Peng Mei
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Research profile

Peng Mei (Senior Member, IEEE) was born in Suizhou, Hubei Province, in 1993. He received the B.Eng and M.Eng. degrees (with highest honors) in electromagnetic field and microwave technology from the University of Electronic Science and Technology of China (UESTC), Chengdu, China, and Ph.D. degree in wireless communications from the Aalborg University, Demark, in 2015, 2018, 2021, respectively. Dr. Mei finished his postdoctoral training in Aug. 2023, and is currenly working as an Assistant Professor at Department of Electronic Systems, Aalborg University.
Dr. Mei was a recipient of the Outstanding Student of UESTC (only 10 awardees from 12000 graduate students, the highest honor awarded to individual at UESTC) in 2017, the Excellent Graduate Student of UESTC in 2018, and the Excellent Graduate Student of Sichuan Province in 2018. Dr. Mei was also twice recipient of the National Scholarships from the Ministry of Education of the People's Republic of China, in 2016 and 2017. Dr. Mei was a recipient of Excellent Master Thesis from the Chinese Institute of Electronics (CIE) in 2019.
Dr. Mei served as a Session Chair for the IEEE-APS Topical Conference on Antennas and Propagation in Wireless Communications (APWC), Granada, Spain, in September 2019, served as a Session Chair for the PhotonIcs & Electromagnetics Research Symposium (PIERS), Hangzhou, China, in April, 2022, and served as a Session Chair for the 2022 International Symposium on Antennas and Propagation (ISAP), Sydney, Australia, in Nov, 2022. Dr. Mei is also invited as a Session Chair for the 2023 PhotonIcs & Electromagnetics Research Symposium (PIERS), Prague, Czech, in 2023, a chief guest editor of the special issue entitled "Advanced Massive MIMO Antenna Arrays, Metasurfaces, and Reconfigurable Intelligent Surfaces for Sensing, Localization, and Wireless Communications" launched by Sensors, 2022, a chief guest editor of the special issue entitlted "Selected Papers from the 2023 International Workshop on Antenna Technology" launched by Sensors, 2023, a lead guest editor of the spcial section entitled "Recent Advances on Absorbers/Rasorbers and Their Applications on Antennas and EMC" launched by the IEEE Open Journal of Antennas and Propagation, a guest editor of the article collection entitled "Advances in Antenna Design and Radio Propagation for Integrated Sensing and Communications" launched by the IEEE Open Journal of Antennas and Propagation, and best paper competition co-chair of the 2023 international workshop on antenna technology (iWAT 2023), and was invited to deliver an invited talk at IWAT2024. His current research interests include: periodic structures, metamaterials, reflectarray/transmitarray antennas, and multibeam millimeter-wave antennas, and reconfigurable intelligent surfaces. Dr. Mei was a recipient of top reviewer of the IEEE Transactions on Antennas and Propagation from 2022 to 2024, three consecutive years, was listed as World Top 2% Scientists in the Year 2023 and 2024, two consecutive years. Dr. Mei has been selected as 2025 IEEE Antennas and Propaation Society Young Professional Ambassador.

Qualifications

Wireless Communications, Ph.D, Millimeter-wave Transmitarray and Reflectarray Antennas for Communications Systems.
1 May 2019 → 22 Nov 2021
Award Date: 22 Nov 2021

Electromagnetic Fields and Microwave Technology, Master, University of Electronic Science and Technology of China
1 Sept 2015 → 30 Jun 2018
Award Date: 30 Jun 2018

Electromagnetic Fields and Wireless Technology, Bachelor, University of Electronic Science and Technology of China
1 Sept 2011 → 30 Jun 2015
Award Date: 30 Jun 2015

Research outputs

Design of Broadband Low-profile Transmitarrays at Ka-band with High-Permittivity 3D-printed Materials

Cai, Y., Matos, S., Mei, P., Felício, J., Fernandes, C., Costa, J. & Zhang, S., 18 Aug 2025, (Accepted/In press) In: I E E E Transactions on Antennas and Propagation.

