

2020 13th UK-Europe-China Workshop on Millimetre-Waves and Terahertz Technologies (UCMMT 2020)

**Tianjin, China
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Date / Time: 2020-08-30 AM / 10:20 - 11:35

Room B (Conference ID: 66060322963 / Password: 123456)

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ORAL Session: SA1B

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(Nanjing University of Aeronautics and Astronautics),

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<https://zoom.com.cn/j/67126554872>

ORAL Session: SA1C (Special Session)

**Electromagnetic/Multiphysics Modeling and Optimization using
Artificial Neural Network Techniques**

- Organizers: Feng Feng (Carleton University),
Weicong Na (Beijing University of Technology), Shuxia Yan (Tiangong University)
Session Chairs: Weicong Na (Beijing University of Technology),
Shuxia Yan (Tiangong University)

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mmW & THz IC Design
Session Chairs: Leijun Xu (Jiangsu University) ,
Keping Wang (Tianjin University)

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ORAL Session: SA1E

Antennas

Session Chairs: Zhihong Tu (South China University of Technology),
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Millimeter-Wave/Terahertz Antennas and Antenna Measurement System

- Organizer: Xiaohe Cheng (Beijing University of Posts and Telecommunications)

Session Chairs: Yue Li (Tsinghua University),
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- Organizers: Sanming Hu (Southeast University),
Lei Wang (Heriot-Watt University, Edinburgh, UK)
Session Chairs: Sanming Hu (Southeast University),
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ORAL Session: SP1C (Special Session)

Traceable Measurement of Millimeter Wave and Terahertz
- Organizer: Xiaohai Cui (National Institute of Metrology, China)
Session Chairs: Xiaohai Cui (National Institute of Metrology, China),
Wanshun Jiang (China Electronics Technology Instruments Co. LTD)

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- 15:15 - 15:30 Measurements of S-parameters and Characterisation of Dielectric Materials at Millimetre-wave and Terahertz Frequencies...N/A
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ORAL Session: SP1E (Special Session)

Terahertz Communication for Beyond 5G

- Organizer: Zhi Chen (University of Electronic Science and Technology of China)

Session Chairs: Zhi Chen

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Bo Zhang (University of Electronic Science and Technology of China)

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Session Chairs: Qingfeng Zhang (Southern University of Science and Technology),
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Room B (Conference ID: 66060322963 / Password: 123456)
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ORAL Session: SP2B (Special Session)
3D Printed Microwave, Millimetre-Wave and Terahertz Devices
- Organizers: Lingling Sun (Hangzhou Dianzi University),
Nanjia Zhou (Westlake University)
Session Chairs: Lingling Sun (Hangzhou Dianzi University),
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ORAL Session: SP2C

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ORAL Session: SP2D

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Session Chairs: Yi Huang (University of Liverpool),
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ORAL Session: SP2E (Special Session)

Terahertz Communication for Beyond 5G

- Organizer: Zhi Chen (University of Electronic Science and Technology of China)

Session Chairs: Zhi Chen

(University of Electronic Science and Technology of China),

Bo Zhang (University of Electronic Science and Technology of China)

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ORAL Session: SP2F

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Session Chairs: Mingchun Tang (Chongqing University),
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ORAL Session: MA1B (Special Session)
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- Organizer: Jianjun Ma (Beijing Institute of Technology)
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ORAL Session: MA1C

Antennas

Session Chairs: Yu-Jian Cheng
(University of Electronic Science and Technology of China),
Yujian Li (Beijing Jiaotong University)

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Room D (Conference ID: 61463271604 / Password: 123456)
<https://zoom.com.cn/j/61463271604>

ORAL Session: MA1D

Antennas

Session Chairs: Zhi Hao Jiang (Southeast University)
Lu Guo (Nanjing University of Science and Technology)

