Stanford

Shanhui Fan

Joseph and Hon Mai Goodman Professor of the School of Engineering, Senior Fellow at the Precourt Institute for Energy and Professor, by courtesy, of Applied Physics

Electrical Engineering

Bio

BIO

Fan's research interests are in fundamental studies of nanophotonic structures, especially photonic crystals and meta-materials, and applications of these structures in energy and information technology applications

ACADEMIC APPOINTMENTS

- Professor, Electrical Engineering
- Senior Fellow, Precourt Institute for Energy
- Professor (By courtesy), Applied Physics
- Member, Bio-X
- Affiliate, Precourt Institute for Energy

ADMINISTRATIVE APPOINTMENTS

- Director, the Edward L. Ginzton Laboratory, Stanford University, (2014-2021)

HONORS AND AWARDS

- Member, American Academy of Arts and Sciences (2026)
- Fellow, National Academy of Inventors (2025)
- Member, National Academy of Sciences (2025)
- Member, National Academy of Engineering (2024)
- R. W. Wood Prize, Optica (Formerly the Optical Society of America) (2022)
- Simons Investigator in Physics, Simons Foundation (2021)
- Vannevar Bush Faculty Fellowship, Department of Defense (2017)
- Fellow, IEEE (2010)
- Fellow, SPIE (2009)
- Fellow, American Physical Society (2008)
- Adolph Lomb Medal, Optical Society of America (2007)
- Award for Initiatives in Research, National Academy of Sciences (2007)
- Fellow, Optical Society of America (2007)
- David and Lucile Packard Fellowship in Science and Engineering, David and Lucile Packard Foundation (2003)
- Career Award, National Science Foundation (2002)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Scientific Advisory Board, Max Planck Institute for the Science of Light (2022 - present)
- Co-Founder, Skycool Systems (2016 - present)
- Co-Founder, Flexcompute (2016 - present)
- Associate Editor, Applied Physics Letters (2013 - 2019)

PROFESSIONAL EDUCATION

- PhD, MIT , Physics (1997)

LINKS

- https://web.stanford.edu/~shanhui: https://web.stanford.edu/~shanhui
- Shanhui Fan's Google Scholar Page: https://scholar.google.com/citations?user=BECu7wYAAAAJ&hl=en

Teaching

COURSES

2025-26

- Guided Waves: EE 236B (Win)
- Nanophotonics: EE 336, MATSCI 346 (Aut)

2024-25

- Guided Waves: EE 236B (Win)
- Nanophotonics: EE 336, MATSCI 346 (Aut)

2023-24

- Guided Waves: EE 236B (Win)
- Nanophotonics: EE 336, MATSCI 346 (Aut)

2022-23

- Guided Waves: EE 236B (Win)
- Nanophotonics: EE 336, MATSCI 346 (Aut)
- Optics and Electronics Seminar: APPPHYS 483 (Spr)

STANFORD ADVISEES

Doctoral Dissertation Reader (AC)

Joao Azaro Berenguer, Johan Carlstrom, Yi-Shiou Duh, Melanie Murillo, Luke Qi

Postdoctoral Faculty Sponsor

Charles Roques-Carmes, Renwen Yu, Zhe Zhang

Doctoral Dissertation Advisor (AC)

Aivar Abrashuly, Matthew Beutel, Dali Cheng, Der-Han Huang, Olivia Long, Ekin Gunes Ozaktas, Janet Zhong

Master's Program Advisor

Feifei Cheng, Karolyn Cheng, Lingbo Duan, Luke Qiao, Weiwei Wu

Doctoral (Program)

Aivar Abrashuly, Dali Cheng, Sydney Mason, Anny Qiao, Yixuan Shao

Publications

PUBLICATIONS

- **Purcell-enhanced solid-state laser cooling** *PHYSICAL REVIEW APPLIED*
  Benzaouia, M., Fan, S.
  2026; 25 (1)
- **A cryogenic near-field thermal diode leveraging superconducting phase transitions.** *Nature nanotechnology*
  Luan, Y., Yan, S., Guan, J., Majumder, A., Isshiki, Y., Wang, Z., Mali, R., Yu, R., Fan, S., Meyhofer, E., Reddy, P.
  2026
- **Braiding of dynamical eigenvalues of Hermitian bosonic Kitaev chains** *PHYSICAL REVIEW A*
  Wang, H., Fan, S.
  2026; 113 (1)
- **A broadband electromagnetic circulator in magnetized plasma** *APPLIED PHYSICS LETTERS*
  Huang, D., Fan, S.
  2026; 128 (1)
- **Ideal optical antimatter using passive lossy materials under complex frequency excitation.** *Light, science & applications*
  Long, O. Y., Catrysse, P. B., Han, S., Fan, S.
  2026; 15 (1): 48
- **Joint control of coherent transmission, reflection, and absorption** *PHYSICAL REVIEW B*
  Li, S., Kim, D., Fan, S., Guo, C.
  2025; 112 (24)
- **Photonic Shankar Skyrmion.** *Physical review letters*
  Wang, H., Fan, S.
  2025; 135 (23): 233803
- **Photonic Shankar Skyrmion** *PHYSICAL REVIEW LETTERS*
  Wang, H., Fan, S.
  2025; 135 (23)
- **Dynamic realization of emergent high-dimensional optical vortices.** *Nature communications*
  Kim, D., Park, G., Choi, Y. S., Baucour, A., Hwang, J., Kim, J., Park, S., Yun, H. S., Shin, J., Wang, H., Fan, S., Yoon, D. K., Seo, et al
  2025; 16 (1): 9788
- **John Joannopoulos (1947-2025)** *NATURE PHOTONICS*
  Soljacic, M., Fan, S., Povinelli, M. L.
  2025
- **Quadrature-dependent lattice dynamics of dissipative microcombs** *NATURE PHOTONICS*
  Lustig, E., Guidry, M. A., Lukin, D. M., Fan, S., Vuckovic, J.
  2025
- **Editorial Interview: The Cool Power of Light** *IEEE JOURNAL OF SELECTED TOPICS IN QUANTUM ELECTRONICS*
  Fan, S.
  2025; 31 (6)
- **Formulation of Dispersive and Dissipative Time-Varying Media as a Floquet Matrix Eigenproblem.** *Physical review letters*
  Sun, Y., Fan, S., Hu, G.
  2025; 135 (15): 156903
- **Ultrafast space-time optical merons in momentum-energy space.** *Nature communications*
  Yessenov, M., Dorrah, A. H., Guo, C., Hall, L. A., Park, J. S., Free, J., Johnson, E. G., Capasso, F., Fan, S., Abouraddy, A. F.

2025; 16 (1): 8592

- **Universal programmable and self-configuring optical filter** *OPTICA*
  Miller, D. A. B., Roques-carmes, C., Valdez, C. G., Kroo, A. R., Vlk, M., Fan, S., Solgaard, O.
  2025; 12 (9): 1417-1426
- **Cavity quantum electrodynamics in a finite-bandwidth squeezed reservoir** *PHYSICAL REVIEW APPLIED*
  Le, T., Lukin, D. M., Roques-Carmes, C., Karnieli, A., Lustig, E., Guidry, M. A., Fan, S., Vuckovic, J.
  2025; 24 (3)
- **Near-Field Dynamical Casimir Effect.** *Physical review letters*
  Yu, R., Fan, S.
  2025; 135 (11): 116901
- **Near-Field Dynamical Casimir Effect** *PHYSICAL REVIEW LETTERS*
  Yu, R., Fan, S.
  2025; 135 (11)
- **Twist-Induced Beam Steering and Blazing Effects in Photonic Crystal Devices.** *Light, science & applications*
  Roy, N., Lou, B., Fan, S., Mayer, A., Lobet, M.
  2025; 14 (1): 263
- **Quantum nanophotonics with energetic particles: X-rays and free electrons** *PROGRESS IN QUANTUM ELECTRONICS*
  Shi, X., Lee, W., Karnieli, A., Lohse, L., Gorlach, A., Wong, L., Salditt, T., Fan, S., Kaminer, I., Wong, L.
  2025; 102
- **Transport Measurements of Majorization Order for Wave Coherence.** *Physical review letters*
  Guo, C., Miller, D. A., Fan, S.
  2025; 135 (5): 053801
- **Transport Measurements of Majorization Order for Wave Coherence** *PHYSICAL REVIEW LETTERS*
  Guo, C., Miller, D. A. B., Fan, S.
  2025; 135 (5)
- **Topological Nature of Edge States for One-Dimensional Systems without Symmetry Protection.** *Physical review letters*
  Zhong, J., Wang, H., Poddubny, A. N., Fan, S.
  2025; 135 (1): 016601
- **Topological Nature of Edge States for One-Dimensional Systems without Symmetry Protection** *PHYSICAL REVIEW LETTERS*
  Zhong, J., Wang, H., Poddubny, A. N., Fan, S.
  2025; 135 (1)
- **Nonlocality in photonic materials and metamaterials: roadmap** *OPTICAL MATERIALS EXPRESS*
  Monticone, F., Mortensen, N., Fernandez-Dominguez, A. I., Luo, Y., Zheng, X., Tserkezis, C., Khurgin, J. B., Shahbazyan, T., Chaves, A. J., Peres, N. M. R., Wegner, G., Busch, K., Hu, et al
  2025; 15 (7): 1544-1709
- **Free-space topological optical textures: tutorial** *ADVANCES IN OPTICS AND PHOTONICS*
  Shen, Y., Wang, H., Fan, S.
  2025; 17 (2): 295-374
- **Lorentz-Drude Dipoles in the Radiative Limit and Their Modeling in Finite-Difference Time-Domain Methods** *ANNALEN DER PHYSIK*
  Wang, H., Fan, S.
  2025
- **All-Dielectric Meta-Atoms for Three-Dimensional Isotropic Chiral Metamaterials** *ACS PHOTONICS*
  Ozaktas, E., Braun, P. V., Fan, S.
  2025
- **Automated Modal Analysis of Entanglement with Bipartite Self-Configuring Optics** *ACS PHOTONICS*
  Roques-Carmes, C., Karnieli, A., Miller, D. A. B., Fan, S.

