Mr. Hu Hao | Curriculum Vitae

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Profile

Dr. Hao Hu's research focuses on the mechanisms and applications of artificially structured materials. His work advances theoretical frameworks in free-electron radiation, metamaterials and photonic crystals, two-dimensional materials, time-varying media, quantum surface plasmons, and topological physics, while developing novel photonic devices such as on-chip light sources and next-generation miniaturized high-energy particle detectors. He has also pioneered new research directions including topological diffusion and spatiotemporal topology.

He has published 59 SCI-indexed papers with more than 1,100 citations. As first, co-first, or corresponding author, he has authored 29 papers in leading journals including *eLight, Advanced Materials, Nature Communications, Physical Review X, Advanced Science, Laser & Photonics Reviews, Photonics Research, ACS Photonics, and Nanophotonics*. His research has been highlighted by Light: Science & Applications and widely reported by international science media including Phys.org and EurekAlert!

Education

- Nanyang Technological University (Singapore), Ph.D. in Engineering, 2016.07-2020.06
- Zhejiang University (China), Bachelor degree in Engineering, 2012.09-2016.06

Professional Experience

- Deputy director, Technology Institute of Microwave Photonics (China), 20225.04-present
- Full professor, Nanjing University of Aeronautics and Astronautics (China), 2023.04-present
- Research fellow, Nanyang Technological University (Singapore), 2020.07-2023.03

Awards and Recognitions

- Jiangsu Province Innovation and Entrepreneurship Team, 2026
- Young Talent Program of the National Major Talent Project (Class A), 2023
- Distinguished Professor of Jiangsu Province, 2023
- Nanjing Funding Scheme to Outstanding Scientific and Technological Programs by Chinese Students Abroad, 2023
- Chinese government award for outstanding self-financed students abroad, 2020
- Gold Student Paper Award by IEEE IPS (Singapore), 2020
- Best Student Paper Award 1st Prize in PIERS (Xiamen), 2019
- President of Optical Society of America (OSA), Chapter of Nanyang Technological University, 2018-2020
- Vice President of Optical Society of America (OSA), Chapter of Nanyang Technological University, 2017-2018
- Vice President of IEEE Photonics Society Singapore Chapter, 2018-2019

Courses

- Principle and Application of Sensor, undergraduate elective course, 2025- present
- Modern Semiconductor Photonics and Electronics, graduate elective course, 2025-present
- Semiconductor Photonics and Electronics, undergraduate elective course, 2024-2025
- Computer Aided Design for Electromagnetic Simulation and Microwave Circuit, undergraduate elective course, 2025-present

Supervision (3 PhD students, 4 master students, 1 undergraduate exchange student)

1. Mehdi Mokeddem, undergraduate exchange (IPSA, France), 2026-present
2. Shanqi Yang, PhD, 2025-present
3. Jinying Xie, master, 2025-present
4. Zhixiong Xie, PhD, 2024-present

5. Youxiu Yu, PhD, 2024-present
6. Yiru Du, master, 2024-present
7. Jieran Chen, master, 2024-present
8. Xinran Chen, master, 2024-present

Editorial Activities

- Youth Editorial Board Member, PhotoniX Synergy,2025-present

Conference Co-Chair and Co-Organizer

1. Session organizer for conference session "Nonlinear, topological metamaterials and beyond, " 2026 Photonics and Electromagnetics Research Symposium (PIERS Suzhou, 2026)
2. Session organizer for conference session "Plasmonics and metamaterials," 2026 International Conference on Information Optics and Photonics (CIOP Nanjing, 2026)
3. Session organizer for conference session "Nonlinear and spatiotemporal metamaterials/metasurfaces," 2024 IEEE MTT-S International Microwave Workshop Series on Advanced Materials and Processes for RF and THz Applications (IMWS-AMP Nanjing, 2024)
4. Session organizer for conference session "Integrated metasurfaces/metamaterials on photonic platform," 2024 International Conference on Metamaterials, Photonic Crystals and Plasmonics (META Toyama, 2024)
5. Session organizer for conference session "Artificial EM materials," 2024 IEEE International Conference on Computational Electromagnetics (ICCEM Nanjing, 2024)
6. Organizing committee member (Registration Chair & Conference Treasurer) for 2024 IEEE International Conference on Computational Electromagnetics (ICCEM Nanjing, 2024)
7. Session organizer for conference session "Time-modulating metamaterials and time-varying systems," 2024 Photonics and Electromagnetics Research Symposium (PIERS Chengdu, 2024)
8. Session organizer for conference session "Integrated electrically-driven nano-photonic devices," 2023 Photonics and Electromagnetics Research Symposium (PIERS Prague, 2023)