Development of Wideband Transmitarray Antennas With Adaptive Bidirectional Beam Reconfigurability for mm-Wave IoT Applications

Mei, P., Pedersen, G. F. & Zhang, S., 15 Aug 2025, In: IEEE Internet of Things Journal. 12, 16, p. 34044-34053 10 p.

High Gain and Low Gain Roll-Off Mechanically Beam-Steerable Transmitarray Antennas

Mei, P. & Zhang, S., 8 Nov 2024, *2024 International Symposium on Antennas and Propagation (ISAP).* IEEE (Institute of Electrical and Electronics Engineers), p. 1-2 2 p. 10846270

Electromagnetic Modeling of Mechanically-Controlled Reconfigurable Intelligent Surfaces

Hamza, A. M., Mei, P., Franek, O. & Zhang, S., 30 Sept 2024, *2024 IEEE International Symposium on Antennas and Propagation and INC/USNC-URSI Radio Science Meeting (AP-S/INC-USNC-URSI).* IEEE (Institute of Electrical and Electronics Engineers), p. 1575-1576 2 p. (I E E E Antennas and Propagation Society. International Symposium).

Electronically Reconfigurable Filtering Reflectarray Antenna Using Polarization Conversion Elements with Controllable Conversion Zeros

Fu, W., Cai, Y., Mei, P., Pedersen, G. F. & Zhang, S., 31 Jul 2024, In: I E E E Transactions on Antennas and Propagation. 72, 9, p. 7359-7364 6 p.

A Fully Integrated Darlington-Cascode Distributed Amplifier with m-Derived Matching Sections

Yang, Y. M., Lin, X. Q., Dong, J. S. & Mei, P., May 2024, In: I E E E Microwave and Wireless Components Letters. 34, 5, p. 524-527 4 p.

A Novel Metasurface Inverse Design Based on Back Propagation Neural Network

Qin, T., Wen, S., Lin, X., Cao, Y., Cai, Y. & Mei, P., 26 Apr 2024, *18th European Conference on Antennas and Propagation, EuCAP 2024.* IEEE (Institute of Electrical and Electronics Engineers), 5 p. 10501758

Tri-Band Dual-Polarized Shared-Aperture Antenna Arrays with Wide-Angle Scanning and Low Profile for 5G Base Stations

Sun, Y., Zhang, J., Mei, P., Luo, S., Fu, W. & Zhang, S., 1 Mar 2024, In: I E E E Transactions on Antennas and Propagation. 72, 3, p. 2455-2467 13 p.

A Generalized Method for Gain Bandwidth Enhancement of Transmitarray Antennas Considering Oblique Incidences

Cai, Y., Mei, P., Lin, X. Q. & Zhang, S., Jan 2024, In: I E E E Transactions on Circuits and Systems. Part 2: Express Briefs. 71, 1, p. 121-125 5 p., 10188894.

Efficient Beam Manipulation with Phase Symmetry Operations on Transmitarrays for Flat-top Beams

Cai, Y., Mei, P., Lin, X. Q. & Zhang, S., 2024, In: I E E E Transactions on Antennas and Propagation. 72, 10, p. 7536-7545 10 p.

Efficient Methods to Enhance the Bandwidths of Transmitarray Antennas

Mei, P., Cai, Y. & Zhang, S., 2024, *2024 IEEE International Workshop on Antenna Technology, iWAT 2024.* IEEE (Institute of Electrical and Electronics Engineers), p. 169-172 4 p. 10535775

Gain Bandwidth Enhancement and Sidelobe Level Stabilization of mm-Wave Lens Antennas Using AI-driven Optimization

Mwang'amba, R., Mei, P., Akinsolu, M., Liu, B. & Zhang, S., 2024, In: I E E E Antennas and Wireless Propagation Letters. 23, 11, p. 3554-3558 5 p., 10479985.

Guest Editorial Introduction to the Special Section on Recent Advances on Absorbers/Rasorbers and Their Applications on Antennas and EMC

Mei, P., Omar, A., Li, B., Zhang, S. & Hong, W., 2024, In: IEEE Open Journal of Antennas and Propagation.

