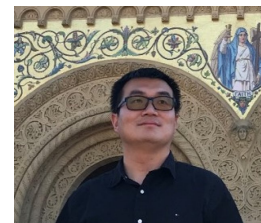


Zhedong ZHANG
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Employment

Department of Physics

City University of Hong Kong
29 Sep 2020 → present

Biography

Dr. Zhedong Zhang received his B.S. from Shenzhen University in 2009 and Ph.D. degree in physics from the State University of New York at Stony Brook in 2016. During 2016-2017, he worked as postdoctoral researcher in the Department of Chemistry at University of California Irvine. Since 2017, he has been working as the Robert A. Welch postdoctoral fellow in the Institute for Quantum Science and Engineering at Texas A&M University. He joined the Department of Physics at City University of Hong Kong in 2020 as an Assistant Professor.

Dr. Zhang's research interest mainly focuses on two fields: (1) nonlinear optical spectroscopy and (2) quantum thermodynamics for nanomaterials. The first one is to develop the time- and spatial-resolved nonlinear spectroscopies (e.g., using X-ray and quantum properties of light) to study the molecular relaxation and radiative processes. The second one aims at the nonequilibrium thermodynamics of mesoscopic systems, transiting from the microscopic to larger scales. He has about 25 professional publications on high-profile journals, e.g., Phys. Rev. Lett., Optica, J. Phys. Chem. Lett., Phys. Rev. A and Phys. Rev. B.

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Research outputs

Quantum statistical theory for an exciton-polariton condensate: Fluctuations and coherence

Zhang, Z., Zhao, S. & Lei, D., Dec 2022, In: Physical Review B: covering condensed matter and materials physics. 106, 22, L220306.Scopus citations: 1

Plasmonic Nanocavity Induced Coupling and Boost of Dark Excitons in Monolayer WSe₂ at Room Temperature

Lo, T. W., Chen, X., Zhang, Z., Zhang, Q., Leung, C. W., Zayats, A. V. & Lei, D., 9 Mar 2022, In: Nano Letters. 22, 5, p. 1915-1921Scopus citations: 9

Entangled photons enabled time-frequency-resolved coherent Raman spectroscopy and applications to electronic coherences at femtosecond scale

Zhang, Z., Peng, T., Nie, X., Agarwal, G. S. & Scully, M. O., 2022, In: Light: Science and Applications. 11, 274.Scopus citations: 2

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On the thermodynamics of the difference between energy transfer rate and heat engine efficiency

Dong, H., Ghosh, A., Kim, M. B., Li, S., Svidzinsky, A. A., Zhang, Z., Kurizki, G., & 1 othersScully, M. O., Jun 2021, In: European Physical Journal: Special Topics. 230, 4, p. 867-871Scopus citations: 1

Coherent control of the multiple wavelength lasing of N_2^+ : coherence transfer and beyond

ZHANG, X., LU, Q., ZHANG, Z., FAN, Z., ZHOU, D., LIANG, Q., YUAN, L., & 3 others ZHUANG, S., DORFMAN, K. & LIU, Y., 20 May 2021, In: *Optica*. 8, 5, p. 668-673 Scopus citations: 10

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Wang, X., Zhang, Z. & Wang, J., Jan 2021, In: *Physical Review A*. 103, 1, 013516. Scopus citations: 6

Understanding the Seeding Pulse-Induced Optical Amplification in N_2^+ Pumped by 800 NM Femtosecond Laser Pulses

Fan, Z., Zhang, X., Lu, Q., Luo, Y., Liang, Q., Yuan, L., Zhang, Z., & 1 others Liu, Y., Dec 2020, In: *Photonics*. 7, 4, 99. Scopus citations: 2

Nonlinear spin currents

Nair, J. M. P., Zhang, Z., Scully, M. O. & Agarwal, G. S., 1 Sep 2020, In: *Physical Review B*. 102, 10, 104415. Scopus citations: 16

Comments on "Enhancement of the Raman Effect by Infrared Pumping"

Yi, Z., ZHANG, Z., Sokolov, A. V. & Yakovlev, V. V., 17 Apr 2020, In: *Physical Review Letters*. 124, 15, 159401. Scopus citations: 1

