Dr. MENGLIN CHEN, SrMIEEE

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PROFESSIONAL EXPERIENCE

The Hong Kong Polytechnic University, Hong Kong *10/2022 - Present*
Research Assistant Professor
The University of Hong Kong, Hong Kong *04/2018 - 07/2022*
Postdoctoral Research Fellow
The University of Hong Kong, Hong Kong *09/2013 - 03/2014*
Research Assistant

EDUCATION

The University of Hong Kong, Hong Kong *04/2014 - 03/2018*
Department of Electrical and Electronic Engineering Ph.D.
Supervisors: Prof. Lijun Jiang & Prof. Sheng Sun
Queen Mary, University of London, United Kingdom *05/2017 - 10/2017*
School of Electronic Engineering and Computer Science Academic Visitor
Supervisor: Prof. Yang Hao
The University of Hong Kong, Hong Kong *09/2012 - 08/2013*
Department of Electrical and Electronic Engineering M.Sc. (Distinction, top 5%)
Supervisor: Prof. Lijun Jiang
The University of Birmingham, United Kingdom *09/2011 - 07/2012*
School of Electronic, Electrical and Systems Engineering B.Eng. (1st-Class Honours)
Supervisor: Dr. Frederick Huang
Huazhong University of Science and Technology, China *09/2008 - 09/2011*
School of Electronic Science and Technology B.Eng.
Supervisor: Prof. Daoli Zhang

ACADEMIC ACHIEVEMENT

1. Published **19** top-tier journals (12 journals as the first author), **3 book chapters**, and **20 conference papers**.
2. One first-author manuscript published in *Physical Review Letters* was selected as "**Editors' Suggestion**" in 2022.
3. One first-author manuscript published in *IEEE Transactions on Antennas and Propagation (2017, cited 158 times)* was selected as "**ESI Highly Cited Paper (top 1%)**" in 2019.
4. One first-author manuscript published in *Applied Sciences* was selected as "**Featured Papers**" in 2018.
5. Achieved the Google Scholar citation of **684 times**.
6. Achieved the h-index of **13** in Web of Science.
7. Received the **PIERS Young Scientist Award** in 2023, the **ACES Young Scientist Award** in 2021, and delivered **invited talk 5 times** .
8. Won the **Best Student Paper Award** in international conferences **3 times** and **the Hong Kong IoT Award** in 2014.
9. Served as a session chair for the 2021 IEEE IAS Industrial and Commercial Power System Asia and 2021 International Applied Computational Electromagnetics Society (ACES-China) Symposium.
10. Served as a regular reviewer for *IEEE Transactions on Antennas and Propagation*, *IEEE Antennas and Wireless Propagation Letters*, *Physical Review Applied/A/B*, *Applied Physics Letters*, *Scientific Reports*, *IEEE Access*, *IEEE Sensors Journal*, etc.
11. Served as an IEEE student member (2014-2017), member (2018-2021) and senior member (2021-present).

AWARD AND CERTIFICATE

Young Scientist Award *2023*
Awarded by the Photonics and Electromagnetics Research Symposium (PIERS) in Prague, Czech Republic

Young Scientist Award *2021*
Awarded by the International Applied Computational Electromagnetics Society Symposium in Chengdu, China (ACES-China)

Best Student Paper Award *2018*
Awarded by the Photonics and Electromagnetics Research Symposium (PIERS) in Toyama, Japan

Best Student Paper Award *2017*
Awarded by the International Applied Computational Electromagnetics Society Symposium (ACES) in Firenze, Italy

Best Student Paper Award *2016*
Awarded by the 17th IEEE MACAU/HK AP/MTT Postgraduate Conference in Macau SAR, China

Certificate of Merit *2014*
Awarded by the Hong Kong U-21 IoT Awards

RESEARCH INTEREST

1. Advanced electromagnetics-based interdisciplinary research, including those in metamaterials, metasurfaces and photonic crystals.
2. Exploration of topological electromagnetic effects and their applications in microwave/millimeter wave engineering.
3. Novel antenna and transmission line design and applications.

LIST OF PUBLICATION

Journal Papers

1. Z. Lan, **M. L. N. Chen**, J. W. You, and W. E. I. Sha, "Large-area quantum-spin-Hall waveguide states in a three-layer topological photonic crystal heterostructure," *Physical Review A*, vol. 107, no. 4, pp. L041501, Apr. 2023.

