing Landscape for Next Generation Radio Frequency Applications Stepan Lucyszyn

Imperial College London, UK

Date/Time:Monday, 20 May 2024 / 11:35 - 12:35Venue:Tin Ka Ping Lecture Theatre (LT-1)



Stepan Lucyszyn FREng, FIEEE is a British engineer, inventor and technologist, and has been a Professor of Millimetre-wave Systems at Imperial College London, England, since 2016. He was elevated to Fellow of the Institute of Electrical and Electronics Engineers (IEEE) in 2014 and elected to Fellow of the Royal Academy of Engineering (RAEng) in 2023. Lucyszyn's research has mainly focused on monolithic microwave integrated

circuits (MMICs), radio frequency microelectromechnical systems (RF MEMS), wireless power transfer (WPT), thermal infrared technologies ('THz Torch') and more recently in additive manufacturing (3D printing) for microwave, millimetre-wave and terahertz applications. Prof. Lucyszyn has (co-)authored well over 200 papers and 12 book chapters in applied physics and engineering.

Abstract

Over the past seven years, Prof. Lucyszyn and his team have been pioneering 3D printed components, circuits and subsystems that can operate in the microwave-to-terahertz spectrum for lightweight applications that include low-cost communications, radar and sensor systems. This will explore some of the work undertaken at Imperial College London, highlighting advantages and current challenges for commercial exploitation in next generation applications.





Over the past eight years, he has publish six invited international conference papers and 118 journal papers; the first of which kick-started the recent innovation of 3D-printed rectangular waveguides. In 2022, for his work on 3D printing, Prof. Lucyszyn (and his team at Imperial College London) won Junkosha's inaugural Technology Innovator of the Year Award for the Microwave and Millimeter Wave category. A Special Session Dedi cated to Professor Kwai Man Luk for His Four Decades of Antenna Research and Inn ovations

Date/Time: Monday, 20 May 2024 / 14:00 – 16:15 Venue: Tin Ka Ping Lecture Theatre (LT-1)











Talk 1: Superdirective Unidirectional Mixed-Multipole Antennas and Arrays of Them Richard W Ziolkowski The University of Arizona, USA

Talk 2: Antenna Design Based on Fundamental Theory for Mobile Wireless Applications Hiroyuki Arai Yokohama National University, Japan

> Talk 3: A Brief History of Basic Antennas Yueping Zhang Nanyang Technological University, Singapore

> Talk 4: Research on Wideband Antennas Following Prof K.M. Luk Qing-Xin Chu South China University of Technology, China

Talk 5: Advancements in Antenna Technology: Bridging Wireless Communications, Biomedicine and Wireless Sensing Yongxin Guo National University of Singapore, Singapore





Instructions for Presenters in Oral Sessions (Special Sessions and Regular Sessions)

- (1) Speakers are requested to be in their respective session rooms at least 10 minutes prior to the commencement of each session. The duration of each oral presentation is 20 minutes. This includes 15 minutes for the presentation itself and 5 minutes for questions from the audience. Your oral presentation should not exceed 15 minutes. The session chair will give you a reminder at 3 minutes before the presentation time ends.
- (2) Your presentation will be followed by a Question & Answer (Q & A) session. The length of your Q & A session will be determined by the session chair(s), depending on the progress of the presentations in the session. Generally, the Q & A session for each paper will not exceed 5 minutes.
- (3) You may find your presentation section, date & time in the e-Proceeding, Program Book, or on the website.
- (4) Please prepare your presentation materials for the oral presentation. We prefer using Microsoft PowerPoint or Adobe Acrobat as the presentation tool. Please bring your presentation materials on a USB Flash Drive and submit to the student helper at the end of the preceding session, or at least 15 minutes before the start of your session. You should also report to their respective session chairperson(s) to inform them of your presence.
- (5) In order to minimize technical difficulties and time wastage, a common Windows-based computer will be used at the session venue. The use of individual personal computers or laptops is discouraged. It is also advisable to back-up your presentation materials.
- (6) All papers must be presented in person at the conference in order to be included in the proceedings published in IEEE Xplore.





Instructions for Presenters in Interactive Forum (Poster) Session

- Posters must be displayed in portrait format, A0 in size (84cm (Width) x 120cm (Height)). Stationery will be available on-site for you to mount your poster.
- (2) Your poster should be put up at least 15 minutes before the start of the session according to the assigned poster panel number, which can be found at the interactive forum session venue. You should report to the respective session chairperson(s) to inform them of your presence, and are expected to stand by your poster to introduce your work and answer any questions during the session. At the end of the session, please remove your poster.
- (3) All posters must be presented in person at the conference in order to be included in the proceedings published in IEEE Xplore.

Instructions for Session Chairs in Oral Sessions

- (1) Session Chairs should arrive at the presentation venue at least 10 minutes before the session starts.
- (2) Student helpers will be there to assist you and to inform you of any lastminute changes or matters. You will be given a sheet to mark the attendance of the presenters. At the end of the session, please sign off on the sheet and pass it to the student helpers.
- (3) If a presentation is cancelled or no show, the time slot the remaining presentations in the session should not be moved up or otherwise changed.
- (4) The Oral presentation is 20 minutes in length (15 minutes for presentation and 5 minutes for Q&A). The student helper will signal to the presenter after 13 minutes that there is only 2 minutes remaining for the presentation. If the presentation stretches over 19 minutes, you may intervene to cut short the presentation to ensure strict adherence to the program schedule. It will be good if you can remind your presenters about this before the start of the session.



Presentation Instructions

- XXX
- (5) Each presentation will be followed by a Question & Answer (Q & A) session. The length of Q & A session will be determined by you and the other session chair (if any), depending on the progress of the presentations in the session. You should control the Q & A session time so that it will not exceed 5 minutes.
- (6) Kindly refer to the Technical Program (available at the conference website and in the Program Book) for your session to be chaired, time and venue. A copy of the latest technical session will be posted on the notice board outside the venue.

Instructions for Session Chairs in Interactive Forum (Poster) Sessions

- (1) Student helpers will be there to assist you and to inform you of any lastminute changes or matters. You will be given a sheet to mark the attendance of the presenters. At the end of the session, please sign off on the sheet and pass it to the student helpers.
- (2) Kindly refer to the Technical Program (available at the conference website and in the Program Book) for your session to be chaired, time and venue. A copy of the latest technical session will be posted on the notice board outside the venue.



Special Sessions



Session Code	Session Title/Organizer
S1	3D Printing and Emerging Fabrication/Measurement Technologies for Functional Transmitarrays and Antennas Yang Yang (<i>University of Technology Sydney, Australia</i>); Guan-Long Huang (<i>Foshan University, China</i>)
52	Advanced Antennas and Technologies for Integrated Sensing and Communications Qingfeng Zhang (Southern University of Science and Technology, China); Dingfei Ma (Hong Kong University of Science and Technology, Hong Kong SAR, China); Hongxin Zhou (Southern University of Science and Technology, China)
S3	Advanced Millimeter-Wave and Terahertz Components, Circuits and Systems for Future Communication and Sensing Applications Jun Xu (Southeast University, China); Liang Gao (Southeast University, China); Zhang Cheng Hao (Southeast University, China)
S4	Advanced Technologies and Processes Empowered Antennas for Satellite Applications Kai Xu Wang (Harbin Institute of Technology, China); Xue Ren (Shenzhen University, China)
S5	Advancements in Microwave and Millimeter Wave Antennas: Innovations and Applications Min Li (Heriot-Watt University, UK); Yunfei Cao (South China University of Technology, China)
S6	AdvancementsinMillimeter-waveAntennas:Design,Implementation,andTechnologyforNextGenerationCommunicationsLei Guo (Dalian University of Technology, China);Shu-Yan Zhu (Sun Yat- sen University, China)



Special Sessions



S7 Antenna in Package Designs for Millimeter-wave Applications Kai Lu (Sun Yat-sen University, China); Nan Yang (Sun Yat-sen University, China)

S8 Artificial EM Surfaces and Components

Guan-Long Huang (Foshan University, China); Sai-Wai Wong (Shenzhen University, China)

S9 Design and Evaluation of Microwave and Millimeter Wave Antennas and Antenna Arrays

Luyu Zhao (Anhui University, China); Xiaoming Chen (Xi'an Jiaotong University, China)

- S10 Emerging THz and Optoelectronic Technologies for Advanced Communication, Sensing, and Imaging Applications Yafei Wu (The Hong Kong Polytechnic University, Hong Kong SAR, China & University of Electronic Science and Technology of China, China); Zhongqian Niu (University of Electronic Science and Technology of China, China)
- S11 Frontiers in Wireless Communications: Reconfigurable Metasurface Antennas and Their Arrays

Jianing Yang (Chongqing University, China); Junping Geng (Shanghai Jiaotong University, China); Ming-Chun Tang (Chongqing University, China)

S12 High-Frequency Antenna Measurements for Antennas, Metasurfaces, and Devices

> Wonbin Hong (*Pohang University of Science and Technology, Korea*); Hang Wong (*City University of Hong Kong, Hong Kong SAR, China*) (This session is co-organized by Technical Committee on Antenna Measurements (AMTC) of IEEE AP-S.)