Publications

- 59 refereed journal articles
- Total citations (Google Scholar): 1188
- The h-index (Google Scholar):19

†co-first author, *corresponding author

2026

[59] Junkai Jiang†, **Hao Hu**†,*, Yang Long, Liangliang Liu, Songyan Hou, Dongjue Liu*, and Zhuo Li*, "Broadband temporal localization and delocalized temporal edge states in time photonic crystal," *Physical Review A* (2026).

[58] Hongliang Li, Chenxi Wang, Yan Cai, Tianxiang Zhao, Song Gao, Wenjing Yue, Junge Liang, Xiaofeng Gu, **Hao Hu**, Yu Luo, Xuechao Yu*, and Fei Ding*, "Meta-device-enabled photonic chip integration from the perspective of methods, applications, and fabrications: a review," *Advanced Photonics* (2026).

[57] Haotian Wu†, Linyang Zou†, **Hao Hu**, Qianru Yang, Yueqian Zhang, Tie Jun Cui*, Guangwei Hu*, and Yu Luo*, "Electromagnetic wave trapping at the discretized interluminal interface," *Laser & Photonics Reviews* **20**(4), e00975 (2026).

[56] Song Zhu†, Xuan Mao†, Congliao Yan†, Fakun Wang, Zhen Xu, **Hao Hu**, Xiaodong Xu, Yuqiang Fang, Fangyuan Sun, Ruihuan Duan, Yao Wu, Yuhui Yang, Chongwu Wang, Zhen Qiao, Wenduo Chen, Sha Wang, Houkun Liang, Fuqiang Huang, Zheng Liu, Yu Luo*, and Qi Jie Wang*, "Broadband and efficient multiphoton nonlinear frequency upconversion with NbOI2 crystals from the mid-infrared to the ultraviolet regimes," *Nature Communications* (2026).

[55] Yaoran Zhang, Yuxiang Cao, **Hao Hu**, Liangliang Liu, Yu Luo, and Zhuo Li*, "Reconfigurable exceptional points for enhanced sensitivity in a high-Q toroidal spoof localized surface plasmonic resonator" *Optics Letters* **51**(3), 784-787 (2026).

[54] Haonan Hou, Jiarui Wang, Yuhao Liao, Longji Duan, **Hao Hu**, and Jiang Xiong*, "Experimental realization of a full-band wave antireflection based on temporal taper metamaterials," *Communication Physics* **9**, 64 (2026).

2025

[53] Zhixiong Xie, Xiao Lin, Song Zhu, Chunyu Huang, Yu Luo*, and **Hao Hu***, "Transverse-electric Cherenkov radiation for TeV-scale particle detection," *Advanced Science* **13**(1), e13589 (2025).

[52] Yukun Yang†, **Hao Hu**†,*, Liangliang Liu†, Yihao Yang, Youxiu Yu, Yang Long, Xuezhi Zheng, Yu Luo*, Zhuo Li*, and Francisco José García Vidal, "Topologically protected edge states in time photonic crystals with chiral symmetry," *ACS Photonics* **12**(5), 2389-2396 (2025).