2025

- **End-to-end design of multicolor scintillators for enhanced energy resolution in X-ray imaging.** *Light, science & applications*
  Min, S., Choi, S., Pajovic, S., Vaidya, S., Rivera, N., Fan, S., Soljačić, M., Roques-Carmes, C.
  2025; 14 (1): 158
- **An adaptive moiré sensor for spectro-polarimetric hyperimaging** *NATURE PHOTONICS*
  Tang, H., Lou, B., Du, F., Gao, G., Zhang, M., Ni, X., Hu, E., Yacoby, A., Cao, Y., Fan, S., Mazur, E.
  2025
- **Spatiotemporal Steering of Nondiffracting Wave Packets.** *Physical review letters*
  Wang, H., Guo, C., Fan, S.
  2025; 134 (7): 073803
- **Unitary control of multiport wave transmission** *PHYSICAL REVIEW A*
  Guo, C., Miller, D. A. B., Fan, S.
  2025; 111 (2)
- **Accelerated photonic design of coolhouse film for photosynthesis via machine learning.** *Nature communications*
  Li, J., Jiang, Y., Li, B., Xu, Y., Song, H., Xu, N., Wang, P., Zhao, D., Liu, Z., Shu, S., Wu, J., Zhong, M., Zhang, et al
  2025; 16 (1): 1396
- **Control of Chirality and Directionality of Nonlinear Metasurface Light Source via Moiré Engineering.** *Physical review letters*
  Zhou, H., Ni, X., Lou, B., Fan, S., Cao, Y., Tang, H.
  2025; 134 (4): 043801
- **Decoherence-free many-body Hamiltonians in nonlinear waveguide quantum electrodynamics** *PHYSICAL REVIEW RESEARCH*
  Karnieli, A., Tziperman, O., Roques-Carmes, C., Fan, S.
  2025; 7 (1)
- **Nighttime electric power generation at a density of 350 mW/m2 via radiative cooling** *CELL REPORTS PHYSICAL SCIENCE*
  Assawaworrarit, S., Zhou, M., Fan, L., Fan, S.
  2025; 6 (1)
- **Shaping space-time wave packets beyond the paraxial limit using a dispersion magnifier** *PHYSICAL REVIEW A*
  Kim, D., Guo, C., Catrysse, P. B., Fan, S.
  2025; 111 (1)
- **RCWA4D: Electromagnetic solver for layered structures with incommensurate periodicities** *COMPUTER PHYSICS COMMUNICATIONS*
  Lou, B., Fan, S.
  2025; 306
- **Multi-degree-of-freedom control of nonlinear optical two-dimensional quantum materials**
  Tang, H., Wang, Y., Ni, X., Watanabe, K., Taniguchi, T., Fan, S., Mazur, E., Yacoby, A., Cao, Y.
  edited by Majumdar, A., Torres, C. M., Deng, H.
  SPIE-INT SOC OPTICAL ENGINEERING.2025
- **Guided Space-Time Wavepacket Generation through Stimulated Brillouin Scattering in Waveguide System**
  Huang, D., Guo, C., Fan, S.
  edited by Moses, J.
  SPIE-INT SOC OPTICAL ENGINEERING.2025
- **Quantum optics with free electrons: from quantum sensing to strong coupling and single-photon nonlinearity**
  Karnieli, A., Roques-Carmes, C., Yu, R., Fan, S.
  edited by Shahriar, S. M.
  SPIE-INT SOC OPTICAL ENGINEERING.2025
- **Highly sensitive and efficient 1550 nm photodetector for room temperature operation** *AIP ADVANCES*
  Rituraj, Yu, Z., Kandegedara, R. B., Fan, S., Krishnamurthy, S.
  2025; 15 (1)

- **Non-Abelian lattice gauge fields in photonic synthetic frequency dimensions.** *Nature*
  Cheng, D., Wang, K., Roques-Carmes, C., Lustig, E., Long, O. Y., Wang, H., Fan, S.
  2025; 637 (8044): 52-56
- **Pole and zero edge state invariant for one-dimensional non-Hermitian sublattice symmetry** *PHYSICAL REVIEW B*
  Zhong, J., Wang, H., Fan, S.
  2024; 110 (21)
- **Enhanced Free-Electron-Photon Interactions at the Topological Transition in van der Waals Heterostructures.** *Nano letters*
  Yu, R., Fan, S.
  2024
- **Fictitious pole scheme for extending the spectrum of material permittivities in Casimir force calculations** *PHYSICAL REVIEW B*
  Iizuka, H., Fan, S.
  2024; 110 (23)
- **Kirchhoff's law violation within the main solar wavelength range** *APPLIED PHYSICS LETTERS*
  Park, Y., Fan, S.
  2024; 125 (24)
- **Passivity constraints on the relations between transmission, reflection, and absorption eigenvalues** *PHYSICAL REVIEW B*
  Guo, C., Fan, S.
  2024; 110 (20)
- **Nonreciprocal scintillation using one-dimensional magneto-optical photonic crystals** *PHYSICAL REVIEW APPLIED*
  Long, O. Y., Pajovic, S., Roques-Carmes, C., Tsurimaki, Y., Rivera, N., Soljacic, M., Boriskina, S., Fan, S.
  2024; 22 (5)
- **Subambient daytime radiative cooling of vertical surfaces.** *Science (New York, N.Y.)*
  Xie, F., Jin, W., Nolen, J. R., Pan, H., Yi, N., An, Y., Zhang, Z., Kong, X., Zhu, F., Jiang, K., Tian, S., Liu, T., Sun, et al
  2024; 386 (6723): 788-794
- **Legume: A free implementation of the guided-mode expansion method for photonic crystal slabs** *COMPUTER PHYSICS COMMUNICATIONS*
  Zanotti, S., Minkov, M., Nigro, D., Gerace, D., Fan, S., Andreani, L.
  2024; 304
- **Weyl points in a twisted multilayer photonic system** *APPLIED PHYSICS LETTERS*
  Abrashuly, A., Guo, C., Papadakis, G. T., Catrysse, P. B., Fan, S.
  2024; 125 (17)
- **Irreversible thermodynamics and the ZT figure of merit for thermophotovoltaics** *PHYSICAL REVIEW APPLIED*
  Tsurimaki, Y., Fan, S.
  2024; 22 (4)
- **Non-Hermitian photonic band winding and skin effects: a tutorial** *ADVANCES IN OPTICS AND PHOTONICS*
  Wang, H., Zhong, J., Fan, S.
  2024; 16 (3): 659-748
- **Measuring, processing, and generating partially coherent light with self-configuring optics.** *Light, science & applications*
  Roques-Carmes, C., Fan, S., Miller, D. A.
  2024; 13 (1): 260
- **Dual-ring resonator design for enhanced thermal isolation and optical performance** *JOURNAL OF THE OPTICAL SOCIETY OF AMERICA B-OPTICAL PHYSICS*
  Dede, E. M., Wang, J., Schmalenberg, P. D., Rodrigues, S. P., Fans, S.
  2024; 41 (9): 2140-2148
- **On-chip multi-degree-of-freedom control of two-dimensional materials.** *Nature*
  Tang, H., Wang, Y., Ni, X., Watanabe, K., Taniguchi, T., Jarillo-Herrero, P., Fan, S., Mazur, E., Yacoby, A., Cao, Y.

2024

- **Unitary control of partially coherent waves. I. Absorption** *PHYSICAL REVIEW B*
  Guo, C., Fan, S.
  2024; 110 (3)
- **Strong Coupling and Single-Photon Nonlinearity in Free-Electron Quantum Optics** *ACS PHOTONICS*
  Karnieli, A., Roques-Carmes, C., Rivera, N., Fan, S.
  2024
- **Unitary control of partially coherent waves. II. Transmission or reflection** *PHYSICAL REVIEW B*
  Guo, C., Fan, S.
  2024; 110 (3)
- **Free-Space Beam Steering with Twisted Bilayer Photonic Crystal Slabs** *ACS PHOTONICS*
  Lou, B., Tang, H., Du, F., Gao, G., Mazur, E., Fan, S.
  2024
- **One-dimensional non-Hermitian band structures as Riemann surfaces** *PHYSICAL REVIEW A*
  Wang, H., Fan, L., Fan, S.
  2024; 110 (1)
- **Theory for Broadband Large-Area Purcell Enhancement** *ACS PHOTONICS*
  Benzaouia, M., Fan, S.
  2024; 11 (7): 2667-2672
- **Mode distribution impact on photonic crystal surface emitting laser performance** *APL PHOTONICS*
  Gautam, C., Pan, M., Seth, S., Rotter, T. J., Zhou, M., Thompson, B. J., Gibson, R., Fan, S., Balakrishnan, G., Zhou, W.
  2024; 9 (7)
- **Topological winding guaranteed coherent orthogonal scattering** *PHYSICAL REVIEW A*
  Guo, C., Fan, S.
  2024; 109 (6)
- **Nanoscale optical nonreciprocity with nonlinear metasurfaces.** *Nature communications*
  Tripathi, A., Ugwu, C. F., Asadchy, V. S., Faniayeu, I., Kravchenko, I., Fan, S., Kivshar, Y., Valentine, J., Kruk, S. S.
  2024; 15 (1): 5077
- **Mesoscopic non-Hermitian skin effect** *PHYSICAL REVIEW A*
  Poddubny, A., Zhong, J., Fan, S.
  2024; 109 (6)
- **Light bullet generation via stimulated Brillouin scattering** *APL PHOTONICS*
  Huang, D., Guo, C., Fan, S.
  2024; 9 (6)
- **Time-modulated near-field radiative heat transfer.** *Proceedings of the National Academy of Sciences of the United States of America*
  Yu, R., Fan, S.
  2024; 121 (17): e2401514121
- **Nonreciprocal thermal photonics** *NATURE PHOTONICS*
  Yang, S., Liu, M., Zhao, C., Fan, S., Qiu, C.
  2024
- **Nanophotonic Heat Exchanger for Enhanced Near-Field Radiative Heat Transfer.** *Nano letters*
  Tsurimaki, Y., Benzaouia, M., Fan, S.
  2024
- **Universal and Ultrafast Quantum Computation Based on Free-Electron-Polariton Blockade** *PRX QUANTUM*
  Karnieli, A., Tsesses, S., Yu, R., Rivera, N., Arie, A., Kaminer, I., Fan, S.

2024; 5 (1)

