

Jensen Li

EDUCATION AND TRAINING

University of Hong Kong	Electrical and electronic engineering	BSc	1998
Hong Kong University of Science and Technology	Physics	MPhil	2000
Hong Kong University of Science and Technology	Physics	PhD	2004
Imperial College London	Physics	Postdoc	2005-2007
University of California, Berkeley	Mechanical Engineering	Postdoc	2007-2009

PROFESSIONAL APPOINTMENTS

Postdoctoral fellow	University of California, Berkeley, USA	2007-2009
Assistant Professor	City University of Hong Kong, Hong Kong	2009-2013
Senior Lecturer, Reader	University of Birmingham	2013-2017
Associate Professor	HKUST	2017-2019
Professor	HKUST	2019-Present

HONORS AND AWARDS

Croucher Senior Research Fellowship 2022

Elected Member , Hong Kong Young Academy of Sciences (YASHK), 2022 - present

Global Research Outreach winner proposal in Material & Device, Samsung Advanced Institute of Technology, Korea, 2011

Croucher Foundation Postdoctoral Fellowship 2005 – 2007

Sir Edward Youde Memorial Fellowship, 1999

PUBLICATION PROFILE

111 Peer-review journal articles, 4 Book Chapters

Total citation number: 13911 h-index: 43 (Google Scholar, Jun 2022)

20 SELECTED PEER-REVIEWED PUBLICATIONS

1. Y. Liu, Z. Liang, J. Zhu, L. Xia, O. Mondain-Monval, T. Brunet, A. Alù, Jensen Li, "Willis metamaterial on a structured beam", *Phys. Rev. X* 9, 011040 (2019).
2. Y. Liu, Z. Liang, F. Liu, O. Diba, A. Lamb and Jensen Li, "Source illusion devices for flexural Lamb waves using elastic metasurfaces", *Phys. Rev. Lett.* 119, 034301 (2017).
3. S. Xiao, J. Wang, F. Liu, S. Zhang, X. Yin and Jensen Li, "Spin-dependent optics with metasurfaces", *Nanophotonics* 6, 215 (2017).
4. S. Xiao, F. Zhong, H. Liu, S. Zhu and Jensen Li, "Flexible coherent control of plasmonic spin Hall effect", *Nature Communications* 6, 8360 (2015).
5. F. Liu and Jensen Li, "Gauge field optics with anisotropic media", *Phys. Rev. Lett.* 114, 103902 (2015).
6. W. Gao, M. Lawrence, B. Yang, F. Liu, B. Beri, J. Li, and S. Zhang, "Topological photonic phase in chiral hyperbolic metamaterials", *Phys. Rev. Lett.* 114, 037402 (2015).
7. Y. Sun, W. Tan, H.-Q. Li, Jensen Li and H. Chen, "Experimental demonstration of a coherent perfect absorber with PT phase transition", *Phys. Rev. Lett.* 112, 143903 (2014).
8. P. Wei, C. Croenne, S. T. Chu and Jensen Li, "Symmetrical and anti-symmetrical coherent perfect absorption for acoustic waves", *Appl. Phys. Lett.* 104, 121902 (2014).
9. Y. D. Xu, C. D. Gu, B. Hou, Y. Lai, Jensen Li and H. Y. Chen, "Broadband asymmetric waveguiding of light without polarization limitations", *Nature Communications* 4, 2561 (2013).
10. L. L. Huang, X. Chen, H. Muhlenbernd, H. Zhang, S. Chen, B. Bai, Q. Tan, G. Jin, K.-W. Cheah, C.-W. Qiu, Jensen Li, T. Zentgraf, and S. Zhang, "Three-dimensional optical holography using a plasmonic metasurface", *Nature Communications*, 4, 2808 (2013).
11. G. Li, M. Kang, S. Chen, S. Zhang, E. Y.-B. Pun, K. W. Cheah, and Jensen Li, "Spin-enabled plasmonic metasurfaces for manipulating orbital angular momentum of light", *Nano Lett.* 13, 4148 (2013).
12. S. Zhang, F. Liu, T. Zentgraf and Jensen Li, "Interference-induced asymmetric transmission through a monolayer of anisotropic chiral metamaterials", *Phys. Rev. A* 88, 023823 (2013).
13. F. Liu, Z. Liang and Jensen Li, "Manipulating polarization and impedance signature: a reciprocal field transformation approach", *Phys. Rev. Lett.* 111, 033901 (2013).
14. X. Yin, T. Feng, S. Yip, Z. Liang, J. C. Ho, and Jensen Li, "Tailoring electromagnetically induced transparency for terahertz metamaterials: From diatomic to triatomic structural molecules", *Appl. Phys. Lett.* 103, 021115 (2013).
15. M. Kang, Fu. Liu and Jensen Li, "Effective spontaneous PT-symmetry breaking in hybridized metamaterials", *Phys. Rev. A* 87, 053824 (2013).
16. Z. Liang, T. Feng, S. Lok, F. Liu, K. B. Ng, C. H. Chan, J. Wang, S. Han, S. Lee, and Jensen Li, "Space-coiling metamaterials with double negativity and conical dispersion", *Sci. Rep.* 3, 1614 (2013).
17. M. Kang, T. Feng, H.-T. Wang and Jensen Li, "Wave front engineering from an array of thin aperture antennas", *Opt. Exp.* 20, 15882 (2012).
18. Z. Liang and Jensen Li, "Extreme Acoustic Metamaterial by Coiling Up Space", *Phys. Rev. Lett.* 108, 114301 (2012) (Editor's Suggestion).
19. C. T. Yip, H. Huang, L. Zhou, K. Xie, Y. Wang, T. Feng, Jensen Li and W. Y. Tam, "Direct and Seamless Coupling of TiO₂ Nanotube Photonic Crystal to Dye-Sensitized Solar Cell: A Single-Step Approach", *Adv. Mat.* 23, 5624 (2011).
20. T. Feng, Y. Zhou, D. Liu, and Jensen Li, "Controlling magnetic dipole transition with magnetic plasmonic structures", *Opt. Lett.* 36, 2369 (2011).