S13 Innovative Millimeter-Wave Antennas for B5G and 6G Communications

QingLe Zhang (Shenzhen University, China), GengBo Wu (University of Hong Kong, Hong Kong SAR, China)



Special Sessions



S14	Innovative Reflect/Transmit-Arrays and Metasurfaces for B5G and 6G Applications
	Xin Dai (Guangzhou University, China); Li-Zhao Song (University of Technology Sydney, Australia); Fan Wu (Southeast University, China)
S15	Metamaterial-inspired Microwave Devices
	Alex M. H. Wong (City University of Hong Kong, Hong Kong SAR, China); Marco A. Antoniades (Toronto Metropolitan University, Canada)
S16	Microwave and Millimeter-wave Biomedical Sensing Technology
	Wei Kang (Nanjing University of Science and Technology, China); Bo Wang (National University of Singapore, Singapore)
S17	Microwave and Millimeter-wave Integrated Circuits for Future Radio Front-end and Wireless Transceivers
	Xu Yan (National University of Singapore, Singapore); Xiaohu Fang (Southern University of Science and Technology, China)
S18	Millimeter-Wave and Terahertz Devices for Wireless Applications Xiang Gao (Beijing Institute of Technology, China); Zheng Li (Beijing Institute of Technology, China)
S19	Millimeter-Wave Antenna Array Technologies and Their System-Level
	Applications Jingfeng Chen (Shanghai Jiaotong University, China); Dongze Zheng (Southeast University, China)
S20	Novel Microwave and Millimeter-wave Antennas Yu-Xiang Sun (Shenzhen University, China); Zhe Chen (Shenzhen University, China)
S21	Recent Advances in MM-Wave and THz Filtering Antennas Hao-Tao Hu (City University of Hong Kong, Hong Kong SAR, China); Yao Zhang (Xiamen University, China)

- S22 **Reconfigurable and Intelligent Metasurface Designs and Applications** Jun Yan Dai (*Southeast University, China*); Qiang Cheng (*Southeast University, China*)
- S23 Sensing With Electronic Terahertz Waves Xianzhong Tian (National University of Singapore, Singapore); Jun Hu (Nanjing University of Science and Technology, China)

S24 Terahertz Sciences and Technologies

Jing Li (Purple Mountain Observatory, Chinese Academy of Sciences, China)



Technical Program - Monday, 20 May 2024

08:30 - 16:35

Registration @ Yellow Zone

09:00 – 09:15 Opening Ceremony @ Tin Ka Ping Lecture Theatre (LT-1)

	Keynote 1	Pg.16	
	Hybrid and Composite Waveguide Integration		
Title	Technologies for Millimeter-Wave/Terahertz Systems and		
	Broadband/Ultrafast Electronics		
Speaker	Ke Wu		
Speaker	University of Montreal, Canada		
Date/Time	Monday, 20 May 2024 / 09:15 – 10:15		
Venue	Tin Ka Ping Lecture Theatre (LT-1)		
Chair	Hang Wong City University of Hong Kong, Hong Kong SAR, Chi	na	
	City Oniversity of Hong Kong, Hong Kong SAR, Chi	nu	

10:15 - 10:35

Tea Break @ Yellow Zone

	Keynote 2	Pg.18
Title	Research Progress in Millimeter Wave Civil Rad	ars
Creaker	Wei Hong	
Speaker	Southeast University, China	
Date/Time	Monday, 20 May 2024 / 10:35 – 11:35	
Venue	Tin Ka Ping Lecture Theatre (LT-1)	
Chair	Alex M. H. Wong	
Chair	City University of Hong Kong, Hong Kong SAR, Chi	na



Keynote 3 Pg.20	
Title	Building-edge Additive Manufacturing Technologies: 3D Printing Landscape for Next Generation Radio Frequency Applications
Speaker	Stepan Lucyszyn Imperial College London, UK
Date/Time	Monday, 20 May 2024 / 11:35 – 12:35
Venue	Tin Ka Ping Lecture Theatre (LT-1)
Chair	Alex M. H. Wong City University of Hong Kong, Hong Kong SAR, China

12:35-14:00	Lunch / Industrial Talk by Rohde & Schwarz Hong KOng Ltd
	@ 19/F, Lau Ming Wai Academic Building (LAU)

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Session	A Special Session Dedicated to Professor Kwai Man Luk for His Four Decades of Antenna Research and Innovations
Date/Time	Monday, 20 May 2024 / 14:00 – 16:15
Venue	Tin Ka Ping Lecture Theatre (LT-1)
Chair	Kwok Wa Leung City University of Hong Kong, Hong Kong SAR, China
14:00 - 14:25	Superdirective Unidirectional Mixed-Multipole Antennas and Arrays of Them Richard W Ziolkowski, The University of Arizona, USA
14:25 - 14:50	Antenna Design Based on Fundamental Theory for Mobile Wireless Applications Hiroyuki Arai, Yokohama National University, Japan
14:50 - 15:15	A Brief History of Basic Antennas Yueping Zhang, Nanyang Technological University, Singapore
15:15 - 15:40	Research on Wideband Antennas Following Prof K.M. Luk Qing-Xin Chu, South China University of Technology, China
15:40 - 16:05	Advancements in Antenna Technology: Bridging Wireless Communications, Biomedicine and Wireless Sensing Yongxin Guo, National University of Singapore, Singapore
16:05 - 16:15	Concluding Remarks
16:15 - 16:35	Tea Break @ Yellow Zone



	[S3] Advanced Millimeter-Wave and Terahertz
Special Session	Components, Circuits and Systems for Future
	Communication and Sensing Applications
Date/Time	Monday, 20 May 2024 / 16:35 – 17:55
Venue	Tin Ka Ping Lecture Theatre (LT-1)
Organizer(s) & *Chair(s)	Jun Xu*, Southeast University, China
	Liang Gao*, Southeast University, China
	Zhang Cheng Hao*. Southeast University. Ching

- 16:35 16:55 **[S3-1] Developments and Challenges of Mm-Wave Variable** Gain Amplifiers on Silicon Qingfeng Zhang
- 16:55 17:15 **[S3-2] Design of A Four-Channel Crossover in Ridge-Gap-Waveguide Technology for Millimeter-Wave Applications** Yang Liu, Ji-Wei Lian, Chuhan Wei, Chun Geng and Dazhi Ding
- 17:15 17:35 **[S3-3] A Low-Cost Chip to Waveguide Transition for W-Band Wireless Transmission With Wire-Bonding** Rui Zhou, Jixin Chen, Siyuan Tang and Wei Hong
- 17:35 17:55 **[S3-4]Indoor Stationary Human Detection and Localization Based on FMCW Radar** Ningsi Cai, Jun Yang, Ruyu Ma, Xiuyin Zhang and Youjun Xiang



Special Session	[S8] Artificial EM Surfaces and Components
Date/Time	Monday, 20 May 2024 / 16:35 – 17:55
Venue	Mr and Mrs Sze Chi Ching Lecture Theatre (LT-2)
Organizer(s) &	Guan-Long Huang*, Foshan University, China
Chair(s)	Sai-Wai Wong, Shenzhen University, China
16:35 - 16:55	[S8-1] A Gain Filtering Reflectarray Unit Based on 1-Bit Magnetoelectric Dipole Fulin Xue, Chenyang Meng, Guangyin Feng, Hao Chen, Yin Li and Sai-Wai Wong
16:55 - 17:15	[S8-2] Filtenna-To-Filtenna-Based Frequency Selective Surfaces With Improved Performances Huawei Lin, Sai-Wai Wong and Kam Weng Tam
17:15 - 17:35	[S8-3] A Multifunctional Reflectarray Based on Resistance Modulation Chenyang Meng, Fulin Xue, Guangyin Feng, Hao Chen, Yin Li and Sai-Wai Wong
17:35 - 17:55	[S8-4] Wide-Scanning Reflector-Based Holographic