- **Radiative cooling textiles using industry-standard particle-free nonporous micro-structured fibers.** *Nanophotonics (Berlin, Germany)*
  Catrysse, P. B., Fan, S.
  2024; 13 (5): 649-657
- **Three-Dimensional Reconfigurable Optical Singularities in Bilayer Photonic Crystals.** *Physical review letters*
  Ni, X., Liu, Y., Lou, B., Zhang, M., Hu, E. L., Fan, S., Mazur, E., Tang, H.
  2024; 132 (7): 073804
- **Optical Tellegen metamaterial with spontaneous magnetization.** *Nature communications*
  Safaei Jazi, S., Faniayeu, I., Cichelero, R., Tzarouchis, D. C., Asgari, M. M., Dmitriev, A., Fan, S., Asadchy, V.
  2024; 15 (1): 1293
- **Gauge-Flux-Induced Anti-Pt Phase Transitions for Extreme Control of Channel-Drop Tunneling** *LASER & PHOTONICS REVIEWS*
  Qin, C., Wang, B., Fan, S., Lu, P.
  2024
- **Photonic Topological Spin Pump in Synthetic Frequency Dimensions.** *Physical review letters*
  Suh, J., Kim, G., Park, H., Fan, S., Park, N., Yu, S.
  2024; 132 (3): 033803
- **Radiative cooling textiles using industry-standard particle-free nonporous micro-structured fibers** *NANOPHOTONICS*
  Catrysse, P. B., Fan, S.
  2024
- **Unitary Control of Photonic Absorption and Emission**
  Guo, C., Fan, S.
  edited by Seletskiy, D. V., Kuno, M. K., Pauzauskie, P. J.
  SPIE-INT SOC OPTICAL ENGINEERING.2024
- **Polarization mixing, bound states in a continuum, and exciton-polaritons in photonic crystal slabs by a guided-mode expansion approach**
  Zanotti, S., Minkov, M., Nigrol, D., Gerace, D., Fan, S., Andreanii, L.
  edited by DeStefano, L., Velotta, R., Descrovi, E.
  E D P SCIENCES.2024
- **Multifunctional intelligent surfaces based on volumetric inverse topology design**
  Asgari, M., Catrysse, P. B., Wang, H., Fan, S., Asadchy, V., IEEE
  IEEE.2024
- **Photonic Spin Hopfions and Monopole Loops.** *Physical review letters*
  Wang, H., Fan, S.
  2023; 131 (26): 263801
- **Spectral routers for snapshot multispectral imaging** *APPLIED PHYSICS LETTERS*
  Catrysse, P. B., Fan, S.
  2023; 123 (26)
- **Angle-selective thermal emitter for directional radiative cooling and heating** *JOULE*
  Zhou, J., Chen, T. G., Tsurimaki, Y., Hajj-Ahmad, A., Fan, L., Peng, Y., Xu, R., Wu, Y., Assawaworrarit, S., Fan, S., Cutkosky, M. R., Cui, Y.
  2023; 7 (12)
- **Numerical and theoretical study of eigenenergy braids in two-dimensional photonic crystals** *PHYSICAL REVIEW B*
  Zhong, J., Wojcik, C. C., Cheng, D., Fan, S.
  2023; 108 (19)
- **Surface Phonon Polariton-Mediated Near-Field Radiative Heat Transfer at Cryogenic Temperatures.** *Physical review letters*
  Yan, S., Luan, Y., Lim, J. W., Mittapally, R., Reihani, A., Wang, Z., Tsurimaki, Y., Fan, S., Reddy, P., Meyhofer, E.
  2023; 131 (19): 196302

- **Hyperbolic Polaritonic Rulers Based on van der Waals α-MoO3 Waveguides and Resonators.** *ACS nano*
  Yu, S. J., Yao, H., Hu, G., Jiang, Y., Zheng, X., Fan, S., Heinz, T. F., Fan, J. A.
  2023
- **Asymmetric phase modulation of light with parity-symmetry broken metasurfaces** *OPTICA*
  Mikheeva, E., Colom, R., Achouri, K., Overvig, A., Binkowski, F., Duboz, J., Cueff, S., Fan, S., Burger, S., Alu, A., Genevet, P.
  2023; 10 (10): 1287-1294
- **Singular topology of scattering matrices** *PHYSICAL REVIEW B*
  Guo, C., Li, J., Xiao, M., Fan, S.
  2023; 108 (15)
- **Roadmap on spatiotemporal light fields** *JOURNAL OF OPTICS*
  Shen, Y., Zhan, Q., Wright, L. G., Christodoulides, D. N., Wise, F. W., Willner, A. E., Zou, K., Zhao, Z., Porras, M. A., Chong, A., Wan, C., Bliokh, K. Y., Liao, et al
  2023; 25 (9)
- **Colorful low-emissivity paints for space heating and cooling energy savings.** *Proceedings of the National Academy of Sciences of the United States of America*
  Peng, Y., Lai, J. C., Xiao, X., Jin, W., Zhou, J., Yang, Y., Gao, X., Tang, J., Fan, L., Fan, S., Bao, Z., Cui, Y.
  2023; 120 (34): e2300856120
- **Experimental realization of convolution processing in photonic synthetic frequency dimensions.** *Science advances*
  Fan, L., Wang, K., Wang, H., Dutt, A., Fan, S.
  2023; 9 (32): eadi4956
- **Tunable magnetless optical isolation with twisted Weyl semimetals.** *Nanophotonics (Berlin, Germany)*
  Chistyakov, V. A., Asadchy, V. S., Fan, S., Alù, A., Krasnok, A.
  2023; 12 (16): 3333-3340
- **Direct observation of the violation of Kirchhoff's law of thermal radiation** *NATURE PHOTONICS*
  Shayegan, K. J., Biswas, S., Zhao, B., Fan, S., Atwater, H. A.
  2023
- **Experimental probe of twist angle-dependent band structure of on-chip optical bilayer photonic crystal.** *Science advances*
  Tang, H., Lou, B., Du, F., Zhang, M., Ni, X., Xu, W., Jin, R., Fan, S., Mazur, E.
  2023; 9 (28): eadh8498
- **Tunable magnetless optical isolation with twisted Weyl semimetals** *NANOPHOTONICS*
  Chistyakov, V. A., Asadchy, V. S., Fan, S., Alu, A., Krasnok, A.
  2023
- **Exceptional points and non-Hermitian photonics at the nanoscale.** *Nature nanotechnology*
  Li, A., Wei, H., Cotrufo, M., Chen, W., Mann, S., Ni, X., Xu, B., Chen, J., Wang, J., Fan, S., Qiu, C. W., Alù, A., Chen, et al
  2023
- **Multi-dimensional band structure spectroscopy in the synthetic frequency dimension.** *Light, science & applications*
  Cheng, D., Lustig, E., Wang, K., Fan, S.
  2023; 12 (1): 158
- **Spectral phase singularity and topological behavior in perfect absorption** *PHYSICAL REVIEW B*
  Liu, M., Chen, W., Hu, G., Fan, S., Christodoulides, D. N., Zhao, C., Qiu, C.
  2023; 107 (24)
- **Microring-based programmable coherent optical neural networks.** *Optics express*
  Wang, J., Rodrigues, S. P., Dede, E. M., Fan, S.
  2023; 31 (12): 18871-18887
- **Jaynes-Cummings interaction between low-energy free electrons and cavity photons.** *Science advances*
  Karnieli, A., Fan, S.

2023; 9 (22): eadh2425

- **Inverse Design of Optical Switch Based on Bilevel Optimization Inspired by Meta-Learning** *ACS PHOTONICS*
  Lou, B., Rodriguez, J., Wang, B., Cappelli, M., Fan, S.
  2023
- **Detecting the relative phase between different frequency components of a photon using a three-level A atom coupled to a waveguide** *PHYSICAL REVIEW A*
  Zhong, J., Rituraj, F., Dinc, F., Fan, S.
  2023; 107 (5)
- **Experimental evaluation of digitally verifiable photonic computing for blockchain and cryptocurrency** *OPTICA*
  Pai, S., Park, T., Ball, M., Penkovsky, B., Dubrovsky, M., Abebe, N., Milanizadeh, M., Morichetti, F., Melloni, A., Fan, S., Solgaard, O.
  2023; 10 (5): 552-560
- **Universal embedding of a non-Hermitian reciprocal scattering optical system into a Hermitian time-reversal-invariant system** *PHYSICAL REVIEW A*
  Minkov, M., Wang, H., Fan, S.
  2023; 107 (5)
- **Closing the Collection on Photovoltaic Energy Conversion** *PHYSICAL REVIEW APPLIED*
  Fan, S., Mi, Z.
  2023; 19 (5)
- **Increasing the Q-Contrast in Large Photonic Crystal Slab Resonators Using Bound-States-in-Continuum** *ACS PHOTONICS*
  Zhou, M., Kalapala, A., Pan, M., Gibson, R., Reilly, K., Rotter, T., Balakrishnan, G., Bedford, R., Zhou, W., Fan, S.
  2023
- **Experimentally realized in situ backpropagation for deep learning in photonic neural networks.** *Science (New York, N.Y.)*
  Pai, S., Sun, Z., Hughes, T. W., Park, T., Bartlett, B., Williamson, I. A., Minkov, M., Milanizadeh, M., Abebe, N., Morichetti, F., Melloni, A., Fan, S., Solgaard, et al
  2023; 380 (6643): 398-404
- **Majorization Theory for Unitary Control of Optical Absorption and Emission.** *Physical review letters*
  Guo, C., Fan, S.
  2023; 130 (14): 146202
- **Metasurface-based realization of photonic time crystals.** *Science advances*
  Wang, X., Mirmoosa, M. S., Asadchy, V. S., Rockstuhl, C., Fan, S., Tretyakov, S. A.
  2023; 9 (14): eadg7541
- **Observation of Negative Effective Thermal Diffusion in Gold Films** *ACS PHOTONICS*
  Block, A., Yu, R., Un, I., Varghese, S., Liebel, M., van Hulst, N. F., Fan, S., Tielrooij, K., Sivan, Y.
  2023; 10 (4): 1150-1158
- **Efficient biphoton emission in semiconductors by single-photon recycling** *PHYSICAL REVIEW A*
  Rituraj, S., Fan, S., Yu, Z., Boieriu, P., Krishnamurthy, S.
  2023; 107 (3)
- **Time reflection and refraction in synthetic frequency dimension** *PHYSICAL REVIEW RESEARCH*
  Long, O. Y., Wang, K., Dutt, A., Fan, S.
  2023; 5 (1)
- **Moving media as photonic heat engine and pump** *PHYSICAL REVIEW B*
  Tsurimaki, Y., Yu, R., Fan, S.
  2023; 107 (11)
- **Manipulating Coherence of Near-Field Thermal Radiation in Time-Modulated Systems.** *Physical review letters*
  Yu, R., Fan, S.
  2023; 130 (9): 096902

- **Neural network learning with photonics and for photonic circuit design** *NANOPHOTONICS*
  Brunner, D., Soriano, M. C., Fan, S.
  2023
- **Power monitoring in a feedforward photonic network using two output detectors.** *Nanophotonics (Berlin, Germany)*
  Pai, S., Valdez, C., Park, T., Milanizadeh, M., Morichetti, F., Melloni, A., Fan, S., Solgaard, O., Miller, D. A.
  2023; 12 (5): 985-991
- **Neural network learning with photonics and for photonic circuit design.** *Nanophotonics (Berlin, Germany)*
  Brunner, D., Soriano, M. C., Fan, S.
  2023; 12 (5): 773-775
- **Artificial Non-Abelian Lattice Gauge Fields for Photons in the Synthetic Frequency Dimension.** *Physical review letters*
  Cheng, D., Wang, K., Fan, S.
  2023; 130 (8): 083601
- **Thermally Responsive Hydrogels for Passive Temperature Regulation under Direct Sunlight** *ADVANCED PHOTONICS RESEARCH*
  Xie, D., Li, W., Richards, C. A., Gao, H., Chen, C., Miljkovic, N., Fan, S., Lee, J., Joshi, S. N., Braun, P. V.
  2023
- **Light control with Weyl semimetals** *ELIGHT*
  Guo, C., Asadchy, V. S., Zhao, B., Fan, S.
  2023; 3 (1)
- **Power monitoring in a feedforward photonic network using two output detectors** *NANOPHOTONICS*
  Pai, S., Valdez, C., Park, T., Milanizadeh, M., Morichetti, F., Melloni, A., Fan, S., Solgaard, O., Miller, D. A. B.
  2023
- **Quantum sensing of strongly coupled light-matter systems using free electrons.** *Science advances*
  Karnieli, A., Tsesses, S., Yu, R., Rivera, N., Zhao, Z., Arie, A., Fan, S., Kaminer, I.
  2023; 9 (1): eadd2349
- **Response to comment on "Does non-reciprocity break the Shockley-Queisser limit in single-junction solar cells?" [Appl. Phys. Lett. 122, 016101 (2023)]** *APPLIED PHYSICS LETTERS*
  Park, Y., Fan, S.
  2023; 122 (1)
- **Frequency Response Characteristics of High-Power Photonic Crystal Surface-Emitting Lasers**
  Pan, M., Gautam, C., Kalapala, A., Chen, Y., Rotter, T., Zhou, M., Gibson, R., Bedford, R., Fan, S., Balakrishnan, G., Zhou, W., IEEE
  IEEE.2023
- **Unitary Control of Optical Absorption and Emission**
  Guo, C., Fan, S., IEEE
  IEEE.2023
- **Nonreciprocal Thermal Emission Using Spatiotemporal Modulation of Graphene** *ACS PHOTONICS*
  Ghanekar, A., Wang, J., Guo, C., Fan, S., Povinelli, M. L.
  2022
- **Floquet-Mie Theory for Time-Varying Dispersive Spheres** *LASER & PHOTONICS REVIEWS*
  Ptitcyn, G., Lamprianidis, A., Karamanos, T., Asadchy, V., Alaee, R., Mueller, M., Albooyeh, M., Mirmoosa, M., Fan, S., Tretyakov, S., Rockstuhl, C.
  2022
- **Topological spin defects of light** *OPTICA*
  [Anonymous]
  2022; 9 (12): 1417-1423
- **Tunable guided resonance in twisted bilayer photonic crystal.** *Science advances*
  Lou, B., Wang, B., Rodríguez, J. A., Cappelli, M., Fan, S.
  2022; 8 (48): eadd4339