(<https://scholar.google.co.uk/citations?user=XRRcwYQAAAAJ&hl=en&oi=ao> for full publication list)

PATENTS

1. Planar band gap materials, United States Patent 6,727,863, issued on April 27, 2004
2. Coil-based artificial atom for metamaterials, metamaterial comprising the artificial atom, and device comprising the metamaterial, United States Patent 9,960,497, issued on May 1, 2018

RESEARCH SUPPORT (major grants)

- PI General Research Fund, Research Grants Council, Hong Kong Grant No. 16306521
" Low-light diffraction imaging with metasurfaces ", 2021-2024
- Co-PI Area of Excellence Scheme, Research Grants Council, Hong Kong Grant No. AoE/P-502/20
"Meta-optics,Meta-acoustics and Meta-devices", 2021-2019
- Co-PI Collaborative Research Fund, Research Grants Council, Hong Kong Grant No. C6012-20G
" Harnessing the "Fog"of Ambient RF Waves ", 2021-2024
- PI General Research Fund, Research Grants Council, Hong Kong Grant No. 16304020
"Coherent unitary transformation with metasurfaces", 2020-2023
- PI General Research Fund, Research Grants Council, Hong Kong Grant No. 16304520
"Non-Hermitian optical four-wave mixing", 2020-2023
- PI General Research Fund, Research Grants Council, Hong Kong Grant No. 16303019
"Towards time-varying acoustic metamaterials through programmable structural unit cells",
2020-2022
- PI Collaborative Research Fund, Research Grants Council, Hong Kong Grant No. C6013-18G
"Non-Hermitian Systems in Optics and Acoustics", 2019-2022
- Co-PI Research Impact Fund, Research Grants Council, Hong Kong Grant No. R6015-18
"Broadband absorbers for microwaves and ultra-low frequency mechanical waves", 2019-2024
- PI General Research Fund, Research Grants Council, Hong Kong Grant No. 16302218
"Willis media for bending waves and their applications on asymmetric propagation", 2018-2021
- PI Marie Curie Career Integration Grant, EU, Grant No. 630979 (NHermPhoton)
"Studying the physics of exceptional points using metamaterials", 2014-2018
- PI Samsung Advanced Institute of Technology Grant, Korea
"Acousto-optic effect with structured materials", 2013-2014
- PI Youth Scientist Fund of the National Natural Science Foundation of China, Grant No. 11104235
"Transformation optics with surface-wave structures and photonic crystals", 2012-2014
- PI German/Hong Kong Joint Research Scheme, Research Grants Council, Hong Kong, Grant. No.
G_HK008/11
"Mimicking anisotropic magnetic metamaterials with dielectric composites", 2012-2013

- PI 2011 Global Research Outreach Grant, Samsung Advanced Institute of Technology, Korea
"Broadband acoustic metamaterials for transformation acoustics", 2011-2013
- PI General Research Fund, Research Grants Council, Hong Kong Grant No. CityU102211
"Controlling radiative decay rates with magnetic metamaterials", 2011-2014 (transferred to S. T. Chu in relocating to Birmingham in 2013)
- Co-I General Research Fund, Research Grants Council, Hong Kong Grant No. CityU112611
"A Terahertz integrated circuit (TIC) platform", 2011-2014
- Co-I Collaborative Research Fund, Research Grants Council, Hong Kong Grant No. HKUST2/CRF/11G
"Controlling scattering and absorption cross sections using simple artificial structures", 2012-2015