Low-Profile Dual-Band Shared-Aperture Composite Antenna Array Consisting of Ka-Band Reflectarray and X-Band Phased Array for Satellite Communications

Yang, Y., Su, Y., Lin, X. Q., Yao, Y., Yu, Y., Mei, P., Liang, X. & Fan, Y., 2024, In: I E E E Transactions on Antennas and Propagation. 72, 12, p. 9462-9467 6 p., 10571812.

Millimeter-Wave Beam-Steerable Lens Antenna with Reduced Profile and Enhanced Gain

Cai, Y., Mei, P., Lin, X. Q. & Zhang, S., 2024, *18th European Conference on Antennas and Propagation, EuCAP 2024.* IEEE (Institute of Electrical and Electronics Engineers), 10501517

Characterizations of Millimeter-Wave Reconfigurable Intelligent Surfaces in the Near-Field Region

Mei, P., Pedersen, G. F. & Zhang, S., Aug 2023, *2023 Photonics and Electromagnetics Research Symposium, PIERS 2023 - Proceedings.* IEEE (Institute of Electrical and Electronics Engineers), p. 2079-2085 7 p. 10221249. (Photonics & Electromagnetics Research Symposium (PIERS)).

Efficient Synthesis of Angular Selective Surfaces Based on Accurate Equivalent Circuit Analysis

Qin, T., Lin, X. Q., Yao, Y., Liu, Y., Liu, H., Hao, P. & Mei, P., Jun 2023, In: I E E E Transactions on Microwave Theory and Techniques. 71, 6, p. 2625-2638 14 p.

A 3D-Printed Holographic Impedance Surface for Sub-THz Enabled by Transmission Line Method

Yao, M., Mei, P., Pedersen, G. F. & Zhang, S., May 2023, *2023 17th European Conference on Antennas and Propagation (EuCAP).* IEEE (Institute of Electrical and Electronics Engineers), 10133299

Mutual Coupling Reductions of Dielectric Resonator Antennas without Extra Circuits

Mei, P., Pedersen, G. F. & Zhang, S., May 2023, *17th European Conference on Antennas and Propagation, EuCAP 2023.* IEEE (Institute of Electrical and Electronics Engineers), 4 p. 10133143

Hybrid Absorber with Dual-Band Performance and High Absorption Rate

Zhekov, S. S., Mei, P., Pedersen, G. F. & Fan, W., 1 Feb 2023, In: I E E E Transactions on Electromagnetic Compatibility. 65, 1, p. 79-87 9 p.

Performance Improvement of Mechanically Beam-Steerable Transmitarray Antennas by Using Offset Unifocal Phase Symmetry

Mei, P., Pedersen, G. F. & Zhang, S., 1 Jan 2023, In: I E E E Transactions on Antennas and Propagation. 71, 1, p. 1129-1134 6 p.

Decoupling of Dual-Polarized Antenna Arrays Using Non-Resonant Metasurface

Luo, S., Mei, P., Zhang, Y., Pedersen, G. F. & Zhang, S., Jan 2023, In: Sensors. 23, 1, 152.

Decoupling for Millimeter-Wave Array Antennas Using Near-Field Shrinking Dielectric Superstrate

Luo, S., Zhang, Y., Mei, P., Pedersen, G. F. & Zhang, S., 2023, In: IEEE Open Journal of Antennas and Propagation. 4, p. 1187-1194 8 p.

Highly Omnidirectional Monopole-like Radiation With SIW Slot Antenna in Ka-Band

Cai, Y., Mei, P., Lin, X. Q. & Zhang, S., 2023, *2023 17th European Conference on Antennas and Propagation (EuCAP).* IEEE (Institute of Electrical and Electronics Engineers), 10133573

Low-Cost Third-Harmonic Mixer for W-Band Retrodirective System Applications

Zeng, J. J., Lin, X. Q., Su, Y. H., Yang, Y. M., Mei, P. & Zhu, Z. B., 1 Nov 2022, In: IEEE Microwave and Wireless Components Letters. 32, 11, p. 1323-1326 4 p.