- **Thermal photonics with broken symmetries** *ELIGHT*
  Liu, T., Guo, C., Li, W., Fan, S.
  2022; 2 (1)
- **Nonreciprocal Thermophotovoltaic Systems** *ACS PHOTONICS*
  Park, Y., Omair, Z., Fan, S.
  2022
- **Super-Large-Scale Hierarchically Porous Films Based on Self-Assembled Eye-Like Air Pores for High-Performance Daytime Radiative Cooling.** *Small (Weinheim an der Bergstrasse, Germany)*
  Tian, Q., Tu, X., Yang, L., Liu, H., Zhou, Y., Xing, Y., Chen, Z., Fan, S., Evans, J., He, S.
  2022: e2205091
- **Nanophotonic detector array to enable direct thermal infrared vision.** *Optics express*
  Khandekar, C., Jin, W., Fan, S.
  2022; 30 (21): 39222-39233
- **Eigenvalue topology of non-Hermitian band structures in two and three dimensions** *PHYSICAL REVIEW B*
  Wojcik, C. C., Wang, K., Dutt, A., Zhong, J., Fan, S.
  2022; 106 (16)
- **Trajectory tracking through the control of non-equilibrium Casimir force** *JOURNAL OF QUANTITATIVE SPECTROSCOPY & RADIATIVE TRANSFER*
  Iizuka, H., Fan, S.
  2022; 289
- **Multidimensional Convolution Operation with Synthetic Frequency Dimensions in Photonics** *PHYSICAL REVIEW APPLIED*
  Fan, L., Zhao, Z., Wang, K., Dutt, A., Wang, J., Buddhiraju, S., Wojcik, C. C., Fan, S.
  2022; 18 (3)
- **Laser Cooling Assisted Thermal Management of Lightsails** *ACS PHOTONICS*
  Jin, W., Li, W., Khandekar, C., Orenstein, M., Fan, S.
  2022
- **Does non-reciprocity break the Shockley-Queisser limit in single-junction solar cells?** *APPLIED PHYSICS LETTERS*
  Park, Y., Fan, S.
  2022; 121 (11)
- **Radiative-cooling-based nighttime electricity generation with power density exceeding 100 mW/m2.** *iScience*
  Omair, Z., Assawaworrarit, S., Fan, L., Jin, W., Fan, S.
  2022; 25 (8): 104858
- **Doping-driven topological polaritons in graphene/alpha-MoO3 heterostructures.** *Nature nanotechnology*
  Hu, H., Chen, N., Teng, H., Yu, R., Qu, Y., Sun, J., Xue, M., Hu, D., Wu, B., Li, C., Chen, J., Liu, M., Sun, et al
  2022
- **A tandem radiative/evaporative cooler for weather-insensitive and high-performance daytime passive cooling.** *Science advances*
  Li, J., Wang, X., Liang, D., Xu, N., Zhu, B., Li, W., Yao, P., Jiang, Y., Min, X., Huang, Z., Zhu, S., Fan, S., Zhu, et al
  2022; 8 (32): eabq0411
- **Scaling Challenges in High Power Photonic Crystal Surface-Emitting Lasers** *IEEE JOURNAL OF QUANTUM ELECTRONICS*
  Kalapala, A., Song, A. Y., Pan, M., Gautam, C., Overman, L., Reilly, K., Rotter, T. J., Balakrishnan, G., Gibson, R., Bedford, R., Coleman, J. J., Fan, S., Zhou, et al
  2022; 58 (4)
- **Effect of choices of boundary conditions on the numerical efficiency of direct solutions of finite difference frequency domain systems with perfectly matched layers** *OPTICS EXPRESS*
  Zhao, N. Z., Fan, S.
  2022; 30 (15): 26794-26806

- **Mirror symmetric on-chip frequency circulation of light** *NATURE PHOTONICS*
  Herrmann, J. F., Ansari, V., Wang, J., Witmer, J. D., Fan, S., Safavi-Naeini, A. H.
  2022
- **Roadmap on topological photonics** *JOURNAL OF PHYSICS-PHOTONICS*
  Price, H., Chong, Y., Khanikaev, A., Schomerus, H., Maczewsky, L. J., Kremer, M., Heinrich, M., Szameit, A., Zilberberg, O., Yang, Y., Zhang, B., Alu, A., Thomale, et al
  2022; 4 (3)
- **Reciprocity Constraints on Reflection.** *Physical review letters*
  Guo, C., Fan, S.
  2022; 128 (25): 256101
- **Creating boundaries along a synthetic frequency dimension.** *Nature communications*
  Dutt, A., Yuan, L., Yang, K. Y., Wang, K., Buddhiraju, S., Vuckovic, J., Fan, S.
  2022; 13 (1): 3377
- **Temporal modulation brings metamaterials into new era.** *Light, science & applications*
  Yuan, L., Fan, S.
  2022; 11 (1): 173
- **Nonreciprocal infrared absorption via resonant magneto-optical coupling to InAs.** *Science advances*
  Shayegan, K. J., Zhao, B., Kim, Y., Fan, S., Atwater, H. A.
  2022; 8 (18): eabm4308
- **Truncation-dependent PT phase transition for the edge states of a two-dimensional non-Hermitian system** *PHYSICAL REVIEW B*
  Cheng, D., Peng, B., Xiao, M., Chen, X., Yuan, L., Fan, S.
  2022; 105 (20)
- **Subwavelength Bayer RGB color routers with perfect optical efficiency.** *Nanophotonics (Berlin, Germany)*
  Catrysse, P. B., Zhao, N., Jin, W., Fan, S.
  2022; 11 (10): 2381-2387
- **Adjoint Kirchhoff?s Law and General Symmetry Implications for All Thermal Emitters** *PHYSICAL REVIEW X*
  Guo, C., Zhao, B., Fan, S.
  2022; 12 (2)
- **Low-overhead distribution strategy for simulation and optimization of large-area metasurfaces** *NPJ COMPUTATIONAL MATERIALS*
  Skarda, J., Trivedi, R., Su, L., Ahmad-Stein, D., Kwon, H., Han, S., Fan, S., Vuckovic, J.
  2022; 8 (1)
- **Violation of Kirchhoff's Law of Thermal Radiation with Space-Time Modulated Grating** *ACS PHOTONICS*
  Ghanekar, A., Wang, J., Fan, S., Povinelli, M. L.
  2022; 9 (4): 1157-1164
- **Design of Compact Meta-Crystal Slab for General Optical Convolution** *ACS PHOTONICS*
  Wang, H., Jin, W., Guo, C., Zhao, N., Rodrigues, S. P., Fan, S.
  2022; 9 (4): 1358-1365
- **Few-particle scattering from localized quantum systems in spatially structured bosonic baths** *QUANTUM*
  Trivedi, R., Fischer, K., Fan, S., Vuckovic, J.
  2022; 6
- **Observation of Weyl exceptional rings in thermal diffusion.** *Proceedings of the National Academy of Sciences of the United States of America*
  Xu, G., Li, W., Zhou, X., Li, H., Li, Y., Fan, S., Zhang, S., Christodoulides, D. N., Qiu, C. W.
  2022; 119 (15): e2110018119
- **Nighttime electric power generation at a density of 50 mW/m(2) via radiative cooling of a photovoltaic cell** *APPLIED PHYSICS LETTERS*
  Assawaworrarit, S., Omair, Z., Fan, S.
  2022; 120 (14)

- **Subwavelength Bayer RGB color routers with perfect optical efficiency** *NANOPHOTONICS*
  Catrysse, P. B., Zhao, N., Jin, W., Fan, S.
  2022
- **Tunable Frequency Filter Based on Twisted Bilayer Photonic Crystal Slabs** *ACS PHOTONICS*
  Lou, B., Fan, S.
  2022; 9 (3): 800-805
- **Spectral emissivity modeling in multi-resonant systems using coupled-mode theory** *OPTICS EXPRESS*
  Audhkhasi, R., Zhao, B., Fan, S., Yu, Z., Povinelli, M. L.
  2022; 30 (6): 9463-9472
- **Topological Materials for Functional Optoelectronic Devices** *ADVANCED FUNCTIONAL MATERIALS*
  Chorsi, H., Cheng, B., Zhao, B., Toudert, J., Asadchy, V., Shoron, O. F., Fan, S., Matsunaga, R.
  2022
- **Topological dissipation in a time-multiplexed photonic resonator network** *NATURE PHYSICS*
  Leefmans, C., Dutt, A., Williams, J., Yuan, L., Porto, M., Nori, F., Fan, S., Marandi, A.
  2022
- **Efficient method for accelerating line searches in adjoint optimization of photonic devices by combining Schur complement domain decomposition and Born series expansions** *OPTICS EXPRESS*
  Zhao, N. Z., Boutami, S., Fan, S.
  2022; 30 (4): 6413-6424
- **Lineshape study of optical force spectra on resonant structures** *OPTICS EXPRESS*
  Fan, L., Zhao, Z., Rituraj, Jin, W., Orenstein, M., Fan, S.
  2022; 30 (4): 6142-6160
- **Internal transformations and internal symmetries in linear photonic systems** *PHYSICAL REVIEW A*
  Guo, C., Zhao, Z., Fan, S.
  2022; 105 (2)
- **Polarization-Independent Isotropic Nonlocal Metasurfaces with Wavelength-Controlled Functionality** *PHYSICAL REVIEW APPLIED*
  Long, O. Y., Guo, C., Jin, W., Fan, S.
  2022; 17 (2)
- **Photonics and thermodynamics concepts in radiative cooling** *NATURE PHOTONICS*
  Fan, S., Li, W.
  2022
- **Concentrated radiative cooling and its constraint from reciprocity** *OPTICS EXPRESS*
  Dong, M., Zhu, L., Jiang, B., Fan, S., Chen, Z.
  2022; 30 (1): 275-285
- **Flashing light with nanophotonics.** *Science (New York, N.Y.)*
  Yu, R., Fan, S.
  2022; 375 (6583): 822-823
- **Prospects and applications of photonic neural networks** *ADVANCES IN PHYSICS-X*
  Huang, C., Sorger, V. J., Miscuglio, M., Al-Qadasi, M., Mukherjee, A., Lampe, L., Nichols, M., Tait, A. N., Ferreira de Lima, T., Marquez, B. A., Wang, J., Chrostowski, L., Fok, et al
  2022; 7 (1)
- **Protecting ice from melting under sunlight via radiative cooling.** *Science advances*
  Li, J., Liang, Y., Li, W., Xu, N., Zhu, B., Wu, Z., Wang, X., Fan, S., Wang, M., Zhu, J.
  2022; 8 (6): eabj9756
- **Universal Behavior of the Scattering Matrix Near Thresholds in Photonics.** *Physical review letters*
  Wojcik, C. C., Wang, H., Orenstein, M., Fan, S.