2. **M. L. N. Chen**, Y. Bi, H.-C. Chan, Z. Lin, S. Ma, and S. Zhang, "Anomalous electromagnetic tunneling in bianisotropic ε-μ-zero media," *Physical Review Letters*, vol. 129, no. 12, pp. 123901, Sep. 2022. (**Editors' Suggestion**)

3. Z. Lan, **M. L. N. Chen**, F. Gao, S. Zhang, and W. E. I. Sha, "A brief review of topological photonics in one, two, and three dimensions," *Reviews in Physics*, vol. 9, pp. 100076, Aug. 2022.

4. Z. Zhang, Z. Lan, Y. Xie, **M. L. N. Chen**, W. E. I. Sha, and Y. Xu,, "Bound Topological Edge State in the Continuum for All-Dielectric Photonic Crystals," *Physical Review Applied*, vol. 16, no. 6, pp. 064036, Dec. 2021.

5. S. S. A. Yuan, J. Wu, **M. L. N. Chen**, Z. Lan, L. Zhang, S. Sun, Z. Huang, X. Chen, S. Zheng, L. J. Jiang, X. Zhang, and W. E. I. Sha, "Approaching the Fundamental Limit of Orbital-Angular-Momentum Multiplexing Through a Hologram Metasurface," *Physical Review Applied*, vol. 16, no. 6, pp. 064042, Dec. 2021.

6. **M. L. N. Chen**, L. J. Jiang, S. Zhang, R. Zhao, Z. Lan, and W. E. I. Sha, "Comparative study of Hermitian and non-Hermitian topological dielectric photonic crystals," *Physical Review A*, vol. 104, no. 3, pp. 033501, Sep. 2021.

7. Y. Zhang, **M. L. N. Chen**, and L. J. Jiang, "Extraction of the characteristics of vortex beams with a partial receiving aperture at arbitrary locations," *Journal of Optics*, vol. 23, no. 8, pp. 085601, July. 2021.

8. **M. L. N. Chen**, L. J. Jiang, Z. Lan, and W. E. I. Sha, "Coexistence of pseudospin- and valley-Hall-like edge states in a photonic crystal with C3v symmetry," *Physical Review Research*, vol. 2, no. 4, pp. 043148, Oct. 2020.

9. **M. L. N. Chen**, L. J. Jiang, Z. Lan, and W. E. I. Sha, "Local Orbital-Angular-Momentum Dependent Surface States with Topological Protection," *Optics Express*, vol. 29, no. 10, pp. 14428-14435, May. 2020.

10. R. Zhao, G. D. Xie, **M. L. N. Chen**, Z. Lan, Z. Huang, and W. E. I. Sha, "First-Principle Calculation of Chern Number in Gyrotropic Photonic Crystals," *Optics Express*, vol. 28, no. 4, pp. 4638-4649, Feb. 2020.

11. **M. L. N. Chen**, L. J. Jiang, Z. Lan, and W. E. I. Sha, "Pseudospin-Polarized Topological Line Defects in Dielectric Photonic Crystals," *IEEE Transactions on Antennas and Propagation*, vol. 68, no. 1, pp. 609-613, Jan. 2020.

12. Y. Zhang, **M. L. N. Chen**, and L. J. Jiang, "Analysis of Electromagnetic Vortex Beams Using Modified Dynamic Mode Decomposition in Spatial Angular Domain," *Optics Express*, vol. 27, no. 20, pp. 27702-27711, Sep. 2019.

13. **M. L. N. Chen**, L. J. Jiang, and W. E. I. Sha, "Quasi-Continuous Metasurfaces for Orbital Angular Momentum Generation," *IEEE Antennas and Wireless Propagation Letters*, vol. 18, no. 3, pp. 477-481, Mar. 2019.

14. **M. L. N. Chen**, L. J. Jiang, and W. E. I. Sha, "Generation of Orbital Angular Momentum by a Point Defect in Photonic Crystals," *Physical Review Applied*, vol. 10, no. 1, pp. 014034, Jul. 2018.

15. **M. L. N. Chen**, L. J. Jiang, and W. E. I. Sha, "Orbital Angular Momentum Generation and Detection by Geometric-Phase Based Metasurfaces," *Applied Sciences*, vol. 8, pp. 362, Mar. 2018. (**Featured Papers**)

16. **M. L. N. Chen**, L. J. Jiang, and W. E. I. Sha, "Detection of Orbital Angular Momentum with Metasurface at Microwave Band," *IEEE Antennas and Wireless Propagation Letters*, vol. 17, no. 1, pp. 110-113, Jan. 2018.

