



中山大學
SUN YAT-SEN UNIVERSITY



**The 24th IEEE GZ/HK
AP/MTT
Postgraduate Conference**

Program Book

28th October 2023

Sun Yat-Sen University, Guangzhou, China



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2023 The 24th IEEE GZ/HK AP/MTT
Postgraduate Conference

ORGANIZING COMMITTEE

The conference is jointly organized by Sun Yat-Sen University, IEEE AP/MTT Guangzhou Chapter, and IEEE Hong Kong Section AP/MTT Joint Chapter.

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Shaoyong Zheng (Sun Yat-Sen University)

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MTT-S*
Joint Guangzhou Chapter



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CONFERENCE VENUE



School of Electronics and Information Technology

(School of Microelectronics)

No.132, Waihuan East Road, Higher Education Mega Center, Guangzhou

广州市大学城外环东路 132 号中山大学电子与信息工程学院（微电子学院）



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2023 The 24th IEEE GZ/HK AP/MTT Postgraduate Conference

28-October-2023, Room 102, Microelectronics Building (微电子大楼 102)

Grand Hall

Session Chair:

Shaoyong Zheng

09:00-09:10 **Opening Ceremony**

Professor Juncong She

Dean, School of Electronics and Information Technology

Sun Yat-Sen University

09:10-09:40 **Invited Speech I: Recent Advances of Microwave and Millimeter-wave Power Amplifier Techniques for 5G/B5G Wireless Infrastructures**

Associate Professor Xiaohu Fang

Southern University of Science and Technology

09:40-10:10 **Invited Speech II: Design of Wideband MMW CP Lens Antenna**

Associate Professor Kaixu Wang

Harbin Institute of Technology, Shenzhen

10:10-10:40 Coffee Break



28-October-2023, Room 103, Microelectronics Building (微电子大楼 103)

Microwave Technology-MTT Hall

- 10:40-11:00 [Novel Wideband Fully Integrated GaN Power Amplifier Design using a Hybrid Bandpass Lowpass Output Matching Network](#)
Jie Shi¹, Wenqi Dai¹, Xiaohu Fang¹, Xinyu Zhou², Jiangwei Sui³, Jing Xia⁴
¹ Southern University of Science and Technology
² Hong Kong Polytechnic University
³ Sun Yat-sen University
⁴ Jiangsu University
- 11:00-11:20 [Broadband High-Efficiency Dual-Mode Doherty Power Amplifier Using Hybrid F/F-1 Continuous Mode Technology](#)
Yixi Tang¹, Wenjie Feng¹, XinYu Zhou², Weiwei Wang¹, Liming Gu³, Quan Xue¹, Wenquan¹
¹ South China University of Technology
² Hong Kong Polytechnic University
³ Nanjing Electronic Devices Institute
- 11:20-11:40 [A 53–78 GHz Complementary Push-Push Frequency Doubler with Implicit Dual Resonance for Output Power Combining](#)
Yihui Wang, Liang Wu
Chinese University of Hong Kong, Shenzhen
- 11:40-12:00 [A Wideband Antenna Calibration Network Using Multi-Layer Coupling Technology](#)
Chengzhi Wang¹, Wenjie Feng¹, Suyang Shi², Haoshen Zhu¹, Kun Tang¹, Wenquan Che¹, Quan Xue¹
¹ South China University of Technology
² Nanjing Marine Radar Institute
- 12:00-14:00 Lunch**
- 14:00-14:20 [Design of Dual-Band Gysel Power Divider With Filtering Responses](#)
Zeyu Wu, Kaixu Wang
Harbin Institute of Technology, Shenzhen
- 14:20-14:40 [A Tri-mode Switchable Power Amplifier with Power-Efficiency Enhancement for 5G Millimeter-Wave Systems](#)
Weisen Zeng
South China University of Technology