1800; 127 (27): 277401

- **Thermodynamics of Light Management in Near-Field Thermophotovoltaics** *PHYSICAL REVIEW APPLIED*
  Papadakis, G. T., Orenstein, M., Yablonovitch, E., Fan, S.
  2021; 16 (6)
- **Nonequilibrium lateral force and torque by thermally excited nonreciprocal surface electromagnetic waves** *PHYSICAL REVIEW B*
  Khandekar, C., Buddhiraju, S., Wilkinson, P. R., Gimzewski, J. K., Rodriguez, A. W., Chase, C., Fan, S.
  2021; 104 (24)
- **Coloured low-emissivity films for building envelopes for year-round energy savings** *NATURE SUSTAINABILITY*
  Peng, Y., Fan, L., Jin, W., Ye, Y., Huang, Z., Zhai, S., Luo, X., Ma, Y., Tang, J., Zhou, J., Greenburg, L. C., Majumdar, A., Fan, et al
  2021
- **Reaching the Ultimate Efficiency of Solar Energy Harvesting with a Nonreciprocal Multijunction Solar Cell.** *Nano letters*
  Park, Y., Zhao, B., Fan, S.
  1800
- **Deterministic photonic quantum computation in a synthetic time dimension** *OPTICA*
  Bartlett, B., Dutt, A., Fan, S.
  2021; 8 (12): 1515-1523
- **Nonreciprocal Thermal Emitters Using Metasurfaces with Multiple Diffraction Channels** *PHYSICAL REVIEW APPLIED*
  Zhao, B., Wang, J., Zhao, Z., Guo, C., Yu, Z., Fan, S.
  2021; 16 (6)
- **Shockley-Queisser analysis of the temperature-efficiency correlation of solar cells in the presence of non- radiative heat transfer (vol 29, pg 27554, 2021)** *OPTICS EXPRESS*
  Zhang, Z., Chen, K., Fan, S., Chen, Z.
  2021; 29 (24): 39173
- **Phonon-induced anomalous gauge potential for photonic isolation in frequency space** *OPTICA*
  Yang, J., Yuan, L., Qin, T., Zhang, F., Chen, Y., Jiang, X., Chen, X., Fan, S., Wan, W.
  2021; 8 (11): 1448-1457
- **A perspective on the pathway towardfull wave simulation of large area metalenses (vol 119, 150502, 2021)
** *APPLIED PHYSICS LETTERS*
  Hughes, T. W., Minkov, M., Liu, V., Yu, Z., Fan, S.
  2021; 119 (20)
- **Subambient daytime radiative cooling textile based on nanoprocessed silk** *NATURE NANOTECHNOLOGY*
  Zhu, B., Li, W., Zhang, Q., Li, D., Liu, X., Wang, Y., Xu, N., Wu, Z., Li, J., Li, X., Catrysse, P. B., Xu, W., Fan, et al
  2021
- **Long-Range Directional Routing and Spatial Selection of High-Spin-Purity Valley Trion Emission in Monolayer WS2.** *ACS nano*
  Chen, P., Li, Z., Qi, Y., Lo, T. W., Wang, S., Jin, W., Wong, K., Fan, S., Zayats, A. V., Lei, D.
  2021
- **Adaptive four-level modeling of laser cooling of solids** *APPLIED PHYSICS LETTERS*
  Jin, W., Guo, C., Orenstein, M., Fan, S.
  2021; 119 (18)
- **Integrated cooling (i-Cool) textile of heat conduction and sweat transportation for personal perspiration management.** *Nature communications*
  Peng, Y., Li, W., Liu, B., Jin, W., Schaadt, J., Tang, J., Zhou, G., Wang, G., Zhou, J., Zhang, C., Zhu, Y., Huang, W., Wu, et al
  2021; 12 (1): 6122
- **Space-Time Metasurfaces for Power Combining of Waves** *ACS PHOTONICS*
  Wang, X., Asadchy, V. S., Fan, S., Tretyakov, S. A.
  2021; 8 (10): 3034-3041

- **Editorial: Introducing the Collection on Photovoltaic Energy Conversion** *PHYSICAL REVIEW APPLIED*
  Fan, S., Mi, Z.
  2021; 16 (4)
- **Electron Pulse Compression with Optical Beat Note.** *Physical review letters*
  Zhao, Z., Leedle, K. J., Black, D. S., Solgaard, O., Byer, R. L., Fan, S.
  2021; 127 (16): 164802
- **Electron Pulse Compression with Optical Beat Note** *PHYSICAL REVIEW LETTERS*
  Zhao, Z., Leedle, K. J., Black, D. S., Solgaard, O., Byer, R. L., Fan, S.
  2021; 127 (16)
- **A perspective on the pathway toward full wave simulation of large area metalenses** *APPLIED PHYSICS LETTERS*
  Hughes, T. W., Minkov, M., Liu, V., Yu, Z., Fan, S.
  2021; 119 (15)
- **Nontrivial point-gap topology and non-Hermitian skin effect in photonic crystals** *PHYSICAL REVIEW B*
  Zhong, J., Wang, K., Park, Y., Asadchy, V., Wojcik, C. C., Dutt, A., Fan, S.
  2021; 104 (12)
- **Configurable Phase Transitions in a Topological Thermal Material.** *Physical review letters*
  Xu, G., Li, Y., Li, W., Fan, S., Qiu, C.
  2021; 127 (10): 105901
- **Inverse Design of Metasurfaces Based on Coupled-Mode Theory and Adjoint Optimization** *ACS PHOTONICS*
  Zhou, M., Liu, D., Belling, S. W., Cheng, H., Kats, M. A., Fan, S., Povinelli, M. L., Yu, Z.
  2021; 8 (8): 2265-2273
- **Violating Kirchhoff's Law of Thermal Radiation in Semitransparent Structures** *ACS PHOTONICS*
  Park, Y., Asadchy, V. S., Zhao, B., Guo, C., Wang, J., Fan, S.
  2021; 8 (8): 2417-2424
- **Generation of guided space-time wave packets using multilevel indirect photonic transitions in integrated photonics** *PHYSICAL REVIEW RESEARCH*
  Guo, C., Fan, S.
  2021; 3 (3)
- **Shockley-Queisser analysis of the temperature-efficiency correlation of solar cells in the presence of non-radiative heat transfer** *OPTICS EXPRESS*
  Zhang, Z., Chen, K., Fan, S., Chen, Z.
  2021; 29 (17): 27554-27561
- **High-performance photonic transformers for DC voltage conversion.** *Nature communications*
  Zhao, B., Assawaworrarit, S., Santhanam, P., Orenstein, M., Fan, S.
  2021; 12 (1): 4684
- **Structured 3D linear space-time light bullets by nonlocal nanophotonics.** *Light, science & applications*
  Guo, C., Xiao, M., Orenstein, M., Fan, S.
  2021; 10 (1): 160
- **Engineering arbitrarily oriented spatiotemporal optical vortices using transmission nodal lines** *OPTICA*
  Wang, H., Guo, C., Jin, W., Song, A. Y., Fan, S.
  2021; 8 (7): 966-971
- **Controllable finite ultra-narrow quality-factor peak in a perturbed Dirac-cone band structure of a photonic-crystal slab** *APPLIED PHYSICS LETTERS*
  Song, A. Y., Kalapala, A., Gibson, R., Reilly, K., Rotter, T., Addamane, S., Wang, H., Guo, C., Balakrishnan, G., Bedford, R., Zhou, W., Fan, S.
  2021; 119 (3)
- **Arbitrary synthetic dimensions via multiboson dynamics on a one-dimensional lattice** *PHYSICAL REVIEW RESEARCH*

Cheng, D., Peng, B., Wang, D., Chen, X., Yuan, L., Fan, S.
2021; 3 (3)

- **Inverse Design of Plasma Metamaterial Devices for Optical Computing** *PHYSICAL REVIEW APPLIED*
Rodriguez, J. A., Abdalla, A. I., Wang, B., Lou, B., Fan, S., Cappelli, M. A.
2021; 16 (1)
- **Optimal two-photon excitation of bound states in non-Markovian waveguide QED** *PHYSICAL REVIEW A*
Trivedi, R., Malz, D., Sun, S., Fan, S., Vuckovic, J.
2021; 104 (1)
- **Isotropic topological second-order spatial differentiator operating in transmission mode** *OPTICS LETTERS*
Long, O. Y., Guo, C., Wang, H., Fan, S.
2021; 46 (13): 3247-3250
- **Synthetic frequency dimensions in dynamically modulated ring resonators** *APL PHOTONICS*
Yuan, L., Dutt, A., Fan, S.
2021; 6 (7)
- **Single Gyrotropic Particle as a Heat Engine** *ACS PHOTONICS*
Guo, Y., Fan, S.
2021; 8 (6): 1623-1629
- **Quantum Entanglement and Modulation Enhancement of Free-Electron-Bound-Electron Interaction** *PHYSICAL REVIEW LETTERS*
Zhao, Z., Sun, X., Fan, S.
2021; 126 (23)
- **Quantum Entanglement and Modulation Enhancement of Free-Electron-Bound-Electron Interaction.** *Physical review letters*
Zhao, Z., Sun, X. Q., Fan, S.
2021; 126 (23): 233402
- **Adjoint Method and Inverse Design for Nonlinear Nanophotonic Devices (vol 5, pg 4781, 2018)** *ACS PHOTONICS*
Hughes, T. W., Minkov, M., Williamson, I. A. D., Fan, S.
2021; 8 (5): 1505
- **Deep-Subwavelength Thermal Switch via Resonant Coupling in Monolayer Hexagonal Boron Nitride** *PHYSICAL REVIEW APPLIED*
Papadakis, G. T., Ciccarino, C. J., Fan, L., Orenstein, M., Narang, P., Fan, S.
2021; 15 (5)
- **Arbitrary linear transformations for photons in the frequency synthetic dimension.** *Nature communications*
Buddhiraju, S., Dutt, A., Minkov, M., Williamson, I. A., Fan, S.
2021; 12 (1): 2401
- **Publisher Correction: Topological optical differentiator.** *Nature communications*
Zhu, T., Guo, C., Huang, J., Wang, H., Orenstein, M., Ruan, Z., Fan, S.
2021; 12 (1): 2209
- **Control of non-equilibrium Casimir force** *APPLIED PHYSICS LETTERS*
Iizuka, H., Fan, S.
2021; 118 (14)
- **Effect of Coulomb interaction on the transient optical response of electrons in field-coupled quantum dots** *PHYSICAL REVIEW A*
Lu, X., Huang, D., Fan, S.
2021; 103 (4)
- **Theory for Twisted Bilayer Photonic Crystal Slabs.** *Physical review letters*
Lou, B., Zhao, N., Minkov, M., Guo, C., Orenstein, M., Fan, S.
2021; 126 (13): 136101
- **Wide wavelength-tunable narrow-band thermal radiation from moire patterns** *APPLIED PHYSICS LETTERS*
Guo, C., Guo, Y., Lou, B., Fan, S.

