Jing Cai

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Educations

***Shanghai University* (University of 211Project)**

Master of Electromagnetic field and microwave technology September 2016 – April 2019

- **Major:** High-sensitivity microwave sensor based on metamaterial
- **Supervisor:** Associate Professor Yongjin Zhou
- **Related Courses:** Advanced electromagnetic field theory, Advanced circuit theory, Microwave millimeter wave circuit and network, Computational electromagnetics

Jiangxi University of Finance and Economics

Bachelor of electronic and information engineering September 2012 – June 2016

- **Major:** Electronic and information engineering
- **Related Courses:** Theoretical basis of electromagnetic field, Fundamentals of microwave technology

Experiences

Capacity Building of 5G millimeter-wave Terminal Test

（Work experience in Huawei） June 2019 –Now

- Designed ultra-wideband 5G millimeter-wave CP Link antenna based on ME dipole and metasurface, covering n257/n258/n260/n261 band (24.25-29.5GHz & 37-40GHz), and successfully landed millimeter wave terminal TRP test project;
- Responsible for building RSE capabilities out of the millimeter wave band, including program analysis, hardware circuits design, and automated development;
- Lead 5G millimeter wave multi-feed technology project, responsible for designed of system scheme, switch matrix and automatic program, realizing in unattended high-speed fully automated testing;

Research on Extremely High Sensitivity Microwave Integrated Sensor Based on Gain Metamaterial

（Shanghai Natural Science Foundation Project） January 2018 – April 2019

- A new, high-Q resonator design is realized by combining the 1/4-mode circular SIW and CSRR, and a microfluidic channel is added at the place where the CSRR resonance is strong, which further achieves high-sensitivity microfluidic alcohol Sensor design;
- Combined with a metal grooved resonant ring and a negative feedback amplifier circuit, a grooved metal ring resonator loaded with an LNA chip is designed, and an active high-sensitivity alcohol sensor is designed by placing a catheter into which liquid can be injected at the place where its resonance electric field is strongest

Design of 5G Millimeter-Wave Beam Tracking System

（Enterprise cooperation project） October 2017 – April 2019

- Design and verification of 2×8 array mmW patch antenna and the implementation of beamforming algorithm;
- Responsible for RF front-end hardware circuit design, including chip selection and verification, amplitude and phase calibration of 16 TRx Channels;

Publications

- **Jing Cai**, Yong Jin Zhou, Yan Zhang, and Qiao Yu Li, Gain-assisted ultra-high-Q spoof plasmonic resonator for the

sensing of polar liquids. Optics express, Vol. 26, No. 19, 2018, 25460-25470. (**Q2, SCI:** 000444705000098, **IF:** 3.356)

- **Jing Cai**, Yong Jin Zhou, Xin Mi Yang, A metamaterials-loaded quarter mode SIW microfluidic sensor for microliter liquid characterization. Journal of Electromagnetic Waves and Applications, Vol. 33, No. 3, 2019, 261-271. (**Q3, SCI:** 000455346700001, **IF:** 1.37)
- Yan Zhang, Yong Jin Zhou, **Jing Cai**, Jie Hui Jiang, Amplification of spoof localized surface plasmons on active plasmonic metamaterials. Journal of Physics D: Applied Physics, Vol. 51, No. 29, 2018. (**Q3, SCI:** 00043692690002, **IF:** 2.328)
- **Jing Cai**, Yong Jin Zhou, and Qiao Yu Li, A High-Q Plasmonic Resonator Using Active Metamaterials. 2018 Cross Strait Quad-Regional Radio Science and Wireless Technology Conference (CSQRWC). IEEE, 2018, 1-3. (**EI:** 20185106253194)
- **Jing Cai** and Yong Jin Zhou, A Compact Surface Plasmonic Band-Pass Filter with Sharp Out-of-Band Rejection. 2018 IEEE International Conference on Computational Electromagnetics (ICCEM). IEEE, 2018, 1-2. (**EI:** 20184806159072)
- Yong Jin Zhou, **Jing Cai**, Liu Yang, and Chao Zhang, Highly Sensitive Microwave Microfluidic Chemical Sensors Based on Metamaterials. 2018 IEEE International Conference on Computational Electromagnetics (ICCEM). IEEE, 2018, 1-3. (**EI**: 20184806159191)

Awards

- 2019 Outstanding Graduate of Shanghai
- 2019 National Scholarship for Masters
- 2019 First-class school scholarship
- 2018 Shanghai Graduate Academic Forum (Electronic Science and Technology) Outstanding Paper Award
- 2018 Second-class school scholarship
- 2017 Third-class school scholarship

Skills

- Familiar with Using HFSS, CST, ADS commercial simulation software
- Use Origin, Microsoft Office (Word, Excel, PowerPoint) for writing papers
- Familiar with using of Oscilloscope, Spectrum analyzer, Vector network analyzer, Signal source
- Familiar with programming in Python

Hobbies

- Photography, Fitness, Table tennis, Reading