- 08:20 - 08:45 Microwave and Millimeter-Wave Dual-Circularly-Polarized Antenna Arrays (Invited)...N/A
Zhi Hao Jiang
(Southeast University)
- 08:45 - 09:00 An Ultra-Wideband Vivaldi Antenna With Reduced Radar Cross Section...N/A
Rong Tan, Ke Zhang, Zhi Hao Jiang
(Southeast University)
- 09:00 - 09:15 A Broadband Reflectarray Employing Strip Elements Loaded with Arc-Shaped Stubs...189
Meijin Guo, Lu Guo
(Nanjing University of Science and Technology)
- 09:15 - 09:30 Design of A Terminal Millimeter Wave Microstrip Antenna Array...N/A
Yu Zhang, Gang Liu, Li Yuan
(Nanjing Institute of Electronic Equipment)
- 09:30 - 09:45 A Novel Substrate Integrated Suspended Line Filter-Antenna for 5G Applications...192
Yan Zhang, Kaixue Ma, Yu Luo, Ningning Yan
(Tianjin University)
- 09:45 - 10:00 Dynamic terahertz beam steering using liquid crystal and vanadium dioxide...N/A
Jingbo Wu, Ze Shen, Jiacheng Cai, Benwen Chen, Caihong Zhang,
Biaobing Jin, Jian Chen, Peiheng Wu
(Nanjing University)
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Date / Time: 2020-08-31 AM / 08:20 - 09:45
Room E (Conference ID: 68910646396 / Password: 123456)
<https://zoom.com.cn/j/68910646396>

ORAL Session: MA1E

Vacuum Electronics

Session Chairs: Yongning He (Xi'an Jiaotong University),
Xiong Chen (Tianjin University)

- 08:20 - 08:45 Effect of Secondary Electron Emission on Low Pressure Microwave Breakdown (Invited)...N/A
Yongning He, Zhangsong Mao
(Xi'an Jiaotong University)
- 08:45 - 09:00 A compact G-band traveling wave tube with 20 W CW output power...N/A
Pan Pan, Ye Tang, Lin Zhang, Xingwang Bian, Qiru Lu, Ying Li,
Bowen Song, Jinjun Feng
(Beijing Vacuum Electronics Research Institute)
- 09:00 - 09:15 Design of a G-band Sheet Electron Beam TWT...195
Changqing Zhang, Jinjun Feng, Jun Cai, Pan Pan, Ye Tang, Siming
Su, Jinrui Zhang
(Beijing Vacuum Electronics Research Institute)
- 09:15 - 09:30 Orbital Angular Momentum Generator Based on Super Smith-Purcell Radiation...197
Zi-Wen Zhang, Chao-Hai Du, Juan-Feng Zhu, Fan-Hong Li, Pu-
Kun Liu, Adrian Cross, Liang Zhang
(Peking University)
- 09:30 - 09:45 Terahertz harmonic gyrotron based on spoof surface plasmon...200
Si-Qi Li, Chao-Hai Du, Juan-Feng Zhu, Zi-Wen Zhang, Li Fan-
Hong, Liang Zhang, Adrian W. Cross, Pu-Kun Liu
(Peking University)
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Date / Time: 2020-08-31 AM / 08:20 - 09:45
Room F (Conference ID: 68194037153 / Password: 123456)
<https://zoom.com.cn/j/68194037153>

ORAL Session: MA1F (Special Session)

New Functional Devices under Millimeter and Terahertz Waves

- Organizers: Liying Feng (Tianjin University of Technology and Education),
Shuang Wang (Tianjin University of Technology and Education)

Session Chairs: Liying Feng (Tianjin University of Technology and Education),
Shuang Wang (Tianjin University of Technology and Education)

- 08:20 - 08:45 Millimeter-wave Dual Rectangular Dielectric Resonator Antenna with Bidirectional Radiation Pattern (Invited)...N/A
Liying Feng, Yajing Li
(Tianjin University of Technology and Education)
- 08:45 - 09:00 High Q toroidal resonances in planar terahertz metamaterials...203
Faisal Khan, Shuang Wang, Quan Li
(Tianjin of University of Technology and Education)
- 09:00 - 09:15 Dual-Band Magnetolectric Dipole Antenna Using a Disturbed Stub...206
Cheng-Guang Sun, Li-Ying Feng
(Tianjin University of Technology and Education)
- 09:15 - 09:30 Design of A Multilayer Millimeter Wave Ultra-Wideband Bandpass Filter...209
Si Yu Zhao, Wu Sheng Ji, Xiao Chun Ji, Wei Dai, Xiang Wei Zhou
(Tianjin University of Technology and Education)
- 09:30 - 09:45 Design of Millimeter Wave Filtering Magneto-Electric Dipole Antenna...212
Yajing Li, Liying Feng
(Tianjin University of Technology and Education)
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Date / Time: 2020-08-31 AM / 10:20 - 11:45
Room B (Conference ID: 64112190271 / Password: 123456)
<https://zoom.com.cn/j/64112190271>