HIGHLIGHTS

1. OSA Spotlight on Optics on article "Tailor-made unitary operations using dielectric metasurfaces": <https://www.osapublishing.org/spotlight/summary.cfm?id=447538>
2. "Virtualized metamaterials opens door for acoustics application and beyond", news outlet for Nature Commun. 11,251 (2020), picked up at PHYS.ORG: <https://phys.org/news/2020-03-virtualized-metamaterial-door-acoustics-application.html>
3. Tim Sandle, "3D printed wormhole for sound waves", Digital Journal (Dec 7, 2018), online at <http://www.digitaljournal.com/tech-and-science/science/3d-printed-wormhole-for-sound-waves/article/538535>
4. Interviewee for BBC radio 4 program series "The unseen – a history of the invisible": <http://www.bbc.co.uk/programmes/b07g27lp> (Episode 5, June 10, 2016)
5. R. Won, "Metasurface spin effect", Nature Photonics 7, 849 (2013)
6. F. Cheung, "Breaking the sound barrier", Nature China News, Apr 4, 2012, doi:10.1038/nchina.2012.28.
7. Chris Lee, "Turning down the volume: sound-cloaking acoustic metamaterials are on the way", ars technica, Apr 22, 2012
8. D. Monroe, "Scenic route for sound allows extra control", Physics Vol. 5, p. 33, Mar 2012.
9. P. Sheng, "Metamaterials: Acoustics lens to shout about", Nature Materials Vol. 8, p. 928, Oct 2009.
10. Jeremy Hsu, "First Acoustic Hyperlens Boosts Power of Ultrasound and Sonar", Popular Science, Oct 26, 2009, online at: <http://www.popsci.com/technology/article/2009-10/first-acoustic-hyperlens-boosts-power-ultrasound-and-sonar>.
11. Prachi Patel, "Acoustic Hyperlens Could Sharpen Ultrasound Imaging", IEEE Spectrum, Oct 2009, online at <http://spectrum.ieee.org/magazine/2009/October>.
12. Jeff Hecht, "Magic carpets hide objects in plain sight", New Scientist, Issue 2172, p. 20, June 13, 2009.
13. Victoria Gill, "Invisibility cloak edges closer", BBC news, Apr 30, 2009, online at: <http://news.bbc.co.uk/1/hi/sci/tech/8025886.stm>
14. Adrian Cho, "Invisibility Cloak for Almost-Visible Light", ScienceNOW Daily News Apr 30, 2009, online at: <http://news.sciencemag.org/sciencenow/2009/04/30-03.html>.
15. Richard Van Noorden, "Leap forward for invisibility cloaks", Nature News, Apr 30, 2009, doi:10.1038/news.2009.417.
16. "Berkeley Researchers Create an Invisibility Cloak", US News and World Report, May 5, 2009.
17. "Magic carpet", Nature Photonics, Vol. 3, p. 4, Jan 2009.

18. J. R. Minkel, "Shield of invisibility makes lumpy surface smooth", *Scientific American*, July 18, 2008, online at: <http://www.scientificamerican.com/article.cfm?id=shield-invisibility-makes-smooth>
19. Geoff Brumfiel, "How to weave an invisible rug", *Nature News*, July 2, 2008, doi:10.1038/news.2008.928.
20. Eric Bland, "Invisible carpet idea close to actual invisibility", *Discovery News*, July 17, 2008, online at: <http://dsc.discovery.com/news/2008/07/17/invisibility-carpet.html>

BOOK CHAPTERS

1. Fu Liu, Jensen Li, Jingjing Zhang and Yu Luo, "The carpet cloak", in *World Scientific Handbook of Metamaterials and Plasmonics Vol. 2*, World Scientific, Dec 2017.
2. Jensen Li, F. Liu, Z. Chang and G. Hu, "Quasiconformal transformation media and their electrostatic analogy", in *Transformation Wave Physics: Electromagnetics, Elastodynamics and Thermodynamics*, Pan Stanford Publishing, 2016
3. Jensen Li, K. H. Fung, Z. Y. Liu, P. Sheng and C. T. Chan, "Generalizing the Concept of Negative Medium to Acoustic Waves" in *Physics of Negative Refraction and Negative Index Materials: Optical and Electronic Aspects and Diversified Approaches*, Springer 2007
4. Jensen Li, Z. Liang, J. Zhu and X. Zhang, "Anisotropic Metamaterials for Transformation Acoustics and Imaging" in *Acoustic Metamaterials: Negative Refraction, Imaging, Lensing and Cloaking*, Springer 2013

PHD SUPERVISED

James Gear (2017), Fu Liu (2014), Tianhua Feng (2013)

PROFESSIONAL SERVICE

1. Technical Program Committee member, *Metamaterials* 2015, 2016, 2017, 2021
2. Technical Program Committee member, META'15, META'16, META'17, META'18
3. UK delegate of UK-Israel brokerage event for Nanophotonics (Feb 29-Mar 3, 2016, organized by UK embassy)
4. Associate Editor, *Optics Express*
5. Editorial Board Member, *Scientific Reports* (2016-2020)
6. Associate Editor, *EPJ Applied Metamaterials*
7. Associate Editor, *New Journal of Physics* (2018-2020)