7:35 - 17:55 [S8-4] Wide-Scanning Reflector-Based Holographic Metasurfaces With Open-Stopband Suppression Song Xue, Yizhu Shen, Ziyu Xu and Sanming Hu



Session	[R2] Millimeter-Wave Active Devices and Ics
Date/Time	Monday, 20 May 2024 / 16:35 – 17:55
Venue	Mr and Mrs Lau Tat Chuen Lecture Theatre (LT-5)
Chair(s)	Colombo Bolognesi, ETH Zürich, Switzerland
16:35 - 16:55	[R2-1] A GaN-Based Doherty Power Amplifier for 5G Basestation Applications
	Yi-Fan Tsao, Heng-Tung Hsu and Jiun-Jie Huang
16:55 - 17:15	[R2-2] A 18-To-22 GHz 22.8 dBm P _{SAT} 18.2 dB Gain
	Power Amplifier in 0.13-µm CMOS SOI
	Guiyue Mao and Fanyi Meng
17:15 - 17:35	[R2-3] Dual Gate HEMT: Compact Cascode for Low-Noise Amplification
	Giorgio Bonomo, Filippo Ciabattini, Tamara Saranovac,
	Fran Kostelac, Sara Hamzeloui, Diego Marti, Ralf Flückiger,
	Olivier J. S. Ostinelli and Colombo R. Bolognesi
17:35 - 17:55	[R2-4] 94 GHz Two-Way-Combined Power Amplifiers With 14.2 dBm Peak Output Power in 300-nm InP/GaAsSb DHBT Technology
	Sara Hamzeloui, Akshay M. Arabhavi, Filippo Ciabattini, Mojtaba Ebrahimi, Giorgio Bonomo, Olivier Ostinelli and Colombo Bolognesi



Session	[R1] Emerging Technologies
Date/Time	Monday, 20 May 2024 / 16:35 – 17:55
Venue	Chan Kei Biu Lecture Theatre (LT-6)
Chair(s)	Hao-Tao Hu , City University of Hong Kong, Hong Kong SAR, China
16:35 - 16:55	[R1-1] Terahertz Plasmonic Instability of a Double-Layer Two-Dimensional Electron System Shengpeng Yang, Hongyang Guo, Mi Tian, Shaomeng Wang and Yubin Gong
16:55 - 17:15	[R1-2] Biological Responses of Skin Cells to 280 GHz

- Seung Jae Oh, Inhee Maeng, Hye Young Son, Eui Su Lee, Eunji Jang, Young Bin Ji, Hyeon Sang Bark, Hee Jun Shin and Eun-Kyung Lim
- 17:15 17: 35 [R1-3] The Influence of Calibration Materials' Dielectric Properties on Deembedding Accuracy for Liquid Characterization Minghe Du, Zeyu Wang, Lili Fang and Xiue Bao
- 17:35 17:55 [R1-4] Towards Porous Si THz Planar Waveguides in Ultra-Low-Resistivity Substrates

Shiqi Ma, Massinissa Nabet, Romain Hanus, Jean-Pierre Raskin, Laurent A. Francis and Dimitri Lederer

18:15 – 20:15	Welcoming Reception
10.15 - 20.15	@ 19/F, Lau Ming Wai Academic Building (LAU)

08:30 - 15 :50

Registration @ Yellow Zone

Session	Interactive Forum
Date/Time	Tuesday, 21 May 2024 / 09:00 – 10:20
Venue	Blue Zone
Chair(s)	Ka Fai Chan , City University of Hong Kong, Hong Kong SAR, China

Finalists for Best Paper Awards:

- [PA-1] Accurate and Efficient Computation for Irregular Reflectarray Antenna Peng-Fa Li and Shi-Wei Qu
- [PA-2] A Two-Chip-Cascaded 4D Millimeter-Wave Imaging Radar Aiming for Automotive SLAM Wogong Zhang, Nannan Li, Congzhi Li, Dongdong Dong, Cheng Wang and Erich Kasper
- [PA-3] A Wideband Monostatic Co-Circularly Polarized Simultaneous Transmit and Receive Antenna Using Metasurface Di Wu, Yaxin Li, Yu-Xiang Sun, Ruina Lian, Bing Xiao and Min Li
- [PA-4] Cryogenic Receiver Frontends of High Sensitivity for Terahertz Communication Applications Xiang Gao, Jia Du and Jianping An
- [PA-5] An Integrated Sensing and Communication Architecture Using Reconfigurable Intelligent Surfaces for 6G Wireless Networks Baiyang Liu, Jinyu Wu, Qingfeng Zhang and Hang Wong



- [PA-6] Evaluation of the Effective Degree of Freedom for Multiport Antenna Element Qian Zhu, Genze Jiang, Rui Ni, Shanchi Wu, Ganghua Yang and Nan Yang
- [PA-7] **Dual-Band and Dual-Polarized Millimeter-Wave Leaky-Wave** Antenna Qing Le Zhang

Finalists for Best Student Paper Awards:

- [PS-1] A 35-GHz Planar Aperture Rectenna for Wireless Power Transimission Ken Zhang, Shaowei Liao, Wenquan Che and Quan Xue
- [PS-2] **2D-Scalable CMOS Phased Array Transmitter at 140GHz With λ/2** Element Spacing

Jicong Zhang, Bingli Dai, Yi Hu, Bo Zhang, Cheng Wang and Zhi Chen

- [PS-3] A Gain Filtering Reflectarray Unit Based on 1-Bit Magnetoelectric Dipole Fulin Xue, Chenyang Meng, Guangyin Feng, Hao Chen, Yin Li and Sai-Wai Wong
- [PS-4] A Low-Cost Chip to Waveguide Transition for W-Band Wireless Transmission With Wire-Bonding Rui Zhou, Jixin Chen, Siyuan Tang and Wei Hong
- [PS-5] Determination of Orbital Angular Momentum Modes With Double Slit Experiments in W-Band SeokJu Moon, DongHo Yu and EunMi Choi
- [PS-6] Wide-Scanning Reflector-Based Holographic Metasurfaces With Open-Stopband Suppression Song Xue, Yizhu Shen, Ziyu Xu and Sanming Hu





- [PS-7] A Terahertz Dual-Channel Radar Transceiver in 22 nm CMOS With 60 GHz Bandwidth Xinjie Zhang, Yuri Lu, Chunqi Shi, Leilei Huang, Long Xu and Runxi Zhang
- [PS-8] A Wideband Bowtie Antenna Fed With CPW for 5G mmWave Applications

Yunyi Jiang, Zhiqi Ke, Kai Lu and Nan Yang

[PS-9] 94 GHz Two-Way-Combined Power Amplifiers With 14.2 dBm Peak Output Power in 300-nm InP/GaAsSb DHBT Technology Sara Hamzeloui, Akshay M. Arabhavi, Filippo Ciabattini, Mojtaba Ebrahimi, Giorgio Bonomo, Olivier Ostinelli and Colombo Bolognesi

10:20 - 10:40

Tea Break @ Yellow Zone



Special Session	[S1] 3D Printing and Emerging Fabrication/Measurement Technologies for Functional Transmitarrays and Antennas
Date/Time	Tuesday, 21 May 2024 / 10:40 – 12:20
Venue	Tin Ka Ping Lecture Theatre (LT-1)
Organizer(s) & *Chair(s)	Yang Yang, University of Technology Sydney, Australia Guan-Long Huang*, Foshan University, China
Chair(s)	Sai-Wai Wong, Shenzhen University, China

10:40 - 11:00	[S1-1] 3D Printed Metasurfaces Using Conductive and Dielectric Multi-Material Additive Manufacturing Yang Yang
11:00 - 11:20	[S1-2] Wideband Circularly Polarized Transmitarray Antenna With Linearly Polarized Feed Qin Zhou, Ruihua Liu and Xue Ren
11:20 - 11:40	[S1-3] 3D Printed Mikaelian Lens to Realize Broadband Achromatic Terahertz Super-Resolution Focusing Jin Chen, Ka Fai Chan, Geng-bo Wu and Chi Hou Chan
11:40 - 12:00	[S1-4] Millimeter-Wave 3D Printing High-Gain Shorted