17. **M. L. N. Chen**, L. J. Jiang, and W. E. I. Sha, "Ultrathin Complementary Metasurface for Orbital Angular Momentum Generation at Microwave Frequencies," *IEEE Transactions on Antennas and Propagation*, vol. 65, no. 1, pp. 396-400, Jan. 2017. (**ESI Highly Cited Paper**)

18. **M. L. N. Chen**, L. J. Jiang, W. E. I. Sha, W. C. H. Choy, and T. Itoh, "Polarization Control by Using Anisotropic 3-D Chiral Structures," *IEEE Transactions on Antennas and Propagation*, vol. 64, no. 11, pp. 4687-4694, Nov. 2016.

19. **M. L. N. Chen**, L. J. Jiang, and W. E. I. Sha, "Artificial Perfect Electric Conductor-Perfect Magnetic Conductor Anisotropic Metasurface for Generating Orbital Angular Momentum of Microwave with Nearly Perfect Conversion Efficiency," *Journal of Applied Physics*, vol. 119, no. 6, pp. 064506, Feb. 2016.

Book Chapters

1. **M. L. N. Chen**, X. Y. Z. Xiong, W. E. I. Sha, and L. J. Jiang, "Orbital Angular Momentum Generation, Detection, and Angular Momentum Conservation with Second Harmonic Generation," *Electromagnetic Vortices: Wave Phenomena and Engineering Applications*, Chapter 8, pp. 245-267, Zhi Hao Jiang and Douglas H. Werner (Ed.), ISBN: 978111966294, Wiley, 2021.

2. X. Zhang, S. Zheng, W. E. I. Sha, L. J. Jiang, X. Xiong, Z. Zhu, Z. Wang, Y. Chen, J. Zheng, X. Wang, and **M. L. N. Chen**, "Orbital Angular Momentum Based Structured Radio Beams and its Applications," *Electromagnetic Vortices: Wave Phenomena and Engineering Applications*,

Chapter 9, pp. 271-293, Zhi Hao Jiang and Douglas H. Werner (Ed.), ISBN: 978111966294, Wiley, 2021.

3. **M. L. N. Chen**, L. Chen, X. Dang, M. Li, L. J. Jiang, and W. E. I. Sha, "Metamaterial or Metastructural Thin Films for EM Wave Control," *Inorganic and Organic Thin Films: Fundamentals, Fabrication and Applications*, Chapter 7, pp. 221-255, Yujun Song (Ed.), ISBN: 978-3-527-34497-0, Wiley, 2021.

Selected Conference Papers

1. **M. L. N. Chen**, L. J. Jiang, and W. E. I. Sha, "Tunable Topological Photonic Crystal Waveguides," *2021 International Applied Computational Electromagnetics Society Symposium in China (ACES-China 2021)*, Chengdu, China, July. 2021. (**Invited Talk**)

2. **M. L. N. Chen**, L. J. Jiang, and W. E. I. Sha, "Generation of Orbital Angular Momentum by Quasi-continuous Metasurfaces and Photonic Crystals: from High Purity to Easy Integration," *Cross Strait Quad-Regional Radio Science and Wireless Technology Conference*, Taiyuan, China, Jul. 2019. (**Invited Talk**)

3. **M. L. N. Chen** and L. J. Jiang, "Orbital Angular Momentum Generation Using Composite Quasi-Continuous Metasurfaces with a Perfect Efficiency," *Progress In Electromagnetics Research Symposium*, Toyama, Japan, Aug. 2018. (**Invited Talk, 3rd Place of Best Student Paper**)

4. **M. L. N. Chen**, L. J. Jiang, and W. E. I. Sha, "Orbital Angular Momentum Detection Using Geometric-phase Based Metasurfaces," *Progress In Electromagnetics Research Symposium*, Toyama, Japan, Aug. 2018. (**Invited Talk**)

5. **M. L. N. Chen**, L. J. Jiang, and W. E. I. Sha, "Novel Complementary Metasurfaces for the Orbital Angular Momentum Generation," *2017 International Applied Computational Electromagnetics Society (ACES) Symposium*, Firenze, Italy, Mar. 2017. (**3rd Place of Best Student Paper**)

6. **M. L. N. Chen**, L. J. Jiang, and W. E. I. Sha, "Orbital Angular Momentum Generation for Microwaves by Composite PEC-PMC Metasurfaces," *the 17th IEEE MACAU/HK AP/MTT Postgraduate Conference*, Macau, Sep. 2016. (**3rd Place of Best Student Paper in AP Session**)

7. **M. L. N. Chen**, L. J. Jiang, and W. E. I. Sha, "Orbital Angular Momentum Generation Using a Bi-Layered Complementary Metasurface with a High Conversion Efficiency," *Progress In Electromagnetics Research Symposium*, Shanghai, China, Aug. 2016. (**Invited Talk**)