[51] Youxiu Yu, Dongliang Gao*, Yukun Yang, Liangliang Liu, Zhuo Li, Qianru Yang, Haotian Wu, Linyang Zou, Xiao Lin, Jiang Xiong, Songyan Hou, Lei Gao*, and **Hao Hu***, "Generalized coherent wave control at dynamic

interfaces," *Laser & Photonics Reviews* **19**(4), 2400399 (2025).
[50] **Hao Hu***, Xiao Lin, Guangwei Hu, Francisco J. Garcia-Vidal, and Yu Luo*, "Enhanced Cherenkov radiation in twisted hyperbolic Van der Waals crystals," InfoScience **2**(1), e12424(2025).
[49] Dongjue Liu, Zeng Yang, Zhiyong Huang, Xinyi He, Songyan Hou, Biao Wang, Liangliang Liu, Song Zhu, Yi Liao*, and **Hao Hu***, "Topological edge states induced by strained graphene," *Journal of Physics D: Applied Physics* **58**(44), 445303 (2025).
[48] Jindi Huang, Haobin Hu, Hongyi Li, Wenchang Zhu, Fuheng Wang, **Hao Hu***, Zhuo Li *, and Liangliang Liu*, "Electrically tunable spoof plasmonic metamaterial for independent control of electric and magnetic resonances," *Journal of Physics D: Applied Physics* **58**(38), 358108(2025).
[47] Hongyi Li*, Haobin Hu, Zixiang Zhou, Jindi Huang, Fubeng Wang, **Hao Hu***, Zhuo Li*, and Liangliang Liu*, "Highly compact and robust filters enabled by effective localized surface plasmonic resonance," *Journal of Physics D: Applied Physics* **58**(18), 185106 (2025).
[46] Siming Li†, Haotian Wu†, Jingjing Zhang, Rimi Banerjee, Linyang Zou, Yueqian Zhang, **Hao Hu**, Yidong Chong*, Qi Jie Wang*, and Yu Luo*, "Topological thermal crystalline insulators," *Applied Physics Reviews* **12**(4), 041401(2025).
[45] Yaoran Zhang, Jian Ling, Yuying Jiang, Zhepeng Fu, **Hao Hu**, Liangliang Liu*, Yu Luo*, and Zhuo Li*, "A compact reconfigurable orbital angular momentum antenna based on a single spoof localized surface plasmonic resonator," *IEEE Transactions on Antennas and Propagation* **73**(8), 5132-5141 (2025).
[44] Qianru Yang, Haotian Wu, **Hao Hu**, Linyang Zou, F. J. García-Vidal, Guangwei Hu*, and Yu Luo*, "Spatiotemporal superfocusing," *Laser & Photonics Reviews* **19**(17), 2500126 (2025).
[43] Hongyi Li, Lingyun Niu, Liangliang Liu*, Lepeng Zhang, **Hao Hu**, Haochi Zhang, Yu Luo, and Zhuo Li*, "Miniaturized diplexer with high selectivity based on transition-free effective surface plasmon polaritons," *IEEE Microwave and Wireless Technology Letters* **35**(10), 1518-1521 (2025).
[42] Songyan Hou, **Hao Hu**, Mengfang Xu, Jiajun Zhang, Haoxuan Xiao, Zhihong Liu, Weichuan Xing, Xianhe Liu, Shuzhen You*, Baiquan Liu*, Yiping Zhang, Junhong Yu*, Zhenwei Xie, Xiaoning He, Jincheng Zhang*, and Yue Hao, "Engineering quantum emitters in 2D materials," *Advanced Optical Materials* **13**(24), 2500693 (2025).
[41] Hongyi Li, Ling Jian, Liangliang Liu*, Lingyun Niu, Lepeng Zhang, Jindi Huang, Haochi Zhang, Dongjue Liu, **Hao Hu**, Yu Luo*, and Zhuo Li*, "Transition-free ultrawideband waveguide filter based on effective surface plasmon polaritons," *Physical Review Applied* **23**, 034061 (2025).
[40] Songyan Hou*, Zhenwei Xie, Chengyi Zhu, Haoxuan Xiao, Jiajun Zhang, Mengfang Xu, Xianhe Liu, Xiaoning He, **Hao Hu**, Zhihong Liu, Weichuan Xing, Jincheng Zhang*, Shuzhen You*, and Yue Hao, "Improved selectivity in dry etching of lithium niobate with thermal annealed hydrogen silsesquioxane mask," *Nanotechnology* **36**(48), 485201 (2025).