2021; 118 (13)

- **Photonic Chern insulators from two-dimensional atomic lattices interacting with a single surface plasmon polariton** *PHYSICAL REVIEW B*
  Rituraj, Orenstein, M., Fan, S.
  2021; 103 (12)
- **Nondissipative non-Hermitian dynamics and exceptional points in coupled optical parametric oscillators** *OPTICA*
  Roy, A., Jahani, S., Guo, Q., Dutt, A., Fan, S., Miri, M., Marandi, A.
  2021; 8 (3): 415–21
- **Atomic-Scale Control of Coherent Thermal Radiation** *ACS PHOTONICS*
  Zhao, B., Song, J., Brongersma, M., Fan, S.
  2021; 8 (3): 872–78
- **Transforming heat transfer with thermal metamaterials and devices** *NATURE REVIEWS MATERIALS*
  Li, Y., Li, W., Han, T., Zheng, X., Li, J., Li, B., Fan, S., Qiu, C.
  2021
- **Doubly-Resonant Photonic Crystal Cavities for Efficient Second-Harmonic Generation in III-V Semiconductors.** *Nanomaterials (Basel, Switzerland)*
  Zanotti, S., Minkov, M., Fan, S., Andreani, L. C., Gerace, D.
  2021; 11 (3)
- **Interaction of two-dimensional atomic lattices with a single surface plasmon polariton** *PHYSICAL REVIEW A*
  Rituraj, Orenstein, M., Fan, S.
  2021; 103 (2)
- **Self-Focused Thermal Emission and Holography Realized by Mesoscopic Thermal Emitters** *ACS PHOTONICS*
  Zhou, M., Khoram, E., Liu, D., Liu, B., Fan, S., Povinelli, M. L., Yu, Z.
  2021; 8 (2): 497–504
- **Topological optical differentiator.** *Nature communications*
  Zhu, T., Guo, C., Huang, J., Wang, H., Orenstein, M., Ruan, Z., Fan, S.
  2021; 12 (1): 680
- **Nighttime Radiative Cooling for Water Harvesting from Solar Panels** *ACS PHOTONICS*
  Li, W., Dong, M., Fan, L., John, J., Chen, Z., Fan, S.
  2021; 8 (1): 269–75
- **Scattering of a single plasmon polariton by multiple atoms for in-plane control of light** *NANOPHOTONICS*
  Rituraj, Orenstein, M., Fan, S.
  2021; 10 (1): 579–87
- **Topological complex-energy braiding of non-Hermitian bands.** *Nature*
  Wang, K., Dutt, A., Wojcik, C. C., Fan, S.
  2021; 598 (7879): 59-64
- **Photonic Modal Circulator Using Temporal Refractive-Index Modulation with Spatial Inversion Symmetry.** *Physical review letters*
  Wang, J., Herrmann, J. F., Witmer, J. D., Safavi-Naeini, A. H., Fan, S.
  2021; 126 (19): 193901
- **Quantum entanglement and modulation enhancement of free-electron-bound-electron interaction**
  Zhao, Z., Sun, X., Fan, S., IEEE
  IEEE.2021
- **Teleportation-Based Photonic Quantum Computing Using a Single Controllable Qubit**
  Bartlett, B., Dutt, A., Fan, S., IEEE
  IEEE.2021
- **Photonic arbitrary linear transformations in the frequency synthetic dimension**
  Buddhiraju, S., Dutt, A., Minkov, M., Williamson, I. A. D., Fan, S., IEEE

IEEE.2021

- **Integrated thin-film lithium niobate non-reciprocal circulator**
  Herrmann, J. F., Ansari, V., Wang, J., Witmer, J. D., Fan, S., Safavi-Naeini, A. H., IEEE
  IEEE.2021
- **Fabrication of Photonic Crystal Surface Emitting Lasers (PCSELs) by Epitaxial Regrowth**
  Reilly, K., Kalapala, A., Song, A., Rotter, T., Liu, Z., Renteria, E., Fan, S., Zhou, W., Balakrishnan, G., IEEE
  IEEE.2021
- **Photonic Topological Dissipation in Time-Multiplexed Resonator Networks**
  Leefmans, C., Dutt, A., Williams, J., Yuan, L., Parto, M., Nori, F., Fan, S., Marandi, A., IEEE
  IEEE.2021
- **Manipulating Single Surface Plasmon Polariton via Tailored Atom-Photon Interaction**
  Rituraj, Orenstein, M., Fan, S., IEEE
  IEEE.2021
- **Photonic modal circulator using dynamic modulation with mirror symmetry**
  Wang, J., Herrmann, J., Witmer, J., Safavi-Naeini, A. H., Fan, S., IEEE
  IEEE.2021
- **Design of Nighttime Power Generation System to Optimally Utilize Outer Space Darkness**
  Fan, L., Li, W., Jin, W., Orenstein, M., Fan, S., IEEE
  IEEE.2021
- **Photonic Meron Spin Texture in Momentum Space**
  Guo, C., Xiao, M., Guo, Y., Yuan, L., Fan, S., IEEE
  IEEE.2021
- **Experimental Demonstration of Dynamic Band Structure Measurement along a Synthetic Dimension**
  Li, G., Zheng, Y., Dutt, A., Yu, D., Shan, Q., Liu, S., Yuan, L., Fan, S., Chen, X., IEEE
  IEEE.2021
- **Design principles of apodized grating couplers**
  Zhao, Z., Fan, S., IEEE
  IEEE.2021
- **Arbitrary control and direct measurement of topological windings of a non-Hermitian band**
  Wang, K., Dutt, A., Yang, K., Wojcik, C. C., Vuckovic, J., Fan, S., IEEE
  IEEE.2021
- **Inverse design of relativistic lightsail for efficient propulsion**
  Jin, W., Li, W., Orenstein, M., Fan, S., IEEE
  IEEE.2021
- **Generating arbitrary topological windings of a non-Hermitian band.** *Science (New York, N.Y.)*
  Wang, K., Dutt, A., Yang, K. Y., Wojcik, C. C., Vuckovic, J., Fan, S.
  2021; 371 (6535): 1240–45
- **Dynamic band structure measurement in the synthetic space** *SCIENCE ADVANCES*
  Li, G., Zheng, Y., Dutt, A., Yu, D., Shan, Q., Liu, S., Yuan, L., Fan, S., Chen, X.
  2021; 7 (2)
- **Three-Dimensional Printable Nanoporous Polymer Matrix Composites for Daytime Radiative Cooling.** *Nano letters*
  Zhou, K. n., Li, W. n., Patel, B. B., Tao, R. n., Chang, Y. n., Fan, S. n., Diao, Y. n., Cai, L. n.
  2021
- **Exterior tuning and switching of non-equilibrium Casimir force** *JOURNAL OF THE OPTICAL SOCIETY OF AMERICA B-OPTICAL PHYSICS*
  Iizuka, H., Fan, S.

2021; 38 (1): 151–58

- **Nonreciprocity in Bianisotropic Systems with Uniform Time Modulation.** *Physical review letters*
  Wang, X., Ptitcyn, G., Asadchy, V. S., Díaz-Rubio, A., Mirmoosa, M. S., Fan, S., Tretyakov, S. A.
  2020; 125 (26): 266102
- **Nonreciprocity in Bianisotropic Systems with Uniform Time Modulation** *PHYSICAL REVIEW LETTERS*
  Wang, X., Ptitcyn, G., Asadchy, V. S., Diaz-Rubio, A., Mirmoosa, M. S., Fan, S., Tretyakov, S. A.
  2020; 125 (26)
- **Inference in artificial intelligence with deep optics and photonics.** *Nature*
  Wetzstein, G., Ozcan, A., Gigan, S., Fan, S., Englund, D., Soljacic, M., Denz, C., Miller, D. A., Psaltis, D.
  2020; 588 (7836): 39–47
- **Radiative Thermal Router Based on Tunable Magnetic Weyl Semimetals** *ACS PHOTONICS*
  Guo, C., Zhao, B., Huang, D., Fan, S.
  2020; 7 (11): 3257–63
- **Scalable and hierarchically designed polymer film as a selective thermal emitter for high-performance all-day radiative cooling.** *Nature nanotechnology*
  Li, D., Liu, X., Li, W., Lin, Z., Zhu, B., Li, Z., Li, J., Li, B., Fan, S., Xie, J., Zhu, J.
  2020
- **Operating modes of dual-grating dielectric laser accelerators** *PHYSICAL REVIEW ACCELERATORS AND BEAMS*
  Black, D. S., Zhao, Z., Leedle, K. J., Miao, Y., Byer, R. L., Fan, S., Solgaard, O.
  2020; 23 (11)
- **Beating absorption in solid-state high harmonics** *COMMUNICATIONS PHYSICS*
  Liu, H., Vampa, G., Zhang, J., Shi, Y., Buddhiraju, S., Fan, S., Vuckovic, J., Bucksbaum, P. H., Reis, D. A.
  2020; 3 (1)
- **Tutorial on Electromagnetic Nonreciprocity and its Origins** *PROCEEDINGS OF THE IEEE*
  Asadchy, V. S., Mirmoosa, M., Diaz-Rubio, A., Fan, S., Tretyakov, S. A.
  2020; 108 (10): 1684–1727
- **Design of a multichannel photonic crystal dielectric laser accelerator** *PHOTONICS RESEARCH*
  Zhao, Z., Black, D. S., England, R., Hughes, T. W., Miao, Y., Solgaard, O., Byer, R. L., Fan, S.
  2020; 8 (10): 1586–98
- **Integrated Nonreciprocal Photonic Devices With Dynamic Modulation** *PROCEEDINGS OF THE IEEE*
  Williamson, B. D., Minkov, M., Dutt, A., Wang, J., Song, A. Y., Fan, S.
  2020; 108 (10): 1759–84
- **Doubly resonant second-harmonic generation of a vortex beam from a bound state in the continuum** *OPTICA*
  Wang, J., Clementi, M., Minkov, M., Barone, A., Carlin, J., Grandjean, N., Gerace, D., Fan, S., Galli, M., Houdre, R.
  2020; 7 (9): 1126–32
- **Squeeze free space with nonlocal flat optics** *OPTICA*
  Guo, C., Wang, H., Fan, S.
  2020; 7 (9): 1133–38
- **Inverse Design of Lightweight Broadband Reflector for Relativistic Lightsail Propulsion** *ACS PHOTONICS*
  Jin, W., Li, W., Orenstein, M., Fan, S.
  2020; 7 (9): 2350–55
- **Creating an Eco-Friendly Building Coating with Smart Subambient Radiative Cooling.** *Advanced materials (Deerfield Beach, Fla.)*
  Xue, X., Qiu, M., Li, Y., Zhang, Q. M., Li, S., Yang, Z., Feng, C., Zhang, W., Dai, J., Lei, D., Jin, W., Xu, L., Zhang, et al
  2020: e1906751
- **Analytic and geometric properties of scattering from periodically modulated quantum-optical systems** *PHYSICAL REVIEW A*
  Trivedi, R., White, A., Fan, S., Vuckovic, J.