ORAL Session: MA2B
mmW and THz Wave Propagation and Spectroscopy
Session Chairs: Xianbin Yu (Zhejiang University),
Jianjun Ma (Beijing Institute of Technology)

- 10:20 - 10:45 100 Gbit/s 350 GHz Photonic-Wireless Transmission (Invited)...215
Xianbin Yu, Shiwei Wang, Zijie Lu, Wei Li, Shi Jia, Lu Zhang,
Mengyao Qiao, Xianmin Zhang
(Zhejiang University)
- 10:45 - 11:00 Robust Transmitted Waveform Design for Millimeter Wave Radar Based on
SINR and MI Criteria...217
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Wang (National University of Defense
Technology)
- 11:00 - 11:15 Active Control of Terahertz Waves by VO2 Metamaterial Induced by
Intense THz Wave...N/A
Caihong Zhang, Jingbo Wu, Biaobing Jin, Jian Chen, Peiheng Wu
(Nanjing University)
- 11:15 - 11:30 Uniformity analysis of adhesive layer thickness based on terahertz time
domain system...220
Yifan Zhong, Lijuan Li, Jiaojiao Ren, Dandan Zhang
(Changchun University of Science and Technology)
- 11:30 - 11:45 Classification of Different Fritillary by Terahertz Spectroscopy...223
Jun Zhou, Zhenzhen Ge, Lin Zhou, Shuting Wu, Xinmei Xu, Guihua
Jiang
(University of Electronic Science and Technology of China)
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Date / Time: 2020-08-31 AM / 10:20 - 11:35
Room C (Conference ID: 62343631791 / Password: 123456)
<https://zoom.com.cn/j/62343631791>

ORAL Session: MA2C
mmW & THz IC Design

Session Chairs: Haipeng Fu (Tianjin University),
Guodong Su (Hangzhou Dianzi University)

- 10:20 - 10:35 A G-band High-Gain Power Amplifier with Positive Voltage-Feedback in 55-nm CMOS Technology...225
Xin Zhang, Fanyi Meng, Haipeng Fu, Kaixue Ma, Jianguo Ma (Tianjin University)
- 10:35 - 10:50 A Ka-Band 4-Stack Power Amplifier in 130-nm SiGe BiCMOS...228
Hao Zhang, Kenan Xie, Keping Wang (Tianjin University)
- 10:50 - 11:05 Optimization of Frequency Tripler based on Trap-assisted Physics Model of THz Metal-Brim Schottky Barrier Diode...N/A
Jingtao Zhou, Luwei Qi, Xiaoyu Liu, Yi Weng, Zhicheng Liu, Dehai Zhang, Yongbo Su, Peng Ding, Wuchang Ding, Zhi Jin (Institute of Microelectronics, Chinese Academy of Sciences)
- 11:05 - 11:20 Design of Submicron Schottky Diode with High Cutoff Frequency...N/A
Xiaoyu Liu, Jingtao Zhou, Yi Weng, LuWei Qi, Zhicheng Liu, Yong Zhang (Institute of Microelectronics, Chinese Academy of Sciences)
- 11:20 - 11:35 A 220GHz Super-Regenerative Receiver in 65nm CMOS...231
Kaixuan Pang, Cao Wan, Guodong Su, Lingling Sun (Hangzhou Dianzi University)
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Date / Time: 2020-08-31 AM / 10:20 - 12:00
Room D (Conference ID: 61463271604 / Password: 123456)
<https://zoom.com.cn/j/61463271604>

ORAL Session: MA2D

Antennas

Session Chairs: Zhang-Cheng Hao (Southeast University),
Zhuo-Wei Miao (Southeast University)