Roadmap on quantum light spectroscopy

Mukamel, S., Freyberger, M., Schleich, W., Bellini, M., Zavatta, A., Leuchs, G., Silberhorn, C., & 27 others Boyd, R. W., Sánchez-Soto, L. L., Stefanov, A., Barbieri, M., Paterova, A., Krivitsky, L., Shwartz, S., Tamasaku, K., Dorfman, K., Schlawin, F., Sandoghdar, V., Raymer, M., Marcus, A., Varnavski, O., Goodson III, T., Zhou, Z., Shi, B., Asban, S., Scully, M., Agarwal, G., Peng, T., Sokolov, A. V., Zhang, Z., Zubairy, M. S., Vartanyants, I. A., del Valle, E. & Laussy, F., Apr 2020, In: *Journal of Physics B: Atomic, Molecular and Optical Physics*. 53, 7, 072002. Scopus citations: 74

Quantum entanglement between two magnon modes via Kerr nonlinearity driven far from equilibrium

Zhang, Z., Scully, M. O. & Agarwal, G. S., Sep 2019, In: *Physical Review Research*. 1, 2, 023021. Scopus citations: 90

Polariton-Assisted Cooperativity of Molecules in Microcavities Monitored by Two-Dimensional Infrared Spectroscopy

Zhang, Z., Wang, K., Yi, Z., Zubairy, M. S., Scully, M. O. & Mukamel, S., 1 Aug 2019, In: *Journal of Physical Chemistry Letters*. 10, 15, p. 4448-4454 7 p. Scopus citations: 21

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BEGZJAV, T. K., ZHANG, Z., SCULLY, M. O. & AGARWAL, G. S., 13 May 2019, In: *Optics Express*. 27, 10, p. 13965-13977 Scopus citations: 8

Quantum Fluctuations in Fröhlich Condensate of Molecular Vibrations Driven Far From Equilibrium

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Zhang, Z., Saurabh, P., Dorfman, K. E., Debnath, A. & Mukamel, S., 21 Feb 2018, In: *Journal of Chemical Physics*. 148, 7, 074302. Scopus citations: 22

Fluorescence spectroscopy of vibronic polaritons of molecular aggregates in optical microcavities

Zhang, Z. & Mukamel, S., 1 Sep 2017, In: *Chemical Physics Letters*. 683, p. 653-657 Scopus citations: 7

Utilizing Microcavities to Suppress Third-Order Cascades in Fifth-Order Raman Spectra

Zhang, Z., Bennett, K., Chernyak, V. & Mukamel, S., 20 Jul 2017, In: *Journal of Physical Chemistry Letters*. 8, 14, p. 3387-3391 Scopus citations: 9

Nonequilibrium-induced enhancement of dynamical quantum coherence and entanglement of spin arrays

Zhang, Z., Fu, H. & Wang, J., Apr 2017, In: *Physical Review B*. 95, 14, p. 144306-144314 144306. Scopus citations: 6

Fluctuation-dissipation theorem for nonequilibrium quantum systems

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Origin of long-lived quantum coherence and excitation dynamics in pigment-protein complexes

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Vibrational and coherence dynamics of molecules

Zhang, Z. & Wang, J., 7 Oct 2015, In: Physical Chemistry Chemical Physics. 17, 37, p. 23754-23760Scopus citations: 5

Monopole Excitations of a Harmonically Trapped One-Dimensional Bose Gas from the Ideal Gas to the Tonks-Girardeau Regime

Choi, S., Dunjko, V., Zhang, Z. D. & Olshanii, M., 11 Sep 2015, In: Physical Review Letters. 115, 11, 115302.Scopus citations: 19

Shape, orientation and magnitude of the curl quantum flux, the coherence and the statistical correlations in energy transport at nonequilibrium steady state

Zhang, Z. & Wang, J., Sep 2015, In: New Journal of Physics. 17, 093021.Scopus citations: 8

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Zhang, Z. & Wang, J., 2 Apr 2015, In: Journal of Physical Chemistry B. 119, 13, p. 4662-4667Scopus citations: 13

Landscape, kinetics, paths and statistics of curl flux, coherence, entanglement and energy transfer in non-equilibrium quantum systems

Zhang, Z. & Wang, J., Apr 2015, In: New Journal of Physics. 17, 043053.Scopus citations: 20

Erratum: "Curl flux, coherence, and population landscape of molecular systems: Nonequilibrium quantum steady state, energy (charge) transport, and thermodynamics" [(J. Chem. Phys. 140, 245101 (2014))]

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Zhang, Z. D. & Wang, J., 28 Jun 2014, In: Journal of Chemical Physics. 140, 24, 245101.Scopus citations: 31

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