2020; 102 (3)

- **Parallel Programming of an Arbitrary Feedforward Photonic Network** *IEEE JOURNAL OF SELECTED TOPICS IN QUANTUM ELECTRONICS*
  Pai, S., Williamson, I. A. D., Hughes, T. W., Minkov, M., Solgaard, O., Fan, S., Miller, D. A. B.
  2020; 26 (5)
- **Creating locally interacting Hamiltonians in the synthetic frequency dimension for photons** *PHOTONICS RESEARCH*
  Yuan, L., Dutt, A., Qin, M., Fan, S., Chen, X.
  2020; 8 (9): B8–B14
- **Experimental demonstration of silicon photonic devices optimized by a flexible and deterministic pixel-by-pixel technique** *APPLIED PHYSICS LETTERS*
  Boutami, S., Hassan, K., Dupre, C., Baud, L., Fan, S.
  2020; 117 (7)
- **Maximal nighttime electrical power generation via optimal radiative cooling** *OPTICS EXPRESS*
  Fan, L., Li, W., Jin, W., Orenstein, M., Fan, S.
  2020; 28 (17): 25460–70
- **Design Principles of Apodized Grating Couplers** *JOURNAL OF LIGHTWAVE TECHNOLOGY*
  Zhao, Z., Fan, S.
  2020; 38 (16): 4435–46
- **Theoretical constraints on reciprocal and non-reciprocal many-body radiative heat transfer** *PHYSICAL REVIEW B*
  Guo, C., Fan, S.
  2020; 102 (8)
- **Single-Photon Transport in a Topological Waveguide from a Dynamically Modulated Photonic System** *PHYSICAL REVIEW APPLIED*
  Wang, L., Yuan, L., Chen, X., Fan, S.
  2020; 14 (1)
- **PT-Symmetric Topological Edge-Gain Effect.** *Physical review letters*
  Song, A. Y., Sun, X. Q., Dutt, A., Minkov, M., Wojcik, C., Wang, H., Williamson, I. A., Orenstein, M., Fan, S.
  2020; 125 (3): 033603
- **Two-level quantum system as a macroscopic scatterer for ultraconfined two-dimensional photonic modes** *PHYSICAL REVIEW A*
  Rituraj, Orenstein, M., Fan, S.
  2020; 102 (1)
- **Inverse Design of Photonic Crystals through Automatic Differentiation** *ACS PHOTONICS*
  Minkov, M., Williamson, I. A. D., Andreani, L. C., Gerace, D., Lou, B., Song, A. Y., Hughes, T. W., Fan, S.
  2020; 7 (7): 1729–41
- **PT-Symmetric Topological Edge-Gain Effect** *PHYSICAL REVIEW LETTERS*
  Song, A. Y., Sun, X., Dutt, A., Minkov, M., Wojcik, C., Wang, H., Williamson, I., Orenstein, M., Fan, S.
  2020; 125 (3)
- **Bounds for Scattering from Absorptionless Electromagnetic Structures** *PHYSICAL REVIEW APPLIED*
  Trivedi, R., Angeris, G., Su, L., Boyd, S., Fan, S., Vuckovic, J.
  2020; 14 (1)
- **Nonreciprocal Metamaterial Obeying Time-Reversal Symmetry.** *Physical review letters*
  Buddhiraju, S., Song, A., Papadakis, G. T., Fan, S.
  2020; 124 (25): 257403
- **Nonreciprocal Metamaterial Obeying Time-Reversal Symmetry** *PHYSICAL REVIEW LETTERS*
  Buddhiraju, S., Song, A., Papadakis, G. T., Fan, S.
  2020; 124 (25)
- **Alice strings in non-Hermitian systems** *PHYSICAL REVIEW RESEARCH*
  Sun, X., Wojcik, C. C., Fan, S., Bzdusek, T.

2020; 2 (2)

- **Sub-Wavelength Passive Optical Isolators Using Photonic Structures Based on Weyl Semimetals** *ADVANCED OPTICAL MATERIALS*
  Asadchy, V. S., Guo, C., Zhao, B., Fan, S.
  2020
- **Controlling the dopant profile for SRH suppression at low current densities in lambda approximate to 1330nm GaInAsP light-emitting diodes** *APPLIED PHYSICS LETTERS*
  Santhanam, P., Li, W., Zhao, B., Rogers, C., Gray, D., Jahelka, P., Atwater, H. A., Fan, S.
  2020; 116 (20)
- **Homotopy characterization of non-Hermitian Hamiltonians** *PHYSICAL REVIEW B*
  Wojcik, C. C., Sun, X., Bzdusek, T., Fan, S.
  2020; 101 (20)
- **Retarded Charge-Carrier Recombination in Photoelectrochemical Cells from Plasmon-Induced Resonance Energy Transfer** *ADVANCED ENERGY MATERIALS*
  Choi, Y., Lee, B., Jung, M., Han, H., Kim, S., Chen, K., Kim, D., Heinz, T. F., Fan, S., Lee, J., Yi, G., Kim, J., Park, et al
  2020
- **Robust and efficient wireless power transfer using a switch-mode implementation of a nonlinear parity-time symmetric circuit** *NATURE ELECTRONICS*
  Assawaworrarit, S., Fan, S.
  2020
- **Experimental realization of arbitrary activation functions for optical neural networks** *OPTICS EXPRESS*
  Frad, M., Williamson, I. A. D., Edwards, M., Liu, K., Pai, S., Bartlett, B., Minkov, M., Hughes, T. W., Fan, S., Nguyen, T.
  2020; 28 (8): 12138–48
- **Non-reciprocal polarization rotation using dynamic refractive index modulation** *OPTICS EXPRESS*
  Wang, J., Shi, Y., Fan, S.
  2020; 28 (8): 11974–82
- **Inverse-designed non-reciprocal pulse router for chip-based LiDAR** *NATURE PHOTONICS*
  Yang, K., Skarda, J., Cotrufo, M., Dutt, A., Ahn, G., Sawaby, M., Vercruysse, D., Arbabian, A., Fan, S., Alu, A., Vuckovic, J.
  2020
- **Meron Spin Textures in Momentum Space.** *Physical review letters*
  Guo, C., Xiao, M., Guo, Y., Yuan, L., Fan, S.
  2020; 124 (10): 106103
- **Meron Spin Textures in Momentum Space** *PHYSICAL REVIEW LETTERS*
  Guo, C., Xiao, M., Guo, Y., Yuan, L., Fan, S.
  2020; 124 (10)
- **Fundamental Limits of the Dew-Harvesting Technology** *NANOSCALE AND MICROSCALE THERMOPHYSICAL ENGINEERING*
  Dong, M., Zhang, Z., Shi, Y., Zhao, X., Fan, S., Chen, Z.
  2020
- **Nonreciprocal radiative heat transfer between two planar bodies** *PHYSICAL REVIEW B*
  Fan, L., Guo, Y., Papadakis, G. T., Zhao, B., Zhao, Z., Buddhiraju, S., Orenstein, M., Fan, S.
  2020; 101 (8)
- **Compact Incoherent Image Differentiation with Nanophotonic Structures** *ACS PHOTONICS*
  Wang, H., Guo, C., Zhao, Z., Fan, S.
  2020; 7 (2): 338–43
- **Determining the optimal learning rate in gradient-based electromagnetic optimization using the Shanks transformation in the Lippmann-Schwinger formalism** *OPTICS LETTERS*
  Boutami, S., Zhao, N., Fan, S.
  2020; 45 (3): 595–98

- **Absence of unidirectionally propagating surface plasmon-polaritons at nonreciprocal metal-dielectric interfaces.** *Nature communications*
  Buddhiraju, S. n., Shi, Y. n., Song, A. n., Wojcik, C. n., Minkov, M. n., Williamson, I. A., Dutt, A. n., Fan, S. n.
  2020; 11 (1): 674
- **Penetration Depth Engineering in Plasmonic Metafilms for Enhanced Reflection and Confinement**
  Zhao, N., Williamson, I. A. D., Zhao, Z., Boutami, S., Fan, S., IEEE
  IEEE.2020
- **Silicon nitride waveguide as a power delivery component for dielectric laser accelerators**
  Zhao, Z., Tan, S., Urbanek, K., Hughes, T., Lee, Y., Fan, S., Harris, J. S., Byer, R. L., IEEE
  IEEE.2020
- **Parallel Fault-Tolerant Programming and Optimization of Photonic Neural Networks**
  Pai, S., Williamson, I. A. D., Minkov, M., Hughes, T. W., Solgaard, O., Fan, S., Miller, D. A. B., IEEE
  IEEE.2020
- **Design of a multi-channel photonic crystal dielectric laser accelerator**
  Zhao, Z., Black, D. S., England, R., Hughes, T. W., Miao, Y., Solgaard, O., Byer, R. L., Fan, S., IEEE
  IEEE.2020
- **Higher-order topological insulators in synthetic dimensions.** *Light, science & applications*
  Dutt, A., Minkov, M., Williamson, I. A., Fan, S.
  2020; 9: 131
- **Reprogrammable Electro-Optic Nonlinear Activation Functions for Optical Neural Networks** *IEEE JOURNAL OF SELECTED TOPICS IN QUANTUM ELECTRONICS*
  Williamson, I. A. D., Hughes, T. W., Minkov, M., Bartlett, B., Pai, S., Fan, S.
  2020; 26 (1)
- **Thermodynamic limits for simultaneous energy harvesting from the hot sun and cold outer space.** *Light, science & applications*
  Li, W. n., Buddhiraju, S. n., Fan, S. n.
  2020; 9: 68
- **Universal programmable photonic architecture for quantum information processing** *Physical Review A*
  Bartlett, B., Fan, S.
  2020; 101 (4): 042319
- **Broadening Near-Field Emission for Performance Enhancement in Thermophotovoltaics.** *Nano letters*
  Papadakis, G. T., Buddhiraju, S. n., Zhao, Z. n., Zhao, B. n., Fan, S. n.
  2020
- **Efficient second harmonic generation in a doubly resonant photonic crystal cavity based on a bound state in the continuum**
  Wang, J., Clementi, M., Barone, A., Minicoy, M., Carlin, J., Grandjean, N., Fan, S., Houdre, R., Gerace, D., Galli, M., IEEE
  IEEE.2020
- **Terrestrial radiative cooling: Using the cold universe as a renewable and sustainable energy source.** *Science (New York, N.Y.)*
  Yin, X., Yang, R., Tan, G., Fan, S.
  2020; 370 (6518): 786–91
- **Experimental demonstration of acoustic semimetal with topologically charged nodal surface.** *Science advances*
  Xiao, M. n., Ye, L. n., Qiu, C. n., He, H. n., Liu, Z. n., Fan, S. n.
  2020; 6 (8): eaav2360
- **Photonic Quantum Programmable Gate Arrays**
  Bartlett, B., Fan, S., IEEE
  IEEE.2020
- **Nonreciprocal radiative heat transfer between two planar bodies**
  Fan, L., Guo, Y., Papadakis, G. T., Zhao, B., Zhao, Z., Buddhiraju, S., Orenstein, M., Fan, S., IEEE
  IEEE.2020