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[39] Songyan Hou*, **Hao Hu***, Zhihong Liu, Weichuan Xing, and Jincheng Zhang*, "Broadband transmissive polarization rotator by gradiently-twisted α-MoO3," *Applied Physics Letters* **124**(11), 111107 (2024).
[38] Xinhua Li, Liangliang Liu*, Yaoran Zhang, Yue Feng, Guodong Han, Helin Yang, **Hao Hu***, Yu Luo, and Zhuo Li*, "Hybridization of localized spoof plasmonic skyrmions and its application in micro-displacement sensing," *Advanced Optical Materials* **12**(13), 2302744 (2024).
[37] Yaoran Zhang†, **Hao Hu**†, Francisco José García Vidal, Jingjing Zhang, Liangliang Liu*, Yu Luo*, and Zhuo Li*, "Reconfigurable exceptional point-based sensing with 0.001-lambda sensitivity using spoof localized surface plasmons," *Advanced Photonics Nexus* **3**(5), 056004 (2024).
[36] Songyan Hou†,*, **Hao Hu**†, Zhihong Liu, Weichuan Xing, Jincheng Zhang*, and Yue Hao, "Tunable double notch filter on thin-film lithium niobate platform," *Optics Letters* **61**(6), 1022-1024 (2024).
[35] Songyan Hou*, **Hao Hu**, Zhihong Liu, Weichuan Xing, Jincheng Zhang*, and Yue Hao, "High-speed electro-optic modulators based on thin-film lithium niobate," *Nanomaterials* **14**(10), 867 (2024).
[34] Yang Long*, Linyang Zou, Letian Yu, **Hao Hu**, Jiang Xiong, and Baile Zhang*, "Inverse design of photonic topological time crystal via deep learning," *Optical Materials Express* **14**(8), 2032-2039 (2024).
[33] Haotian Wu, Qianru Yang, **Hao Hu**, Linyang Zou, Xixi Wang, Jijun He, Shilong Pan, Yuanjin Zheng*, Tie Jun Cui*, and Yu Luo*, "Conformal spatiotemporal modulation enabled geometric frequency combs," *ACS Photonics* **11**(8), 2992–3002 (2024).
[32] Chan Wang, Xuhuinan Chen, Zheng Gong, Ruoxi Chen, **Hao Hu**, Huaping Wang*, Yi Yang, Low Tony, Baile Zhang, Hongsheng Chen, and Xiao Lin*, "Superscattering of light: fundamentals and applications," *Reports on Progress in Physics* **87**, 126401 (2024).
[31] Yuhan Zhong, Chan Wang, Chenxu Bian, Xuhuinan Chen, Jialin Chen, Xingjian Zhu, **Hao Hu**, Tony Low, Siyuan Dai, Hongsheng Chen*, Baile Zhang, and Xiao Lin*, "Near-field directionality governed by asymmetric dipole–matter interactions," *Optics Letters* **49**(4), 826-829 (2024).

2023

[30] Youxiu Yu, **Hao Hu***, Linyang Zou, Qianru Yang, Xiao Lin, Zhuo Li, Gao Lei*, and Dongliang Gao*,"Antireflection spatiotemporal metamaterials," *Laser & Photonics Reviews* **17**(9), 2300130 (2023).
[29] Haotian Wu†, **Hao Hu**†, Xixi Wang, Zhixia Xu, Baile Zhang*, Qi Jie Wang*, Yuanjin Zheng, Jingjing Zhang,

Tie Jun Cui*, and Yu Luo*, "Higher-order Topological States in Thermal Diffusion," *Advanced Materials* **35**(14), 2210825 (2023).