- 11:40 12:00 [SI-4] Millimeter-wave 3D Printing High-Gain Shorted Patch Antenna With Enhanced Bandwidth Qinghai Wang and Yunfei Cao
- 12:00 12:20 **[S1-5] On the Use of 3D Printing Technique for 5G mmWave Antenna Development** Muhammad Farhan Maulana, Zulfi, Sulistyaningsih, Fajri Darwis, Winy Desvasari and Achmad Munir

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Technical Program - Tuesday, 21 May 2024

Special Session	[S2] Advanced Antennas and Technologies for Integrated Sensing and Communications
Date/Time	Tuesday, 21 May 2024 / 10:40 – 12:20
Venue	Mr and Mrs Sze Chi Ching Lecture Theatre (LT-2)
Organizer(s) & *Chair(s)	Qingfeng Zhang [*] , Southern University of Science and Technology, China Dingfei Ma [*] , Hong Kong University of Science and Technology, Hong Kong SAR, China Hongxin Zhou [*] , Southern University of Science and
	Technology, China

- 10:40 11:00 [S2-1] Single-Shot Frequency-Diverse Near-Field Imaging Using High-Scanning-Rate Leaky-Wave Antenna Dingfei Ma
- 11:00 11:20 [S2-2] Coupled-Resonator Array Antenna for Beam Steering Hongxin Zhou
- 11:20 11:40 [S2-3] An Integrated Sensing and Communication Architecture Using Reconfigurable Intelligent Surfaces for 6G Wireless Networks Baiyang Liu, Jinyu Wu, Qingfeng Zhang and Hang Wong
- 11:40 12:00 [S2-4] A Wideband Reconfigurable Reflective Metasurface

Jiachen Du, Baiyang Liu, Chi Hou Chan and Qingfeng Zhang

12:00 - 12:20 **[S2-5] Using Pattern Diversity in RF Imaging Systems to Reduce the Number of Measurement Nodes** Dingfei Ma, Wanqin Ma, Zihao Xu, Ross Murch and Qingfeng Zhang



Special Session	[S5] Advancements in Microwave and Millimeter Wave Antennas: Innovations and Applications
Date/Time	Tuesday, 21 May 2024 / 10:40 – 12:20
Venue	Mr and Mrs David T F Chow Lecture Theatre (LT-4)
Organizer(s) & *Chair(s)	Min Li*, Heriot-Watt University, UK Yunfei Cao*, South China University of Technology, China

- 10:40 -11:00 [S5-1] Millimeter-Wave Fabry-Pérot Antenna Featuring Frequency Reconfigurable Capability Min Li and Di Wu
- 11:00 11:20 **[S5-2] A Wideband Monostatic Co-Circularly Polarized** Simultaneous Transmit and Receive Antenna Using Metasurface Di Wu, Yaxin Li, Yu-Xiang Sun, Ruina Lian, Bing Xiao and Min Li
- 11:20 11:40 [S5-3] Broadband Circularly Polarized Millimeter-Wave Antenna With Low Profile Dielectric Polarizer Using PCB Technology Liang Wei Qin and Kai Xu Wang
- 11:40 12:00 [S5-4] Dual-Band Shared-Aperture Antenna Array With Dual Polarization Using Metasurface Absorber Feng Du and Yunfei Cao
- 12:00 12:20 [S5-5] High Performance Antenna Array for 5G Millimeter-Wave Applications Yuqi He, Wei Lin and Luyu Zhao



Special Session	[S6] Advancements in Millimeter-wave Antennas: Design, Implementation, and Technology for Next Generation Communications
Date/Time	Tuesday, 21 May 2024 / 10:40 – 12:20
Venue	Mr and Mrs Lau Tat Chuen Lecture Theatre (LT-5)
Organizer(s) &	Lei Guo*, Dalian University of Technology, China
Chair(s)	Shu-Yan Zhu, Sun Yat-sen University, China

- 10:40 11:00 [S6-1] Low-Profile and Broadband Dielectric Resonator Antenna Designs for 5G and Beyond Applications Lei Guo
- 11:00 11:20 **[S6-2] A MW and MMW Shared-Aperture Antenna Based on Reutilization of Decoupling Structure** Xin Geng, Wen-Wen Yang, Qing-Hu Zhang, Kai Xu, Ling-Yan Zhang and Jian-Xin Chen
- 11:20 11:40 [S6-3] A Wideband Bowtie Antenna Fed With CPW for 5G mmWave Applications Yunyi Jiang, Zhiqi Ke, Kai Lu and Nan Yang
- 11:40 12:00 [S6-4] A Broadband Millimeter-Wave Antenna-in-Package Made of Low-Profile Magnetoelectric Dipole Mengyuan Chu, Zhiqi Ke, Kai Lu and Nan Yang
- 12:00 12:20 [S6-5] A Silicon Microfabricated THz Metasurface OAM Antenna Working at 400 GHz Yilong Cai, Gengbo Wu and Shuyan Zhu





	[S12] High-Frequency Antenna Measurements for
Special Session	Antennas, Metasurfaces, and Devices
	(This session is co-organized by Technical Committee on Antenna Measurements (AMTC) of IEEE AP-S.)
Date/Time	Tuesday, 21 May 2024 / 10:40 – 12:20
Venue	Chan Kei Biu Lecture Theatre (LT-6)
	Wonbin Hong*, Pohang University of Science and
Organizer(s) &	Technology, Korea
Chair(s)	Hang Wong, City University of Hong Kong, Hong Kong
	SAR, China

10:40 - 11:00	[S12-1] Millimeter-wave Fan-out Wafer Level Packaged
	Metamaterial Antenna Characterization
	Wonbin Hong

- 11:00 11:20 [S12-2] Terahertz Measurements for Wideband Metasurfaces Hang Wong
- 11:20 11:40 [S12-3] Reconfigurable Ultracompact Huygens Antenna With Full Space Coverage and Uniform Polarization Wei Lin
- 11:40 12:00 [S12-4] High-capacity Reconfigurable Intelligent Surface for Integrated Passive Sensing and Communication Baiyang Liu
- 12:00 12:20 **[S12-5] 1-Bit Randomly Pre-Phased Reflective Metasurface for Quantization Lobe Suppression in the D band** Taeyoung Kim, Sangmin Lee, Seongwoog Oh, Jinhyun Kim, Jungsuek Oh and Sangjo Choi

12:20 - 13:50	Lunch / Industrial Talk by Keysight Technologies Hong Kong Ltd
	@19/F, Lau Ming Wai Academic Building (LAU)



Special Session	[S7] Antenna in Package Designs for Millimeter-wave Applications
Date/Time	Tuesday, 21 May 2024 / 13:50 – 15:30
Venue	Tin Ka Ping Lecture Theatre (LT-1)
Organizer(s) &	Kai Lu*, Sun Yat-sen University, China
Chair(s)	Nan Yang, Sun Yat-sen University, China

13:50 - 14:10 [S7-1] A Wideband Dielectric Resonator Antenna With Omnidirectional Radiation

Tiannan Ni, Jin Shi and Kai Xu

14:10 - 14:30 [S7-2] Multi-Feed Dielectric Resonator Antenna On-Chip at D-Band Teng Li and Jiapeng Wan

14:30 - 14:50 **[S7-3] Analysis of the Influence of Special-Shaped Reflector on Antenna Radiation Pattern and FBR** Shuang Qiu, Chao Wu, Jinghui Qiu, Alexander Denisov and Vasyl Molebny

- 14:50 15:10 [S7-4] A 35-GHz Planar Aperture Rectenna for Wireless Power Transimission Ken Zhang, Shaowei Liao, Wenguan Che and Quan Xue
- 15:10 15:30 [S7-5] Millimeter-Wave Dual-Polarization End-Fire Dielectric Resonator Antenna Xu Zhou, Peng Fei Hu and Kwok Wa Leung

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Technical Program - Tuesday, 21 May 2024

Special	[S9] Design and Evaluation of Microwave and Millimeter
Session	Wave Antennas and Antenna Arrays
Date/Time	Tuesday, 21 May 2024 / 13:50 – 15:30
Venue	Mr and Mrs Sze Chi Ching Lecture Theatre (LT-2)
Organizer(s) &	Luyu Zhao, Anhui University, China
Chair(s)	Xiaoming Chen, Xi'an Jiaotong University, China