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- 14:40-15:00 [A Simple and Universal Phase Control Method for Designing Directional Couplers With Adjustable Phase Difference Slope and High Linearity](#)
Fosheng Zong, Y. F. Pan
Guangzhou University
- 15:00-15:20 [A GCPW \$3 \times 3\$ Nolen Matrix with Broadband Responses and Flexible Phase Differences](#)
Zizhen Xu¹, Y. F. Pan¹, Y. Yang²
¹ Guangzhou University
² City University of Hong Kong
- 15:20-15:50 Coffee Break**
- 15:50-16:10 [A Diverse/Converged Individual Competition Algorithm for Expensive Electromagnetic Optimization](#)
Jie Lin, ShaoYong Zheng
Sun Yat-Sen University
- 16:10-16:30 [A Wideband Decoupling Technique by Integrating A Coupling-Mode-Transformation-Based Dielectric Surface and A Metasurface](#)
Jiongjian Fang, Wei Lin
The Hong Kong Polytechnic University
- 16:30-16:50 [Wideband Power Divider Chip Based on GaAs Substrate](#)
Xuanyu Chen, Lei Ge
Shenzhen University
- 16:50-17:10 [A Wideband Harvester Using Harmonic-Recycling Technique for Hybrid Ambient Energy Harvesting](#)
Baihua Zeng¹, ShaoYong Zheng², Wing Shing Chan¹
¹ City University of Hong Kong
² Sun Yat-Sen University
- 17:10-17:30 [Enhancing the Performance of Differential Evolution with Consecutive Crossover Strategy based on Dimension Correlation](#)
Dongmei Chen
Jinan University
- 18:00 Banquet**



28-October-2023, Room 214, Microelectronics Building (微电子大楼 214)

Antenna Propagation-AP Hall-I

- 10:40-11:00 [A Wideband Dielectric Resonator Antenna with Stabilization of Directivity](#)
Yutao Liang, Zhe Chen
Shenzhen University
- 11:00-11:20 [A \$\pm 45^\circ\$ Dual-Polarized High-Gain Microstrip Patch Antennas Based on Higher-Order Mode](#)
Yuzhong Liang, Fu-Chang Chen
South China University of Technology
- 11:20-11:40 [Ultra-Compact Base Station Antenna Based on Capacitive Loading](#)
Wei Xie, Fu-Chang Chen, Hang Yuan
South China University of Technology
- 11:40-12:00 [Reconfigurable Intelligent Surface Designs: Passive and Active Configurations](#)
Junhui Rao, Chi-Yuk Chiu, Ross Murch
Hong Kong University of Science and Technology
- 12:00-14:00 Lunch**
- 14:00-14:20 [A Wideband Low-Profile Dual-Polarized Transmitarray Antenna](#)
Bingjie Xiang, Luk Kwai-Man
City University of Hong Kong
- 14:20-14:40 [Dual-Polarized Stacked Ceramic Patch Antenna With High Isolation for Base Station](#)
Liyuan Cao, Wen-Jian Sun, Hang Wong
City University of Hong Kong
- 14:40-15:00 [3D-Printed Transparent Fresnel Zone Plate Lens With Multi-beams at Ka-band](#)
Jun Gong, Xin Dai
Guangzhou University
- 15:00-15:20 [Wideband and Low Cross-polarization mm-wave Magnetolectric Dipole Antenna in Fan-out Wafer Level Package](#)
Yuxin Zhang^{1,2}, Hang Wong¹, Qingsha S. Cheng²
¹ City University of Hong Kong
² Southern University of Science and Technology
- 15:20-15:50 Coffee Break**