[28] Yuval Adiv†, **Hao Hu**†, Shai Tsesses†, Raphael Dahan, Kangpeng Wang, Yaniv Kurman, Alexey Gorlach, Hongsheng Chen, Xiao Lin, Guy Bartal, and Ido Kaminer*, "Observation of 2D Cherenkov radiation," *Physical Review X* **13**, 011002 (2023).

[27] Dongjue Liu, **Hao Hu***, and Jingjing Zhang*, "Edge states in coupled non-Hermitian resonators," *Optics Letters* **127**(11), 043904(2023).

[26] Songyan Hou*, **Hao Hu**†, Weichuan Xing, Zhihong Liu, Jincheng Zhang*, and Yue Hao, "Improving linewidth and extinction ratio performances of lithium niobate ring modulator using ring-pair structure," *Advanced Photonics Research* **4**(8), 2300169 (2023).

[25] Dongjue Liu†, Zihao Wang†, Zheyu Cheng, **Hao Hu**, Qijie Wang, Haoran Xue*, Baile Zhang*, and Yu Luo*, "Simultaneous manipulation of line-gap and point-gap topologies in non-hermitian lattices," *Laser & Photonics Reviews* **17**(8), 2200371 (2023).

[24] Zheng Gong, JIalin Chen, Ruoxi Chen, Xingjian Zhu, Chan Wang, Xinyan Zhang, **Hao Hu**, Yi Yang, Baile Zhang*, Hongsheng Chen*, Ido Kaminer, and Xiao Lin*, "Interfacial Cherenkov radiation with ultralow-energy electrons," *Proceedings of the National Academy of Science* **120**(38), e2306601120 (2023).

[23] Shuaijie Yuan, Xinxing Zhou*, Yu Chen, Yuhan Zhong, Lijuan Sheng, **Hao Hu**, Hongsheng Chen*, Ido Kaminer, and Xiao Lin*, "Breakdown of effective-medium theory by a photonic spin Hall effect," *Science China Physics, Mechanics & Astronomy* **66**, 114212 (2023).

[22] Jialin Chen, Ruoxi Chen, Zheng Gong, **Hao Hu**, Yi Yang, Xinyan Zhang, Chan Wang, Ido Kaminer, Hongsheng Chen*, Baile Zhang*, and Xiao Lin*, "Low-velocity-favored transition radiation," *Physical Review Letters* **131**, 113002 (2023).

2022

[21] **Hao Hu**†, Song Han†, Yang Hang†,*, Dongjue Liu, Haoran Xue, Guigeng Liu, Zheyu Cheng, Qi Jie Wang, Shuang Zhang, Baile Zhang*, and Yu Luo*, "Observation of topological edge states in thermal diffusion," *Advanced Materials* **34**(31), 2202257 (2022).

[20] **Hao Hu**†, Xiao Lin†,*, Dongjue Liu, Hongsheng Chen, Baile Zhang*, and Yu Luo*, "Broadband enhancement of Cherenkov radiation using dispersionless plasmons," *Advanced Science* **9**(26), 2200538 (2022).

[19] **Hao Hu**†, Xiao Lin†, Liang Jie Wong, Qianru Yang, Dongjue Liu, Baile Zhang*, and Yu Luo*, "Surface Dyakonov-Cherenkov radiation," *eLight* **2**, 2 (2022).

[18] Helin Yang, Kwok-Yan Lam*, Liang Xiao, Zehui Xiong, **Hao Hu**, Dusit Niyato, and H Vincent Poor,"Lead federated neuromorphic learning for wireless edge artificial intelligence," *Nature Communications* **13**, 4269 (2022).

[17] Qianru Yang, **Hao Hu**, Xiaofeng Li, and Yu Luo*,"Cascaded parametric amplification based on spatiotemporal modulations," *Photonics Research* **11**(5), B125-B135 (2022).

[16] Fei Yan, Qi Li, **Hao Hu**, Ze Wen Wang, Hao Tian, Li Li*, Yu Luo*, Qi Jie Wang*, "Terahertz high-Q magnetic dipole resonance induced by coherent Fano interactions," *Applied Physics Letters* **121**(20), 201704 (2022).