- 13:50 14:10 [S9-1] Examining the Design of Patch Antennas in Commercial Antenna-in-Package (AiP) for 5G Smartphones Chow-Yen-Desmond Sim
- 14:10 14:30 [S9-2] What is the Nyquist Sampling Frequency for Amplitude-Only Planar Near-Field Tests? Junhao Zheng, Zhengpeng Wang and Xiaoming Chen
- 14:30 14:50 **[S9-3] On the Gap Between the Amplitude and Phase Modulation Layers in a Transmitarray Collimator** Jiazhi Tang, Xiaoming Chen, Bingyi Qian, Jianchuan Wei, Guan-Long Huang and Anxue Zhang

14:50 - 15:10 **[S9-4] On the Possibility of Polarization Switching for 5G** mmWave Antenna Elmi Cahyaningsih, Trasma Yunita and Achmad Munir



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Session	[R4] Millimeter-Wave and THz Sensing
Date/Time	Tuesday, 21 May 2024 / 13:50 – 15:30
Venue	Mr and Mrs David T F Chow Lecture Theatre (LT-4)
Chair(s)	Wogong Zhang, CHUHANG Technology GmbH, Germany Asad Aziz, Shenzhen University, China
13:50 - 14:10	[R4-1] A Two-Chip-Cascaded 4D Millimeter-Wave Imaging Radar Aiming for Automotive SLAM Wogong Zhang, Nannan Li, Congzhi Li, Dongdong Dong, Cheng Wang and Erich Kasper
14:10 - 14:30	[R4-2] Terahertz Spoof Plasmonic Sensor With Resonance Sensing Capability for Wood Moisture Detection Asad Aziz, Shuting Fan and Zhengfang Qian
14:30 - 14:50	[R4-3] Feature Extraction for Machine Learning-Based Alignment of W-Band Higher-Order Mode Generator Edrick Baijukya and EunMi Choi
14:50 - 15:10	[R4-4] A Terahertz Dual-Channel Radar Transceiver in 22 nm CMOS With 60 GHz Bandwidth Xinjie Zhang, Yuri Lu, Chunqi Shi, Leilei Huang, Long Xu and Runxi Zhang
15:10 - 15:30	[R4-5] Nano-Scale Rough Surface Imaging With THz-s-SNOM Shuqi Ge, Dehai Zhang, Zhaomin Peng, Li Wang and Hao Li



Special Session	[S17] Microwave and Millimeter-wave Integrated Circuits for Future Radio Front-end and Wireless Transceivers
Date/Time	Tuesday, 21 May 2024 / 13:50 – 17:10
Venue	Mr and Mrs Lau Tat Chuen Lecture Theatre (LT-5)
Organizer(s) & *Chair(s)	Xu Yan*, National University of Singapore, Singapore Xiaohu Fang*, Southern University of Science and Technology, China

13:50 - 14:10	[S17-1] A GaN MMIC Inverse Class-F Power Amplifier Using
	Co-Designed Bias Network and LC Resonator
	Jie Shi, Xiaohu Fang, Xinyu Zhou, Xu Yan, Wei Lin and Luyu
	Zhao

- 14:10 14:30 [S17-2] Integrated Circuits of RF Front-End With Antenna for Millimeter-Wave Receiver Wen-Cheng Lai
- 14:30 14:50 [S17-3] Modifications and Applications of Space Mapping Techniques on MMIC Design Jingyuan Zhang, Xu Yan and Yongxin Guo
- 14:50 15:10 [S17-4] Optimization Design Methodology for High Efficiency Power Amplifiers

Zhongpeng Ni, Jianwei Qi and Jing Xia

15:10 - 15:30 **[S17-5] 2D-Scalable CMOS Phased Array Transmitter at 140GHz With λ/2 Element Spacing** Jicong Zhang, Bingli Dai, Yi Hu, Bo Zhang, Cheng Wang and Zhi Chen

15:30-15:50 break





- 15:50 16:10 **[S17-6] Broadband GaN MMIC Asymmetric Doherty Power Amplifier Employing Complex Load Impedance** Ruibin Gao, Shuang Liu, Zhijiang Dai, Weimin Shi, Mingyu Li and Jingzhou Pang
- 16:10 16:30 **[S17-7] Design of Fully Integrated GaN Dual-Band Doherty Power Amplifier for 5G Wireless Communication** Shuang Liu, Ruibin Gao, Zhijiang Dai, Weimin Shi, Mingyu Li and Jingzhou Pang
- 16:30 16:50 [S17-8] A GaAs HBT Doherty Power Amplifier for 5G N77 Handset Applications

Shun Wan and Wenhua Chen

16:50 - 17:10 **[S17-9] A D-Band Energy-Efficient Compact Receiver With Current Reuse Technique for 6G Array System** Junyuan Tu, Guohao He, Zhantao He, Yuxin Yang, Xiang Yi, Haoshen Zhu, Pei Qin, Wen Yang, Wenquan Che and Quan Xue



Special Session	[S22] Reconfigurable and Intelligent Metasurface
	Designs and Applications
Date/Time	Tuesday, 21 May 2024 / 13:50 – 17:10
Venue	Chan Kei Biu Lecture Theatre (LT-6)
Organizer(s) &	Jun Yan Dai*, Southeast University, China
*Chair(s)	Qiang Cheng, Southeast University, China
Chair(s)	Jin Chen, City University of Hong Kong, Hong Kong SAR,
	China

13:50 - 14:10	[S22-1] A Tutorial on RIS-Aided Wireless Communication
	Systems: From the Perspective of Network Structures
	Yongjun Xu

14:10 - 14:30 **[S22-2] Monopulse Direction Finding and Tracking by Digital Metasurface With Time Modulation** Chong He, Shiyuan Li, Anjie Cao, Weiren Zhu, Baojiang Yan and Liang Kong

14:30 - 14:50 [S22-3] Automatic Design of Reconfigurable Intelligent Metasurface From Multiple Dimensions Based on Particle Swarm Optimization Algorithm

Yingjuan Lu, Junyan Dai and Qiang Cheng

- 14:50 15:10 **[S22-4] A Novel Systematic Millimeter-Wave Base Station Based on Reconfigurable Metasurfaces** Jun Wei Zhang, Zhen Jie Qi, Qun Yan Zhou, Jun Yan Dai and Qiang Cheng
- 15:10 15:30 [S22-5] Single-Beam Steering With 1-Bit Millimeter-Wave Reconfigurable Intelligent Surface Kui Tang, Ke Chen and Yijun Feng

15:30 - 15:50 break





- 15:50 -16:10 [S22-6] Adaptive Beamforming Based on Space-Time Coding Metasurface Antenna With Hadamard Codes Zuqi Fang
- 16:10 16:30 [S22-7] Wide-Angle Transparent Metasurface for Function-Switchable Applications: RF Enhancement and Shielding Rui Zhe Jiang, Qiang Cheng and Tie Jun Cui
- 16:30 16:50 [S22-8] Comparative Studies of Beam-Squinting Effects Between Leaky-Wave and Phased Array Antennas Dongze Zheng, Zhi Hao Jiang, Fan Wu and Wei Hong
- 16:50 17:10 [S22-9] Sub-THz Frequency is Promising Solution to Meet the Growing Demand of Wider Bandwidth in Next-generation Communication Networks Say Phommakesone

15:30-15:50

Tea Break @ Yellow Zone



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Special Session	[S14] Innovative Reflect/Transmit-Arrays and Metasurfaces for B5G and 6G Applications		
Date/Time	Tuesday, 21 May 2024 / 15:50 – 17:10		
Venue	Tin Ka Ping Lecture Theatre (LT-1)		
Organizer(s) & *Chair(s)	Xin Dai*, Guangzhou University, China Li-Zhao Song*, University of Technology Sydney, Australia Fan Wu*, Southeast University, China		
15:50 - 16:10	[S14-1] Frequency-Scanning Transmissive Metasurface for THz Imaging Lizhao Song, Ting Zhang, Peiyuan Qin, Jia Du and Y. Jay Guo		
16:10 - 16:30	[S14-2] A Wideband Filtering Dielectric Resonant Antenna for Millimeter-Wave Application Wan Jun Yang		
16:30 - 16:50	[S14-3] Multifunctional Terahertz and Millimeter-Wave Metasurface With Full-Space Wave Manipulation Xiaohui Tan, Rongcao Yang, Shu-Lin Chen, Ka Fai Chan, Baojie Chen and Chi Hou Chan		
16:50 - 17:10	[S14-4] A Wideband Optically-Transparent Lens Antenna for Millimeter-Wave Applications		

