

Publications

Graduate

- 1 **J. Cao** and A. Kavokin, "Stabilization of ring polariton condensates by LHY correction to GP equation", in preparation.
- 2 Z. Jiang, **J. Cao**, A. Ren, H. Liu, X. Dong, P. Li, Z. Zhou, Y. Yan, H. Dong, J. Yao, A. Kavokin, and Y. Zhao, "Room-temperature spin-hall flow of superfluid organic exciton-polariton condensates", *Nature Nanotechnology*, submitted.
- 3 **J. Cao** and A. Kavokin, "Optical properties of magnetic monopole excitons", *Condensed Matter* **8**, 43 (2023).
- 4 **J. Cao** and A. Kavokin, "The interplay between exciton- and phonon-induced superconductivity might explain the phenomena observed in 1k-99", *Materials Today Communications* **37**, 107293 (2023).
- 5 K. Wang, **J. Cao**, X. Yang, X. Sang, S. Yao, R. Xiang, B. Yang, Z. Li, T. O'Carroll, Q. Zhang, L. Lei, G. Wu, and Y. Hou, "Kinetically accelerating elementary steps via bridged ru-h state for the hydrogen-evolution in anion-exchange membrane electrolyzer", *Advanced Functional Materials* **33**, 2212321 (2023).
- 6 Y. Zhou, H. Wang, S. Luo, H. Zhou, **J. Cao**, T. S. Zeng, Y. Li, A. Kavokin, L. Zhang, and Z. Chen, "Analogue of charge conjugation in the optical spin hall effect", *Phys. Rev. Applied* **20**, 024028 (2023).
- 7 **J. Cao**, A. Kavokin V, and A. Nalitov V, "Tamm states and gap topological numbers in photonic crystals", *Progress in Electromagnetics Research* **173**, 141–149 (2022).
- 8 F. Chen, H. Zhou, H. Li, **J. Cao**, S. Luo, Z. Sun, Z. Zhang, Z. Shao, F. Sun, B. Zhou, H. Dong, H. Xu, H. Xu, A. Kavokin, Z. Chen, and J. Wu, "Femtosecond dynamics of a polariton bosonic cascade at room temperature", *Nano Letters* **22**, 2023–2029 (2022).
- 9 **J. Cao**, S. De Liberato, and A. Kavokin V, "Strong light-matter coupling in microcavities characterised by rabi-splittings comparable to the bragg stop-band widths", *New Journal of Physics* **23**, 113015 (2021).
- 10 X. Cheng, J. Yuan, **J. Cao**, C. Lei, B. Yang, Z. Li, X. Zhang, C. Yuan, L. Lei, and Y. Hou, "Strongly coupling of amorphous/crystalline reduced FeOOH/alpha-Ni(OH)(2) heterostructure for extremely efficient water oxidation at ultra-high current density", *Journal of Colloid and Interface Science* **579**, 340–346 (2020).
- 11 **J. Cao**, K. Wang, J. Chen, C. Lei, B. Yang, Z. Li, L. Lei, Y. Hou, and K. Ostrikov, "Nitrogen-doped carbon-encased bimetallic selenide for high-performance water electrolysis", *Nano-Micro Letters* **11**, 67 (2019).

Undergraduate

- 1 **J. Cao**, C. Lei, B. Yang, Z. Li, L. Lei, Y. Hou, and X. Feng, "Zeolitic imidazolate framework derived core-shell-structured CoS₂/CoS₂-NC supported on electrochemically exfoliated graphene foil for efficient oxygen evolution", *Batteries & Supercaps* **2**, 348–354 (2019).
- 2 L. Wang, **J. Cao**, X. Cheng, C. Lei, Q. Dai, B. Yang, Z. Li, M. A. Younis, L. Lei, Y. Hou, and K. Ostrikov, "ZIF-derived carbon nanoarchitecture as a bifunctional ph-universal electrocatalyst for energy-efficient hydrogen evolution", *ACS Sustainable Chemistry & Engineering* **7**, 10044–10051 (2019).
- 3 L. Wang, **J. Cao**, C. Lei, Q. Dai, B. Yang, Z. Li, X. Zhang, C. Yuan, L. Lei, and Y. Hou, "Strongly coupled 3D N-doped MoO₂/Ni₃S₂ hybrid for high current density hydrogen evolution electrocatalysis and biomass upgrading", *ACS Applied Materials & Interfaces* **11**, 27743–27750 (2019).

- 4 J. Cao, C. Lei, J. Yang, X. Cheng, Z. Li, B. Yang, X. Zhang, L. Lei, Y. Hou, and K. Ostrikov, "An ultrathin cobalt-based zeolitic imidazolate framework nanosheet array with a strong synergistic effect towards the efficient oxygen evolution reaction", *Journal of Materials Chemistry A* **6**, 18877–18883 (2018).
- 5 C. Lei, H. Chen, J. Cao, J. Yang, M. Qiu, Y. Xia, C. Yuan, B. Yang, Z. Li, X. Zhang, L. Lei, J. Abbott, Y. Zhong, X. Xia, G. Wu, Q. He, and Y. Hou, "FeN₄ sites embedded into carbon nanofiber integrated with electrochemically exfoliated graphene for oxygen evolution in acidic medium", *Advanced Energy Materials* **8**, 1801912 (2018).