2021

[15] Xiao Lin†, **Hao Hu**†, Sajan Easo, Yi Yang, Yichen Shen, Kezhen Yin, Michele Piero Blago, Ido Kaminer*, Baile Zhang*, Hongsheng Chen, John Joannopoulos, Marin Soljacic, and Yu Luo*, "A Brewster route to Cherenkov detectors," *Nature Communications* **12**, 5554 (2021).

[14] **Hao Hu**, Xiao Lin, and Yu Luo*. "Free-electron radiation engineering via structured environment," *Progress in Electromagnetics Research* **171**, 75-88 (2021).

[13] Liqiao Jing, Xiao Lin, Zuojia Wang*, Ido Kaminer*, **Hao Hu**, Erping Li, Yongmin Liu, Min Chen, Baile Zhang, Hongsheng Chen*, "Polarization shaping of free-electron radiation by gradient bianisotropic metasurfaces," *Laser & Photonics Reviews* **15**(4), 2000426 (2021).

2020

[12] **Hao Hu**, Xiao Lin*, Jingjing Zhang, Dongjue Liu, Patrice Genevet, Baile Zhang* and Yu Luo*," Nonlocality induced Cherenkov threshold," *Laser & Photonics Reviews* **14**(10),2000149 (2020).

[11] **Hao Hu**, Dongliang Gao, Xiao Lin, Songyan Hou, Baile Zhang, Qi Jie Wang* and Yuo Luo*, "Directing Cherenkov photons with spatial nonlocality," *Nanophotonics* **9**(10), 3435-3443 (2020).

[10] Xinyan Zhang, **Hao Hu**, Xiao Lin*, Lian Shen, Baile Zhang, Hongsheng Chen*, "Confined transverse-electric graphene plasmons in negative refractive-index systems, " *npj 2D Materials and Applications* **4**, 25 (2020).

[9] Yanqiu Wang, **Hao Hu**, Qin Zhang, Dong Liang Gao*, and Lei Gao*, "Topologically-tuned spin Hall shift around Fano resonance," *Optics Express* 28(15), 21641-21649 (2020).

[8] Chan Wang, Chao Qian, **Hao Hu**, Lian Shen, Zuo Jia Wang, Huaping Wang, Zhiwei Xu, Baile Zhang, Hongsheng Chen, Xiao Lin*, "Superscattering of light in refractive-index near-zero environments," *Progress in Electromagnetics Research* **168**, 15-23 (2020).

2019

[7] **Hao Hu**, Liangliang Liu*, Xiao Hu, Dongjue Liu, and Dongliang Gao*, "Routing emission with a multi-channel nonreciprocal waveguide," *Photonics Research* **7**(6), 642-646 (2019).

[6] **Hao Hu**, Xiao Lin, Dongjue Liu, Patrice Genevet, Baile Zhang, Yu Luo*, "Revisit Cherenkov Radiation in the Hyperbolic Metamaterials," P*hotonics & Electromagnetics Research Symposium-Fall (PIERS-Fall)* 318-324 (2019).

[5] Wangcheng Lin, Yanqiu Wang, **Hao Hu**, Dongjue Liu, Dongliang Gao*, and Lei Gao*, "Reconfigurable sensor and nanoantenna by graphene-tuned Fano resonance," *Optics Express* **27**(24), 35925-35934 (2019).

[4] Dongjue Liu, Yao Huang, **Hao Hu**, Liangliang Liu, Dongliang Gao, Lixin Ran, Dexin Ye*, and Yu Luo*, "Designing spatial Kramers–Kronig media using transformation optics," *IEEE Transactions on Antennas and Propagation* **68**(4), 2945-2949 (2019).

[3] Ran Shi, Dong Liang Gao*, **Hao Hu**, Yanqiu Wang, Lei Gao*, "Enhanced broadband spin Hall effects by core-shell nanoparticles," *Optics Express* **27**(4), 4808-4817 (2019).