Jun Gong and Xin Dai





Special Session	[S15] Metamaterial-inspired Microwave Devices
Date/Time	Tuesday, 21 May 2024 / 15:50 – 17:10
Venue	Mr and Mrs Sze Chi Ching Lecture Theatre (LT-2)
	Alex M. H. Wong*, City University of Hong Kong, Hong
Organizer(s) &	Kong SAR, China
Chair(s)	Marco A. Antoniades*, Toronto Metropolitan
	University, Canada

15:50 - 16:10 [S15-1] High-Gain Wideband PRGW Slot Antenna Using an SRR Meta-Lens Swed M. Sifet and Marco A. Antoniades

Syed M. Sifat and Marco A. Antoniades

- 16:10 16:30 [S15-2] A 5:1 Ultra-wideband Lens Antenna Based on Metamaterial Xiangyu Lin and Xidong Wu
- 16:30 16:50 **[S15-3] A Dual-Polarized Metalens With Wide Field-Of-View** and Broad Bandwidth for 77GHz Radar Applications Xiaoluo He and Alex M. H. Wong
- 16:50 17:10 [S15-4] True-Time-Delay Metasurface Enabled Resonant Cavity Antennas

Tayyab A. Khan and Alex M. H. Wong



Special Session	[S13] Innovative Millimeter-Wave Antennas for B5G and 6G Communications
Date/Time	Tuesday, 21 May 2024/ 15:50 – 17:10
Venue	Mr and Mrs David T F Chow Lecture Theatre (LT-4)
Organizer(s) &	Qing Le Zhang*, Shenzhen University, China
Chair(s)	GengBo Wu, City University of Hong Kong, Hong Kong
	SAR, China

- 15:50 16:10 **[S13-1] Animate Amplitude-Modulated Leaky-Wave** Antennas Geng-bo Wu
- 16:10 16:30 **[S13-2] Dual-Band and Dual-Polarized Millimeter-Wave** Leaky-Wave Antenna Qing Le Zhang
- 16:30 16:50 **[S13-3] A Compact Spearhead-Shaped Antenna With Super-Wideband Characteristics** Agus Dwi Prasetyo, Sulistyaningsih, Elmi Cahyaningsih and Achmad Munir
- 16:50 17:10 **[S13-4] A Wideband Vivaldi Antenna With Modified Planar Marchand Balun for mmWave V2X Communications** Zulfi, Levy Olivia Nur, Sarah Rahayu and Achmad Munir

18:30 – 21:30		Banquet
	Venue:	Hotel ICON
	Address:	17 Science Museum Road,
		Tsim Sha Tsui East, Kowloon, Hong Kong
	Website:	https://www.hotel-icon.com

08:30 - 15:00

Registration @ Yellow Zone

Special Session	[S16] Microwave and Millimeter-wave Biomedical Sensing Technology
Date/Time	Wednesday, 22 May 2024 / 09:00 – 11 :40
Venue	Tin Ka Ping Lecture Theatre (LT-1)
Organizer(s) & *Chair(s)	Wei Kang* , Nanjing University of Science and Technology, China Bo Wang* , National University of Singapore, Singapore

09:00 - 09:20 [S16-1] Research Progress on Multi-Target Respiration Monitoring Radar Based on Stepped-Frequency Hybrid Modulation and Metasurface Technology Wei Kang and Chenwei Zhou

09:20 - 09:40 [S16-2] Signal Quality Index for Optimized Contactless Blood Pressure Estimation

Haotian Shi, Bo Wang and Yongxin Guo

09:40 - 10:00 **[S16-3] Non-Contact Continuous Blood Pressure Estimation Based on Wrist Pulse Using a K-Band Biomedical Radar** Zhi Zheng, Yuanrong Shi, Bo Wang, Zhiying Zhou and Yongxin Guo

- 10:00 10:20 **[S16-4] Accurate Noncontact Sleep Apnea-Hypopnea Detection Using a K-Band Biomedical Radar** Shuqin Dong, Bo Wang, Changzhan Gu and Yongxin Guo
- 10:20 10:40 Break



- 10:40 11:00 [S16-5] Sleep Apnea Detection Using Radar-Pulse Oximeter Sensor Fusion Heng Zhao, Chuanwei Ding and Hong Hong
- 11:00 11:20 [S16-7] Contactless and Continuous Blood Pressure Measurement With Millimeter Wave Radar Luyao Liu, Bo Wang, Yongxin Guo and Wendong Xiao



a	[S21] Recent Advances in MM-Wave and THz Filtering
Special Session	Antennas
Date/Time	Wednesday, 22 May 2024 / 09:00 – 10:20
Venue	Mr and Mrs Sze Chi Ching Lecture Theatre (LT-2)
Organizer(s) & *Chair(s)	Hao-Tao Hu [*] , City University of Hong Kong, Hong Kong SAR, China
	Yao Zhang*, Xiamen University, China
09:00 - 09:20	[S21-1] High-Gain Circular-Polarized Filtering Antennas for 60-GHz Millimeter-Wave Applications Hao-Tao Hu and Chi Hou Chan
09:20 - 09:40	[S21-2] Low-Cost Compact Wideband Millimeter-Wave Filtenna and Its Arrays for On-Board Communication Systems Jun Xu, Yuechao Wang and Wei Hong
09:40 - 10:00	[S21-3] Broadband Dual Polarized Filtenna for 5G Millimeter Wave Application Kai Huang, Yao Zhang and Qing Huo Liu
10:00 - 10:20	[S21-4] A Millimeter-Wave Filtering Fabry-Pérot Cavity Antenna Utilizing PRFS Shi-Feng Nie, Huanlong Qin and Qing-Yi Guo

Wednesday, 22 May 2024

Session	[R3] Millimeter-Wave and THz Applications
Date/Time	Wednesday, 22 May 2024 / 09:00 – 10:20
Venue	Mr and Mrs David T F Chow Lecture Theatre (LT-4)
Chair(s)	Manting Wang, City University of Hong Kong, Hong Kong SAR, China

09:00 - 09:20 [R3-1] An Accuracy Improving Method of Error Vector Magnitude Measurement System for 78 GHz Broadband Modulated Signals

Peijun Xu, Pengwei Gong, Hongmei Ma, Tingting Xie, Chenxi Wang, Luo Zhao, He Jiang and Chuntao Yang

- 09:20 09:40 [R3-2] A Directional Interpolation Pattern for Multilevel Green's Function Interpolation Method Shidong Jiang and Haogang Wang
- 09:40 10:00 [R3-3] A Dual-Band Bandpass Mode-Composite Cavity Filter With Large Frequency Ratio Chengkun Hu, Yujian Li and Junhong Wang
- 10:00 10:20 [R3-4] D-Band Dual-Polarized Array Antenna Based on Turnstile-Junction Orthomode Transducer With High Isolation

Sen Lu, Yizhu Shen, Ziyu Xu and Sanming Hu



Session	[R5] Millimeter-Wave Antennas and Passive Devices (1)
Date/Time	Wednesday, 22 May 2024 / 09:00 – 10:20
Venue	Mr and Mrs Lau Tat Chuen Lecture Theatre (LT-5)
Chair(s)	Baris Hakanoglu , Bandirma Onyedi Eylul University, Balikesir, Turkiye
09:00 - 09:20	[R5-1] Investigation of the Effects of the Slot Parameters on a Patch Antenna at 28 GHz Related to the Operating
	Wavelength
	Baris Gurcan Hakanoglu and Mustafa Turkmen
09:20 - 09:40	[R5-2] A 55 GHz Single-Stage RC Polyphase Filter With LC Matching Network for Low Insertion Loss Toshiaki Abe, Shinsuke Hara, Akifumi Kasamatsu, Yohtaro Umeda and Kyoya Takano
09:40 - 10:00	[R5-3] Low-Cost Planar Dielectric Patch Resonator Filter Shielded by Artificial Magnetic Conductor Weisheng Tang and Shaoyong Zheng
10:00 - 10:20	[R5-4] Compact Multibeam Antenna Fed by Dual-Layer Substrate Integrated Waveguide Butler Matrix for 5G Millimeter-Wave Application Ziyu Xu, Yizhu Shen, Song Xue, Sen Lu and Sanming Hu