- 10:20 - 10:45 Generation of Millimeter-Wave and Terahertz Airy Waves Using Metasurfaces (Invited)...234
Zhuo-Wei Miao, Zhang-Cheng Hao
(Southeast University)
- 10:45 - 11:00 Characteristic Impedance Analysis of Compressed Higher-Order Mode Folded Dipole...237
Xiaoyu Ma, Yu Luo, Ningning Yan, Wenxing An, Kaixue Ma
(Tianjin University)
- 11:00 - 11:15 Millimeter-Wave Dual-Beam Leaky-Wave Antennas for Broadside and Endfire Radiations Based on Hybrid Structures...240
Yunjie Geng, Junhong Wang
(Beijing Jiaotong University)
- 11:15 - 11:30 Wideband, Wide-Angle Scanning Long Slot Array with FSS Superstrate...243
Xiukun Li, Lei Sun, Daqun Yu, Kai Yan
(Nanjing Research Institute of Electronics Technology)
- 11:30 - 11:45 An L-Band Ultra Wide-Band Vivaldi Antenna with Wide Beam Angle...246
Kexi Li, Mingzhe Liu, Hong Zhang
(University of Electronic Science and Technology of China)
- 11:45 - 12:00 Tunable Conductivity and Dielectric Constant of Graphene in Microwave, Millimeter wave and Terahertz Band...249
Hai Wang, Hao Liang, Zhengfang Qian
(Shenzhen University)
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Room E (Conference ID: 68910646396 / Password: 123456)
<https://zoom.com.cn/j/68910646396>

ORAL Session: MA2E

Vacuum Electronics

Session Chairs: Wenlong He (Shenzhen University),
Wanzhao Cui

(National Key Laboratory of Science and Technology on Space Microwave)

- 10:20 - 10:35 Free-Electron-Driven Orbital Angular Momentum Emitter...252
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Pu-Kun Liu, Adrian W. Cross, Liang Zhang
(Peking University)
- 10:35 - 10:50 Development of a 1-THz 4th-Harmonic Gyrotron...255
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Zhu, Zi-Wen Zhang, Si-Qi Li, Pu-Kun Pu, Liang Zhang, Adrian W.
Cross
(Peking University)
- 10:50 - 11:05 A novel THz generation scheme based on plasma-beam interaction...257
Hanqi Feng, Lixin Yan, Yingchao Du, Yipeng Wu, Wenhui Huang
(Tsinghua University)
- 11:05 - 11:20 Folded Double Ridge Groove Waveguide for High-power Terahertz
Traveling Wave Tube with Sheet Electron Beam...259
Yanyan Tian, Guoxiang Shu, Wenlong He
(Shenzhen University)
- 11:20 - 11:35 Study of High-order Overmoded Power Couplers for Multiple Sheet
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Tian, Guo Liu, Wenlong He
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Room F (Conference ID: 68194037153 / Password: 123456)
<https://zoom.com.cn/j/68194037153>

ORAL Session: MA2F (Special Session)

Antennas Design with New Material and Technology

- Organizers: Hongxing Zheng (Hebei University of Technology),
Wenmei Zhang (Shanxi University)

Session Chairs: Hongxing Zheng (Hebei University of Technology),
Wenmei Zhang (Shanxi University)

- 10:20 - 10:45 Multibeam Antennas Based on the Metasurface (Invited)...N/A
Wenmei Zhang, Tingting Fan, Jie Luo, Jianan Zhang
(Shanxi University)
- 10:45 - 11:00 Design of Tri-band Antenna with Y-shaped Patch and L-shaped Slot on
Ground Plane...263
Shuaijie Wu, Hongxing Zheng, Mengjun Wang, Erping Li
(Hebei University of Technology)
- 11:00 - 11:15 Directivity of Antenna Enhanced by Using Metasurface Structure...266
Yuanzhong Qiu, Hongxing Zheng, Mengjun Wang, Erping Li
(Hebei University of Technology)
- 11:15 - 11:30 An Ultra Wideband Antenna Array Notched with U-shaped Slot...269
Sheng Shen, Shuaijie Wu, Hongxing Zheng, Mengjun Wang, Erping
Li
(Hebei University of Technology)
- 11:30 - 11:45 A Wideband Circularly Polarized Dipole Antenna Based on Asymmetric
Feeding Technology...272
Chengfang Guo, Liping Han, Wenmei Zhang
(Shanxi University)
- 11:45 - 12:00 A Dual-Band Metamaterial Absorber With Wide-Angle and Polarization
Stability...275
Yanyan Ma, Liping Han, Wenmei Zhang
(Shanxi University)
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Date / Time: 2020-08-31 PM / 14:00 - 15:15
Room B (Conference ID: 64112190271 / Password: 123456)
<https://zoom.com.cn/j/64112190271>

ORAL Session: MP1B
mmW & THz IC Design
Session Chairs: Fanyi Meng (Tianjin University),
Sheng Xie (Tianjin University)