2016-2018

[2] **Hao Hu**, Jingjing Zhang, Stefan A Maier, and Yu Luo*, "Enhancing third-harmonic generation with spatial nonlocality," *ACS Photonics* **5**(2), 592-598 (2018).

[1] Jinxi Huang†, **Hao Hu**†, Zhewei Wang, Wenyuan Li, Ji Cang, Jianqi Shen, Hui Ye*, "Analysis of light-emission enhancement of low-efficiency quantum dots by plasmonic nano-particle," *Optics Express* **24**(8), 8555-8573 (2016).

Conferences (5 invited talks)

[16] **Hao Hu**, "Wave dynamics at spacetime interface," Progress in Electromagnetics Research Symposium, Suzhou, China, 27-31 July 2026 (Invited Talk).

[15] **Hao Hu**, "Controlling THz Cherenkov radiation with low-dimensional materials," International Conference on Ultrafast Science and Quantum Sensing, Hainan, China, 26-30 January 2026 (Invited Talk).

[14] **Hao Hu**, "Topological time photonic crystals," International Applied Computational Electromagnetics Society Symposium, Huangshan, China, 8-11 August 2025 (Invited Talk).

[13] **Hao Hu**, "Topological time-varying photonic crystals," China Metamaterials Conference, Shenzhen, China, 15-18 May 2025 (Invited Talk).

[12] **Hao Hu**, "Engineering free-electron radiation with artificial structured materials," Annual Conference on Communications for Postgraduates in Nanjing, Nanjing, China, 24 December 2024 (Invited Talk).

[11] **Hao Hu**, "Time edge states protected by chiral symmetry," International Conference on Metamaterials, Photonic Crystals and Plasmonics, Toyama, Japan, 16-19 July 2024.

[10] **Hao Hu**, "Cherenkov radiation in twisted α-MoO3 Slab," Progress in Electromagnetics Research Symposium, Chengdu, China, 21-25 April 2024.

[9] **Hao Hu**, "Free-electron light source based on twisted α-MoO3 slab," IEEE International Conference on Computational Electromagnetics, Nanjing, China, 15-17 April 2024.

[8] **Hao Hu**, "Experimental realization of topological edge states in pure diffusion systems," Progress in Electromagnetics Research Symposium, Prague, Czech Republic, 3-6 July 2023.

[7] **Hao Hu**, "Experimental realization of thermal topological edge states," International Conference on Thermodynamics and Thermal Metamaterials, Shanghai, China. 17-19 August 2022.

[6] **Hao Hu**, "Revisit Cherenkov radiation in the hyperbolic metamaterials," Progress in Electromagnetics Research Symposium, Xiamen, China, 17-20 December 2019.

[5] **Hao Hu**, Xiao Lin, Dongjue Liu, Patrice Genevet, Baile Zhang, and Yu Luo, "Probe the ultimate nonlocal limit of 'threshold-free' Cherenkov radiation," Conference on Lasers and Electro-Optics, San Jose, USA, 5-10 May 2019.

[4] **Hao Hu**, "Nonlocal limit of Cherenkov radiation in hyperbolic metamaterials," Global Congress and Expo on advancements of Laser optics and photonics, Valencia, Spain, 25-27 March 2019.

[3] **Hao Hu**, "Enhancing optical nonlinearity using quantum nonlocal effect," Progress in Electromagnetics Research Symposium, Tokyo, Japan, 1-4 August 2018.

[2] **Hao Hu**, "Enhancing optical nonlinearity using special nonlocality," Advances in Quantum Enginnering International Meeting, Singapore, 25-27 June 2018.

[1] **Hao Hu**, and Yu Luo, "Third harmonic generation enhanced by nonlocal effect," Conference on Lasers and Electro-Optics (Pacific Rim), Singapore, 31 July - 4 August 2017.

Doctoral dissertation

[1] **Hao Hu**, "Manipulating Cherenkov radiation by artificial structures" [Doctoral dissertation, Nanyang Technological University], Digital Repository of Nanyang Technological University, 2020.