On the Study of Reconfigurable Intelligent Surfaces in the Near-Field Region

Mei, P., Cai, Y., Zhao, K., Ying, Z., Pedersen, G. F., Lin, X. & Zhang, S., Nov 2022, In: I E E E Transactions on Antennas and Propagation. 70, 10, p. 8718-8728 11 p.

A Monopole-Based Wideband Absorber for Ultra Large Angles

Cai, Y., Mei, P., Chen, Z., Lin, X. Q. & Zhang, S., 1 Oct 2022, In: I E E E Transactions on Electromagnetic Compatibility. 64, 5, p. 1552 - 1559 8 p.

Operating Band Shifting of Resistor-Loaded Antenna-Based Absorber by Using Parasitic Element Concept
Zhekov, S. S., Mei, P., Pedersen, G. F. & Fan, W., 1 Aug 2022, In: I E E E Transactions on Antennas and Propagation. 70 , 8, p. 7294-7299 6 p.

MIMO Antenna Array Decoupler
Mei, P. (Inventor), Zhang, S. (Inventor), Xu, Z. (Inventor) & Pedersen, G. F. (Inventor), 3 Mar 2022, IPC No. PCT/EP2020/073623, H01Q1/52; H01Q21/06;, Patent No. WO2022042817A1, 24 Aug 2020

A Single-Layer 10-30GHz Reflectarray Antenna for the Internet of Vehicles
Zhang, L., Zhang, J., He, Y., Mao, C., Li, W., Wong, S.-W., Mei, P. & Gao, S., 1 Feb 2022, In: I E E E Transactions on Vehicular Technology. 71, 2, p. 1480-1490 11 p.

A High-Gain Fabry-Perot Antenna Based on Partially Reflecting Surfaces and Polarization Conversion Surfaces
Cai, Y., Mei, P., Lin, X. Q. & Zhang, S., 2022, *2022 16th European Conference on Antennas and Propagation, EuCAP 2022.* IEEE (Institute of Electrical and Electronics Engineers), 9768913. (2022 16th European Conference on Antennas and Propagation, EuCAP 2022).

An Overview of Metamaterial Absorbers and Their Applications on Antennas
Mei, P., Pedersen, G. F., Liu, Q., Lin, X. Q. & Zhang, S., 2022, *2022 Photonics & Electromagnetics Research Symposium (PIERS).* IEEE (Institute of Electrical and Electronics Engineers), p. 1053-1060 8 p. 9792666. (Progress in Electromagnetics Research Symposium).

Comparisons of Scalar and Tensor Circularly-Polarized Holographic Artificial Impedance Surfaces
Yao, M., Mei, P., Pedersen, G. F. & Zhang, S., 2022, *The 16th European Conference on Antennas and Propagation (EuCAP).* IEEE (Institute of Electrical and Electronics Engineers), 5 p. 9769042

Enabling Simultaneous Near-Field Focusing and Far-Field Radiation Using Multiple Lenses
Mei, P., Pedersen, G. F. & Zhang, S., 2022, *The 2022 International Symposium on Antennas and Propagation.* IEEE (Institute of Electrical and Electronics Engineers), p. 199-200 2 p.

Generation of Sum and Difference Radiation Beam with a 2-bit Polarization-Dependent Metasurface
Mei, P., Pedersen, G. F. & Zhang, S., 2022, *2022 16th European Conference on Antennas and Propagation (EuCAP).* IEEE (Institute of Electrical and Electronics Engineers), 9769559

Design of a Triple-Band Shared-Aperture Antenna with High Figures of Merit
Mei, P., Lin, X. Q., Pedersen, G. F. & Zhang, S., Dec 2021, In: I E E E Transactions on Antennas and Propagation. 69, 12 , p. 8884 - 8889 6 p.