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- 15:50-16:10 [A High Selectivity Filtering Planar Lens Antenna Using Slotted Microstrip Patches](#)
Zhitao Du, Kai-Xu Wang
Harbin Institute of Technology, Shenzhen
- 16:10-16:30 [A Wideband Planar End-Fire Antenna with High Front-to-Back Ratio](#)
Kaicheng Wang, Hang Wong
City University of Hong Kong
- 16:30-16:50 [Wide Angle Scanning Antenna Array for 5G Millimeter-Wave Applications](#)
Yuqi He¹, Wei Lin¹, Luyu Zhao²
¹ Hong Kong Polytechnic University
² Xidian University
- 16:50-17:10 [Terahertz 1-bit Tunable Reflective Metasurface for Polarization Independent Beam Manipulation](#)
Yat Sing To, Hang Wong
City University of Hong Kong
- 17:10-17:30 [A Low-Profile Folded Transmitarray for High-Resolution Random Transmit-Receive Sensing](#)
Jinyu Wu, Baiyang Liu
Southern University of Science and Technology
- 18:00 Banquet**



28-October-2023, Room 215, Microelectronics Building (微电子大楼 215)

Antenna Propagation-AP Hall-II

- 10:40-11:00 [A Miniaturized Circularly Polarized Antenna Array for Satellite Communication](#)
Jinshan Zeng, Zhe Chen
Shenzhen University
- 11:00-11:20 [A Novel Filtering Dipole Antenna and Its Application in Dual-Polarized Base Station](#)
Hang Yuan, Fu-Chang Chen, Kai-Ran Xiang
South China University of Technology
- 11:20-11:40 [Dual-Polarized Cavity-Backed Full Metal Antenna for In-Band Full-Duplex Application](#)
Kairan Xiang, Fu-Chang Chen, Yu-Zhong Liang
South China University of Technology
- 11:40-12:00 [Capacity Bound for MIMO Antenna Using Loaded N-port Structure When Q-Factor is Restricted](#)
Tianrui Qiao¹, Shanpu Shen¹, Qingsha S. Cheng², Chi-Yuk Chiu¹, Ross Murch¹
¹ Hong Kong University of Science and Technology
² Southern University of Science and Technology
- 12:00-14:00 Lunch**
- 14:00-14:20 [Wideband Co-Linearly Polarized Antenna with High Isolation for In-Band Full-Duplex Application](#)
Qian Tan, Kwai Man Luk
City University of Hong Kong
- 14:20-14:40 [A Wideband 2-bit Reconfigurable Antenna Element Using Magnetolectric Dipole](#)
Hongming Zhang
Guangzhou University
- 14:40-15:00 [A Multi-port Meta-lens Antenna for Multibeam Steering and Switching](#)
Ji Liu, Hang Wong
City University of Hong Kong
- 15:00-15:20 [A Wideband Dual-Polarized Reconfigurable Transmitarray Antenna Element](#)
Zikang Zhang, Xin Dai
Guangzhou University
- 15:20-15:50 Coffee Break**



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- 15:50-16:10 **Mitigating Mutual Coupling in the Near-Field with Active Janus Sources**
Bo Xue, Alex M. H. Wong
City University of Hong Kong
- 16:10-16:30 **A Wideband Millimeter-wave Circularly Polarized Lens Antenna Using 3-D Printing Technology**
Wenyi Teng, Kai Xu Wang
Harbin Institute of Technology, Shenzhen
- 16:30-16:50 **A Transparent ME Dipole Antenna Design Using Metal Mesh Film**
Yifeng Liu, Kwai-Man Luk
City University of Hong Kong
- 16:50-17:10 **Wideband Dielectric Resonator Antenna Design with EBG Structure**
Yuqi Xiao¹, Kwok Wa Leung^{1,2}
¹ City University of Hong Kong
² CityU Shenzhen Research Institute
- 17:10-17:30 **1×2 Radiation Pattern Decoupled Patch Antennas**
Jingbiao Wu¹, Nan Yang¹, Changwu Tong¹, Kwok Wa Leung^{1,2,3}, Kai Lu¹, Pengfei Hu¹
¹ Sun Yat-Sen University
² City University of Hong Kong
³ CityU Shenzhen Research Institute
- 18:00 Banquet**