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Session	[R7] Sub-millimeter-wave and THz Technologies
Date/Time	Wednesday, 22 May 2024 / 09:00 – 10:20
Venue	Chan Kei Biu Lecture Theatre (LT-6)
Chair(s)	EunMi Choi , Ulsan National Institute of Science and Technology, Korea
09:00 - 09:20	[R7-1] Design and Analysis of Staggered Double Vane Structure With Bragg Resonators for 200 GHz TWT Junyoung Lee, Wonjin Choi, Yoonseon Choi and EunMi Choi
09:20 - 09:40	[R7-2] Determination of Orbital Angular Momentum Modes With Double Slit Experiments in W-Band SeokJu Moon, DongHo Yu and EunMi Choi
09:40 - 10:00	 [R7-3] G-Band Load-Pull Characterization of High- Efficiency Emitter-Fin InP/GaAsSb DHBTs Filippo Ciabattini, Sara Hamzeloui, Akshay M. Arabhavi, Mojtaba Ebrahimi, Olivier Ostinelli and Colombo R. Bolognesi
10:00 - 10:20	[R7-4] A 220 GHz Mixer Based on Dual Circuit-Port Technique Utilizing Planar Schottky Diodes Baochen Du, Yihui Wang, Yu Gan and Hongfu Meng
10:20 - 10:40	Tea Break @ Yellow Zone



	[S10] Emerging THz and Optoelectronic Technologies for	
Special Session	Advanced Communication, Sensing, and Imaging Applications	
Date/Time	Wednesday, 22 May 2024 / 10:40 – 12:20	
Venue	Mr and Mrs Sze Chi Ching Lecture Theatre (LT-2)	
Organizer(s) & *Chair(s)	Yafei Wu*, The Hong Kong Polytechnic University, HongKong SAR, China & University of Electronic Science andTechnologyofChina,ChinaZhongqian Niu*, University of Electronic Science andTechnology of China, China	
10:40 - 11:00	[S10-1] The Research on 220GHz Multi-Circuit Integration Technology Zhongqian Niu, Bo Zhang and Yong Fan	
11:00 - 11:20	[S10-2] Compact THz Filter and Multiplexer Based on Coaxial Technique Daotong Li, Xinyao Liu, Ying Liu, Dongyi Sui and Lanlan Yang	
11:20 - 11:40	[S10-3] Programmable Metasurface for Neuromorphic Computing Jiewei Chen	
11:40 - 12:00	[S10-4] V-Band Four-Channel Front-End Design for Miniaturization of Phased Array Systems Lin Huang, Zongrui He and Hongbin Wang	
12:00 - 12:20	[S10-5] An Omnidirectional Antenna-In-Package Based on FOWLP for THz Chip-To-Chip Wireless Interconnect Applications	

Gang Zhuang, Ya Fei Wu, Yang Chai and Yu Jian Cheng

Special Session	[S11] Frontiers in Wireless Communications: Reconfigurable Metasurface Antennas and Their Arrays		
Date/Time	Wednesday, 22 May 2024 / 10:40 – 12:20		
Venue	Mr and Mrs David T F Chow Lecture Theatre (LT-4)		
Organizer(s) & *Chair(s)	Jianing Yang, Chongqing University, China Junping Geng, Shanghai Jiaotong University, China Ming-Chun Tang*, Chongqing University, China		
10:40 - 11:00	[S11-1] A Wideband Metasurface Linear Polarization Converter Xin-Zhi Bo, Bu-Yun Yu, Hao Chen, Lu Ju, Wei-Bing Lu and Zhen-Guo Liu		
11:00 - 11:20	[S11-2] Improved Resolution for 1-Bit Transmitarray Near- Field Focusing Applications Manting Wang, Geng-Bo Wu and Chi Hou Chan		
11:20 - 11:40	[S11-3] Design and Experimental Demonstration of a Low- Profile Differential-Fed Tri-Band Filtering Antenna Xinzhou Huang, Dajiang Li, Ming-Chun Tang, Kun-Zhi Hu, Yang Wang and Richard W Ziolkowski		
11:40 - 12:00	[S11-4] Electronically Controlled 1-Bit Reconfigurable		

Broadband Circular-Polarized Reflective Metasurface Yao Li, Hai Xin, Jianing Yang, Mei Li, Da Yi and Ming-Chun Tang

12:00 - 12:20 [S11-5] High-Isolation Wide-Angle Scanning Antenna Array Using Heterogeneous Metasurface Elements With Ability of Integrating Millimeter-Wave Array Li Wei, Wanchen Yang, Jinghao Li, Quan Xue and Wenquan Che XXX

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Special Session	[S19] Millimeter-Wave Antenna Array Technologies and Their System-Level Applications
Date/Time	Wednesday, 22 May 2024/ 10:40 – 12:20
Venue	Mr and Mrs Lau Tat Chuen Lecture Theatre (LT-5)
Organizer(s) &	Jingfeng Chen*, Shanghai Jiaotong University, China
*Chair(s)	Dongze Zheng, Southeast University, China
10:40 -11:00	[S19-1] Adaptive Smart Jamming Technology With Time Modulated Array Anjie Cao, Liu Yang, Xiaonan Zhao, Zhengji Liu, Ronghong Jin and Jingfeng Chen
11:00 -11:20	[S19-2] A Single-Channel Detection Method With Multi- Order Matched Filters for Wideband Linear Frequency Modulation Harmonic Signals Yu Xia, Anjie Cao, Xiaonan Zhao, Tong Wu, Ronghong Jin and Jingfeng Chen
11:20 -11:40	[S19-3] A Sub-6 GHz and MMW Dual-Band Aperture- Sharing Antenna by Reusing Mushroom-Shaped Structure Qing-Hu Zhang, Wen-Wen Yang, Xin Geng, Kai Xu, Ling -Yan Zhang and Jian-Xin Chen
11:40 -12:00	[S19-4] FMCW Detection Based on Harmonic Characteristic Analysis Method Without Velocity- Direction Coupling Tong Wu, Xiaonan Zhao, Zhengji Liu, Yu Xia, Ronghong Jin and Jingfeng Chen

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Session	[R6] Millimeter-Wave Antennas and Passive Devices (2)
Date/Time	Wednesday, 22 May 2024 / 10:40 – 12:20
Venue	Chan Kei Biu Lecture Theatre (LT-6)
Chair(s)	Ikmo Park, Ajou University, Korea Wanchen Yang, Hohai University, China
10:40 - 11:00	[R6-1] 5G Non-terrestrial Networks Evolving Towards 6G Lilei Wang
11:00 - 11:20	[R6-2] A Novel Flexible Broadband Transmission Line With Low Loss
	Tingting Xie, Pengwei Gong, Chuntao Yang, Wen Xie and He Jiang
11:20 - 11:40	[R6-3] Crossed-Dipole-Shaped Metasurface Transmissive Linear-To-Circular Polarization Converter
	Cho Hilary Scott Nkimbeng, Heesu Wang and Ikmo Park
11:40 - 12:00	[R6-4] Dual-Band Decoupling Method for Millimeter-Wave High-Isolation Wide-Angle Scanning Phased Array Antenna
	Jinghao Li, Wanchen Yang, Qiaguang Liu, Li Wei, Quan Xue and Wenquan Che
12:00 - 12:20	[R6-5] A High-Gain Sleeve Loaded Dielectric Rod Antenna for Millimeter-Wave Applications Minjun Wu, Yujian Li and Junhong Wang
12:20 - 13:50	Lunch @ 19/F, Lau Ming Wai Academic Building (LAU)



	[S4] Advanced Technologies and Processes Empowered
Special Session	Antennas for Satellite Applications
Date/Time	Wednesday, 22 May 2024 / 13:50 – 15:50
Venue	Tin Ka Ping Lecture Theatre (LT-1)
Organizer(s) & *Chair(s)	Kai Xu Wang*, Harbin Institute of Technology, China Xue Ren*, Shenzhen University, China
13:50 - 14:10	[S4-1] Accurate and Efficient Computation for Irregular Reflectarray Antenna
	Peng-Fa Li and Shi-Wei Qu
14:10 - 14:30	[S4-2] A 3D-Printed Millimetre-Wave Ultra-Compact Broadband Coupler With Quadrature Phase for Beam- Forming Antennas
	Zhiwei Yin and Yang Yang
14:30 - 14:50	[S4-3] A Wideband Terahertz Microstrip Patch Antenna Array Using Hollow Waveguide Feeding Network Guang-Hua Sun, Zhi Xin Qiu and Kai Xu Wang
14:50 - 15:10	[S4-4] Wide Beamwidth Multi-Band Circularly Polarized Quadrifilar Helix Antenna With Multi-Coil Arms Suiyuan Yu, Shaowei Liao, Wenquan Che and Quan Xue
15:10 - 15:30	[S4-5] A Wideband Millimeter-Wave Circularly Polarized Lens Antenna Using 3-D Printing Technology Wenyi Teng, Kai Xu Wang and Zihao Chen
15:30 - 15:50	[S4-6] A 17.7-21.2 GHz Antenna Element for SATCOM Phased-Array Receiver Hao Jiang, Mei Qian, Shaowei Liao and Quan Xue