Water-Based Dual-Band Metamaterial Absorber
Zhekov, S. S., Mei, P., Fan, W. & Pedersen, G. F., 22 Mar 2021, *15th European Conference on Antennas and Propagation, EuCAP 2021.* IEEE (Institute of Electrical and Electronics Engineers), 5 p. 9411323

A Dual Polarized and High Gain X-/Ka Band Shared Aperture Antenna with High Aperture Reuse Efficiency
Mei, P., Zhang, S. & Pedersen, G. F., Mar 2021, In: I E E E Transactions on Antennas and Propagation. 69, 3, p. 1334-1344 11 p., 9210161.

A Broadband and FSS-Based Transmitarray Antenna for 5G Millimeter-Wave Applications
Mei, P., Pedersen, G. F. & Zhang, S., Jan 2021, In: I E E E Antennas and Wireless Propagation Letters. 20, 1, p. 103-107 5 p., 9280323.

A Low-Profile and Beam-Steerable Transmitarray Antenna: Design, Fabrication, and Measurement [Antenna Applications Corner]
Mei, P., Zhang, S. & Pedersen, G. F., 2021, In: I E E E Antennas and Propagation Magazine. 63, 5, p. 88-101 14 p.

Decoupling of a Wideband Dual-Polarized Large-Scale Antenna Array with Dielectric Stubs
Mei, P., Zhang, Y. & Zhang, S., 2021, In: I E E E Transactions on Vehicular Technology. 70, 8, p. 7363-7374 12 p., 9457163.

Millimeter-Wave Transmitarray and Reflectarray Antennas for Communications Systems
Mei, P., 2021, Aalborg Universitetsforlag. 167 p.

A Low-Cost, High-Efficiency and Full-Metal Reflectarray Antenna with Mechanically 2-D Beam-Steerable Capabilities for 5G Applications
Mei, P., Zhang, S. & Pedersen, G. F., Oct 2020, In: I E E E Transactions on Antennas and Propagation. 68, 10, p. 6997-7006 10 p., 9093159.

A Wideband 3D Printed Reflectarray Antenna with Mechanically Reconfigurable Polarization
Mei, P., Zhang, S. & Pedersen, G. F., Oct 2020, In: I E E E Antennas and Wireless Propagation Letters. 19, 10, p. 1798-1802 5 p., 9173781.

Retrieval of Effective Permittivity and Permeability of Periodic Structures on Dielectric and Magnetic Substrates
Mei, P., Zhang, S., Lin, X. & Pedersen, G. F., 8 Jul 2020, *2020 14th European Conference on Antennas and Propagation (EuCAP).* IEEE (Institute of Electrical and Electronics Engineers), 5 p. 9135941. (Porceedings of the IEEE European Conference on Antennas and Propagation (EuCAP)).

A Reflectarray Antenna Designed with Gain Filtering and Low-RCS Properties
Mei, P., Zhang, S., Cai, Y., Lin, X. & Pedersen, G. F., 1 Aug 2019, In: I E E E Transactions on Antennas and Propagation. 67, 8, p. 5362-5371 10 p., 8693572.

A Millimeter-Wave Gain Filtering Transmitarray AntennaDesign Usinga Hybrid-Lens
Mei, P., Zhang, S., Lin, X. & Pedersen, G. F., Jul 2019, In: I E E E Antennas and Wireless Propagation Letters. 18, 7, p. 1362-1366 5 p., 8713586.

Design of An Absorptive Fabry-Perot Polarizer and Its Application
Mei, P., Zhang, S., Lin, X. & Pedersen, G. F., Jul 2019, In: I E E E Antennas and Wireless Propagation Letters. 18, 7, p. 1352-1356 5 p., 8713585.

A Triple-Band Absorber with Wide Absorption Bandwidths Using Impedance Matching Theory
Mei, P., Zhang, S., Lin, X. & Pedersen, G. F., Mar 2019, In: IEEE Antennas and Wireless Propagation Letters. 18, 3, p. 521-525 5 p., 8629031.