- 14:00 - 14:15 A Millimeter-Wave 8-bits Digital Variable Gain Amplifier in 0.13- μ m SiGe BiCMOS...278
Yu Wang, Fanyi Meng, Haipeng Fu, Kaixue Ma
(Tianjin University)
- 14:15 - 14:30 A 60GHz Power Amplifier with Coupled-line Matching Balun in 55-nm CMOS...281
Jiwei Huang, Jiabin Zhu, Qiao Tong
(Fuzhou University)
- 14:30 - 14:45 DC-40 GHz DPDT Switch Matrix Design with Novel Device in 300nm RFSOI...284
Bo Yu, Kaixue Ma, Fanyi Meng, Kiat Seng Yeo, Ting Guo, Jason Wong, Alfred Chong
(Globalfoundries Singapore)
- 14:45 - 15:00 A 0.48 THz Quadrupler with SIW-SPP for Harmonic Recovery in 55-nm CMOS Technology...287
Zhen Yang, Kaixue Ma, Fanyi Meng, Shouxian Mou
(University of Electronic Science and Technology of China)
- 15:00 - 15:15 Design and simulation of 1THz hybrid transmission structure based on a polymer...291
Yi Weng, Xiao-Yu Liu, Jing-Tao Zhou
(Institute of Microelectronics, Chinese Academy of Sciences)
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Date / Time: 2020-08-31 PM / 14:00 - 15:25
Room C (Conference ID: 62343631791 / Password: 123456)
<https://zoom.com.cn/j/62343631791>

ORAL Session: MP1C (Special Session)
5G/6G Antennas and Associated Testing Methodology
- Organizers: Xiaoming Chen (Xi'an Jiaotong University),
Yingsong Li (Harbin Engineering University)
Session Chairs: Xiaoming Chen (Xi'an Jiaotong University),
Yingsong Li (Harbin Engineering University)

- 14:00 - 14:25 Robust Plane Wave Generator Design in Small Anechoic Chamber Setup Using Parameterized Field Distribution Method (Invited)...294
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(Beihang University)
- 14:25 - 14:40 Permittivity Optimization of Lens Based on Multi-beam Planar Luneberg Lens Antenna...N/A
Changbin Liu, Anxue Zhang, Siming Liu
(Xi'an Jiaotong University)
- 14:40 - 14:55 Microfluidic Filtering Antenna for Sensor Application...297
Jingyu Cui, Anxue Zhang, Sen Yan
(Xi'an Jiaotong University)
- 14:55 - 15:10 Design of A Dual-Band SIW Antenna Array...299
Wendong Liu, Sen Yan
(Xi'an Jiaotong University)
- 15:10 - 15:25 A Wideband Kanji Patch Antenna for 5G Sub-6-GHz Applications...302
Jianfeng Jiang, Yingsong Li
(Harbin Engineering University)
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Date / Time: 2020-08-31 PM / 14:00 - 15:25
Room D (Conference ID: 61463271604 / Password: 123456)
<https://zoom.com.cn/j/61463271604>

ORAL Session: MP1D

mmW Devices

Session Chairs: Yuan Yao (Beijing University of Posts and Telecommunications),
Zhen Liao (Hangzhou Dianzi University)

- 14:00 - 14:25 Microwave Vortex Beam Generation Based on Spoof Plasmon Ring Resonators (Invited)...N/A
Zhen Liao, Guo Qing Luo
(Hangzhou Dianzi University)
- 14:25 - 14:40 Third-order microstrip inter-finger filter...304
Ao Liu, Peng Chen, Hui Zhang, Xutao Yu
(Southeast University)
- 14:40 - 14:55 Design of a new CMRC low-pass filter...N/A
Tianrui Li, Bo Zhang, Jiale Wang, Yong Fan
(University of Electronic Science and Technology of China)
- 14:55 - 15:10 Switchable Ultra-Wide Absorber/Absorptive Frequency Selective Reflector Using Ideal PIN Diode...307
Yili Zhang, Yufeng Yu, Guo Qing Luo, Weiliang Yu
(Hangzhou Dianzi University)
- 15:10 - 15:25 Comparing Novel MMIC and Hybrid Circuit High Efficiency GaAs Schottky Diode mm-wave Frequency Doublers...N/A
Jeff Powell, Colin Vegas, Hosh Sanghera, Peter Huggard, Byron Alderman
(Teratech Components)
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