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Special Session	[S18] Millimeter-Wave and Terahertz Devices for Wireless Applications
Date/Time	Wednesday, 22 May 2024 / 13:50 – 15:50
Venue	Mr and Mrs Sze Chi Ching Lecture Theatre (LT-2)
Organizer(s) & *Chair(s)	Xiang Gao*, Beijing Institute of Technology, China Zheng Li*, Beijing Institute of Technology, China
13:50 - 14:10	[S18-1] Cryogenic Receiver Frontends of High Sensitivity for Terahertz Communication Applications Xiang Gao, Jia Du and Jianping An
14:10 - 14:30	[S18-2] Research Progress on THz Real-Time Imaging of Non-Cooperative On-The-Move Whole Body Shiyou Wu, Meng Zhao, Shen Zheng, Hang Gao, Chao Li and Guangyou Fang
14:30 - 14:50	[S18-3] Millimeter-Wave Three-Way Coupler Based on Ridge Gap Waveguide Technology Chuhan Wei, Ji-Wei Lian, Yang Liu, Chun Geng and Dazhi Ding
14:50 - 15:10	[S18-4] A Broadband 1-Bit Reconfigurable Reflectarray Antenna for 5G Millimeter Wave Yunli Li, Fan Wu, Dongze Zheng, Zhi Hao Jiang, Wei Hong and Zhang-Cheng Hao
15:10 - 15:30	[S18-5] Electronically Controlled Leaky-Wave Antenna With Wide-Angle and Quasi-Continuous Beam-Scanning Capability Bang Wei, Zheng Li, Zhenyu Qiao, Shan Liu and Junhong Wang



15:30 - 15:50 [S18-6] Investigation on Beam Scanning Speed of Hybrid Leaky-Wave Antenna for Millimeter-Wave Application Peiwen Tang and Hang Wong



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Special Session	[S20] Novel Microwave and Millimeter-wave Antennas
Date/Time	Wednesday, 22 May 2024 / 13:50 – 15:50
Venue	Mr and Mrs David T F Chow Lecture Theatre (LT-4)
Organizer(s) &	Yu-Xiang Sun*, Shenzhen University, China
Chair(s)	Zhe Chen, Shenzhen University, China
13:50 - 14:10	[S20-1] Evaluation of the Effective Degree of Freedom for Multiport Antenna Element
	Qian Zhu, Genze Jiang, Rui Ni, Shanchi Wu, Ganghua Yang and Nan Yang
14:10 - 14:30	[S20-2] Generating Multi-Mode OAMs With Broadened Common Bandwidth Based on PIN Diodes-Loaded Archimedean Spiral Antenna Zhipeng Zhang, Yang Yang, Haoxiang Chen, Fei Shen
14:30 - 14:50	[S20-3] Large Frequency Ratio Grid Antenna and Array Xin Chen and Yu-Xiang Sun
14:50 - 15:10	[S20-4] A Broadband Dual-Polarized Dielectric
	Resonator Antenna for Millimeter-Wave Communication Zi-Jian Deng, Ke Deng, Zhe Chen, Tao Yuan and Qin-juan Zhang
15:10 - 15:30	[S20-5] Investigation on Integrated Dielectric
19.10 19.90	Substrate Antenna Array for Millimeter-Wave Application Wen-jian Sun and Hang Wong
15:30 - 15:50	[S20-6] Filtering Omnidirectional Dipole Antenna

Without Extra Circuits

Xiyao Liu, Tianming Mai and Ning Ken



Special Session	[S23] Sensing With Electronic Terahertz Waves
Date/Time	Wednesday, 22 May 2024 / 13:50 – 15:10
Venue	Mr and Mrs Lau Tat Chuen Lecture Theatre (LT-5)
venue	
Organizer(s) & *Chair(s)	Xianzhong Tian [*] , National University of Singapore, Singapore Jun Hu [*] , Nanjing University of Science and Technology, China
13:50 - 14:10	[S23-1] Accurate Material Characterization With Broadband Electronic Terahertz Imaging Xianzhong Tian, Lue Wen and Yongxin Guo
14:10 - 14:30	[S23-2] New Paradigms & Frontiers in High-Resolution Mm-Wave Imaging: Scalable Array Architectures for Mm- Wave Radars Jingzhi Zhang
14:30 - 14:50	[S23-3] Millimeter Wave Fall Detection System Based on Finite Human Node Scattering Model Weihua Yu, Didi Xu, Yufeng Wang, Mengjun Chen and Yaze Cui
14:50 - 15:10	[S23-4] A Comprehensive Exploration: Advancements in High-Resolution High-Efficiency Imaging for Vortex Waves Deploying Symmetric and Asymmetric MIMO Array Ting Jiang, Jun Hu, Xianzhong Tian and Wen Wu

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Special Session	[S24] Terahertz Sciences and Technologies
Date/Time	Wednesday, 22 May 2024 / 13:50 – 16:30
Venue	Chan Kei Biu Lecture Theatre (LT-6)
Organizer(s)	Jing Li, Purple Mountain Observatory, Chinese Academy of Sciences, China
Chair(s)	Sheng-Cai Shi, Purple Mountain Observatory, National Astronomical Observatories, China
13:50 - 14:10	[S24-1] High-Sensitivity Superconducting Detectors for Terahertz Astronomical Applications Jing Li
14:10 - 14:30	[S24-2] LCT (the Leighton Chajnantor Telescope) Technologies and Its Current Status Feng Liu, Duo Cao, Yi Zhang, Wangzhou Shi and Chenggang Shu
14:30 - 14:50	[S24-3] ROGer - a New Method for Measuring Celestial THz Polarizations Hua-bai Li, Junkun Huang, Weitao Lyu and Jialin Sun
14:50 - 15:10	[S24-4] Microwave Kinetic Inductance Detector Readout With Reflection Jie Hu, Faouzi Boussaha, Maria Appavou, Paul Nicaise, Christine Chaumont, Michel Piat and Piercarlo Bonifacio
15:10 - 15:30	Break



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- 15:30-15:50 **[S24-5] Fabrication and Characterization of Ti-Based** Superconducting Transition Edge Sensor Arrays at Millimeter Waves Zheng Wang, Qiang Zhi, Wen Zhang, Wei Miao, Jiaqiang Zhong, Jing Li and Sheng-Cai Shi
- 15:50 16:10 [S24-6] The Greenland Telescope, Black Hole Shadow, and Photon Ring Ming-Tang Chen
- 16:10 16:30 **[S24-7] The Possibility of Doing Terahertz Astronomy Observation in The Local Sky of Hong Kong** Chun Sing Leung, Chak Man Lee, Kwok Wai Ng, Wing Leung Ho and Man Fai Law



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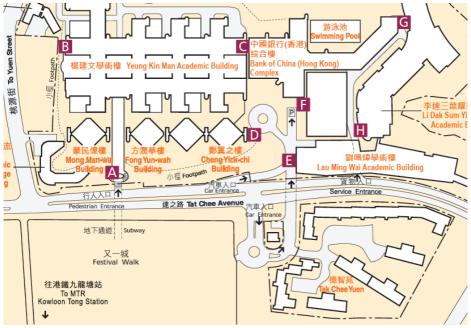


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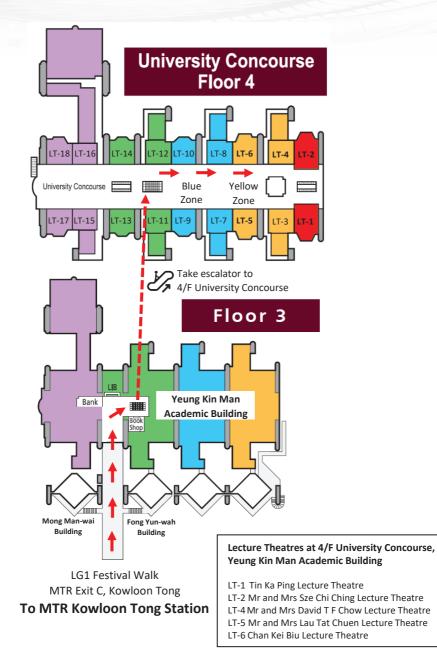
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