A Low-Profile Patch Antenna with Monopole-Like Radiation Patterns
Mei, P., Zhang, S., Lin, X. Q. & Pedersen, G. F., 2019, *Proceedings of the 2019 9th IEEE-APS Topical Conference on Antennas and Propagation in Wireless Communications, APWC 2019.* IEEE (Institute of Electrical and Electronics Engineers), p. 66-68 3 p. 8870445

A Low Radar Cross Section and Low Profile Antenna Co-Designed with Absorbent Frequency Selective Radome
Mei, P., Lin, X. Q., Yu, J. W., Zhang, P. C. & Boukarkar, A., 2018, In: IEEE Transactions on Antennas and Propagation. 66 , 1, p. 409-413

A novel quasi-TEM mode planar waveguide for periodic structure measurement applications
Jiang, Y., Mei, P. & Lin, X., 2018, In: Progress in Electromagnetics Research Symposium.

Development of a Low Radar Cross Section Antenna with Band-Notched Absorber
Mei, P., Lin, X. Q., Yu, J. W., Boukarkar, A., Zhang, P. C. & Yang, Z. Q., 2018, In: IEEE Transactions on Antennas and Propagation.

Dual-polarization tunable electromagnetic absorber
Mei, P., Zhao, Y. D., Zheng, K. & Lin, X., 2018, *2017 IEEE 6th Asia-Pacific Conference on Antennas and Propagation, APCAP 2017 - Proceeding.*

Realization of a low radar cross section antenna based on band-notched absorber
Mei, P., Lin, X. & Zhao, Y. D., 2018, *2017 IEEE 6th Asia-Pacific Conference on Antennas and Propagation, APCAP 2017 - Proceeding.*

A Band-Notched Absorber Designed with High Notch-Band-Edge Selectivity
Mei, P., Lin, X. Q., Yu, J. W. & Zhang, P. C., 2017, In: IEEE Transactions on Antennas and Propagation. 65, 7, p. 3560-3567 8 p.

A novel THz antenna forming three beams using a PIN SPDT switch
Liu, S.-L., Lin, X.-Q., Mei, P., Pang, P. & Su, Y.-H., 2016, *2016 IEEE MTT-S International Wireless Symposium, IWS 2016.* 3 p.

Development of a Resistor-Loaded Ultrawideband Absorber with Antenna Reciprocity
Lin, X. Q., Mei, P., Zhang, P. C., Chen, Z. Z. D. & Fan, Y., 2016, In: IEEE Transactions on Antennas and Propagation.

The atmospheric attenuation of THz wave in different heights and different city region
Yang, X., Mei, P. & Lin, X., 2016, *Asia-Pacific Microwave Conference Proceedings, APMC.*

A simple experimental method to analyze the properties of terahertz-wave propagation in complex atmosphere
Lin, X. Q., Mei, P., Yang, X. F., Yu, J. W., Jiang, Y. & Fan, Y., 2014, *Progress in Electromagnetics Research Symposium.* Electromagnetics Academy, p. 424-427 4 p.

Activities

The 2023 International Workshop on Antenna Technology
Mei, P. (Organizer)
15 May 2023 → 17 May 2023

IEEE Open Journal of Antennas and Propagation (Journal)
Mei, P. (Editor)
5 Apr 2023 → 31 Oct 2024

Sensors (Journal)
Mei, P. (Editor)
1 Sept 2022 → 31 May 2024

Université de Rennes
Mei, P. (Visiting researcher)
26 Nov 2019 → 30 Nov 2019

Prizes

2025 IEEE Antennas and Propagation Society Young Professional Ambassador
Mei, P. (Recipient), 2025

Top reviewers in the IEEE Transactions on Antennas and Propagation
Mei, P. (Recipient), Jul 2022

Top reviewers in the IEEE Transactions on Antennas and Propagation
Mei, P. (Recipient), Jul 2023

Top reviewers in the IEEE Transactions on Antennas and Propagation
Mei, P. (Recipient), 2024

World Top 2% Scientists in Year 2023
Mei, P. (Recipient), 2023

World Top 2% Scientists in Year 2024
Mei, P. (Recipient), 2024