- **Doubly resonant photonic crystal cavity based on a bound state in the continuum for efficient second harmonic generation**
  Minkov, M., Fan, S., Wang, J., Hodre, R., Clementi, M., Barone, A., Gerace, D., Galli, M., IEEE
  IEEE.2020
- **Dynamics for encircling an exceptional point in a nonlinear non-Hermitian system**
  Wang, H., Assawaworrarit, S., Fan, S., IEEE
  IEEE.2020
- **Active photonic cooling using time-modulated thermal emission**
  Buddhiraju, S., Li, W., Fan, S., IEEE
  IEEE.2020
- **Tunable Nonlinear Activation Functions for Optical Neural Networks**
  Williamson, I. A. D., Hughes, T. W., Minkov, M., Bartlett, B., Pai, S., Fan, S., IEEE
  IEEE.2020
- **Inverse-designed optical interconnect based on multimode photonics and mode-division multiplexing**
  Yang, K., Skarda, J., Guidry, M. A., Dutt, A., Fan, S., Vuckovic, J., IEEE
  IEEE.2020
- **Topological Behaviors in Networks of Time-Multiplexed Optical Resonators**
  Leefmans, C., Dutt, A., Williams, J., Yuan, L., Fan, S., Marandi, A., IEEE
  IEEE.2020
- **Recurrent Machine Learning and Computing with Nonlinear Optical Waves**
  Williamson, I. A. D., Hughes, T. W., Minkov, M., Fan, S., IEEE
  IEEE.2020
- **Broadband Linear-to-Circular Polarization Conversion Enabled by Birefringent Reflective Metasurfaces**
  Chang, C., Zhao, Z., Li, D., Taylor, A. J., Fan, S., Chen, H., IEEE
  IEEE.2020
- **PT -symmetric topological edge-gain effect**
  Song, A. Y., Sun, X., Dutt, A., Minkov, M., Wojcik, C., Wang, H., Williamson, I., Orenstein, M., Fan, S., IEEE
  IEEE.2020
- **Penetration Depth Engineering in Plasmonic Metafilms for Enhanced Reflection and Confinement**
  Zhao, N., Williamson, I. A. D., Zhao, Z., Boutami, S., Fan, S., IEEE
  IEEE.2020
- **Silicon nitride waveguide as a power delivery component for dielectric laser accelerators**
  Zhao, Z., Tan, S., Urbanek, K., Hughes, T., Lee, Y., Fan, S., Harris, J. S., Byer, R. L., IEEE
  IEEE.2020
- **Parallel Fault-Tolerant Programming and Optimization of Photonic Neural Networks**
  Pai, S., Williamson, I. A. D., Minkov, M., Hughes, T. W., Solgaard, O., Fan, S., Miller, D. A. B., IEEE
  IEEE.2020
- **Design of a multi-channel photonic crystal dielectric laser accelerator**
  Zhao, Z., Black, D. S., England, R., Hughes, T. W., Miao, Y., Solgaard, O., Byer, R. L., Fan, S., IEEE
  IEEE.2020
- **Higher-order topological insulators in synthetic dimensions.** *Light, science & applications*
  Dutt, A., Minkov, M., Williamson, I. A., Fan, S.
  2020; 9: 131
- **Reprogrammable Electro-Optic Nonlinear Activation Functions for Optical Neural Networks** *IEEE JOURNAL OF SELECTED TOPICS IN QUANTUM ELECTRONICS*
  Williamson, I. A. D., Hughes, T. W., Minkov, M., Bartlett, B., Pai, S., Fan, S.
  2020; 26 (1)

- **Broadband Linear-to-Circular Polarization Conversion Enabled by Birefringent Off-Resonance Reflective Metasurfaces.** *Physical review letters*
  Chang, C. C., Zhao, Z., Li, D., Taylor, A. J., Fan, S., Chen, H. T.
  2019; 123 (23): 237401
- **Broadband Linear-to-Circular Polarization Conversion Enabled by Birefringent Off-Resonance Reflective Metasurfaces** *PHYSICAL REVIEW LETTERS*
  Chang, C., Zhao, Z., Li, D., Taylor, A. J., Fan, S., Chen, H.
  2019; 122 (23)
- **Wave physics as an analog recurrent neural network.** *Science advances*
  Hughes, T. W., Williamson, I. A., Minkov, M., Fan, S.
  2019; 5 (12): eaay6946
- **Ultrafast pyroelectric photodetection with on-chip spectral filters.** *Nature materials*
  Stewart, J. W., Vella, J. H., Li, W., Fan, S., Mikkelsen, M. H.
  2019
- **Generating Light from Darkness** *JOULE*
  Raman, A. P., Li, W., Fan, S.
  2019; 3 (11): 2679–86
- **Relation between photon thermal Hall effect and persistent heat current in nonreciprocal radiative heat transfer** *PHYSICAL REVIEW B*
  Guo, C., Guo, Y., Fan, S.
  2019; 100 (20)
- **Rare Earth Doped Optical Fibers with Multi-section Core.** *iScience*
  Huang, C., Geng, J., Luo, T., Han, J., Wang, Q., Liang, R., Fan, S., Jiang, S.
  2019; 22: 423–29
- **Casimir force between two plasmonic metallic plates from a real frequency perspective** *JOURNAL OF THE OPTICAL SOCIETY OF AMERICA B-OPTICAL PHYSICS*
  Iizuka, H., Fan, S.
  2019; 36 (11): 2981–88
- **Forward-Mode Differentiation of Maxwell's Equations** *ACS PHOTONICS*
  Hughes, T. W., Williamson, I. A. D., Minkov, M., Fan, S.
  2019; 6 (11): 3010–16
- **Nighttime radiative cooling in hot and humid climates** *OPTICS EXPRESS*
  Dong, M., Chen, N., Zhao, X., Fan, S., Chen, Z.
  2019; 27 (22): 31587–98
- **Efficient pixel-by-pixel optimization of photonic devices utilizing the Dyson's equation in a Green's function formalism: Part II. Implementation using standard electromagnetic solvers** *JOURNAL OF THE OPTICAL SOCIETY OF AMERICA B-OPTICAL PHYSICS*
  Boutami, S., Fan, S.
  2019; 36 (9): 2387–94
- **Near-complete violation of Kirchhoff's law of thermal radiation with a 0.3 T magnetic field** *OPTICS LETTERS*
  ZHAO, B., Shi, Y., Wang, J., Zha, Z., Zhao, N., Fan, S.
  2019; 44 (17): 4203–6
- **Efficient pixel-by-pixel optimization of photonic devices utilizing the Dyson's equation in a Green's function formalism: Part I. Implementation with the method of discrete dipole approximation** *JOURNAL OF THE OPTICAL SOCIETY OF AMERICA B-OPTICAL PHYSICS*
  Boutami, S., Fan, S.
  2019; 36 (9): 2378–86
- **Wave optics light-trapping theory: mathematical justification and ultimate limit on enhancement** *JOURNAL OF THE OPTICAL SOCIETY OF AMERICA B-OPTICAL PHYSICS*
  Wang, K., Guo, Y., Fan, S.

2019; 36 (9): 2414–22

- **Doubly resonant chi((2)) nonlinear photonic crystal cavity based on a bound state in the continuum** *OPTICA*
  Minkov, M., Gerace, D., Fan, S.
  2019; 6 (8): 1039–45
- **High-Temperature Polarization-Free III-Nitride Solar Cells with Self-Cooling Effects** *ACS PHOTONICS*
  Huang, X., Li, W., Fu, H., Li, D., Zhang, C., Chen, H., Fang, Y., Fu, K., DenBaars, S. P., Nakamura, S., Goodnick, S. M., Ning, C., Fan, et al
  2019; 6 (8): 2096–2103
- **Penetration Depth Reduction with Plasmonic Metafilms** *ACS PHOTONICS*
  Zhao, N. Z., Williamson, I. A. D., Zhao, Z., Boutami, S., Fan, S.
  2019; 6 (8): 2049–55
- **Accelerating adjoint variable method based photonic optimization with Schur complement domain decomposition** *OPTICS EXPRESS*
  Zhao, N. Z., Boutami, S., Fan, S.
  2019; 27 (15): 20711–19
- **Experimental band structure spectroscopy along a synthetic dimension.** *Nature communications*
  Dutt, A., Minkov, M., Lin, Q., Yuan, L., Miller, D. A., Fan, S.
  2019; 10 (1): 3122
- **Arbitrary Polarization Conversion with a Photonic Crystal Slab** *ADVANCED OPTICAL MATERIALS*
  Guo, Y., Xiao, M., Zhou, Y., Fan, S.
  2019; 7 (14)
- **Photon Blockade in Weakly Driven Cavity Quantum Electrodynamics Systems with Many Emitters.** *Physical review letters*
  Trivedi, R., Radulaski, M., Fischer, K. A., Fan, S., Vučković, J.
  2019; 122 (24): 243602
- **Temperature Regulation in Colored Infrared-Transparent Polyethylene Textiles** *JOULE*
  Cai, L., Peng, Y., Xu, J., Zhou, C., Zhou, C., Wu, P., Lin, D., Fan, S., Cui, Y.
  2019; 3 (6): 1478–86
- **Reconfigurable Photonic Circuit for Controlled Power Delivery to Laser-Driven Accelerators on a Chip** *PHYSICAL REVIEW APPLIED*
  Hughes, T. W., England, R., Fan, S.
  2019; 11 (6)
- **Implications of exceptional points for few-photon transport in waveguide quantum electrodynamics** *PHYSICAL REVIEW A*
  Xu, S., Fan, S.
  2019; 99 (6)
- **Self-sustaining thermophotonic circuits.** *Proceedings of the National Academy of Sciences of the United States of America*
  Zhao, B., Buddhiraju, S., Santhanam, P., Chen, K., Fan, S.
  2019
- **Broadband Optical Switch based on an Achromatic Photonic Gauge Potential in Dynamically Modulated Waveguides** *PHYSICAL REVIEW APPLIED*
  Williamson, I. A. D., Fan, S.
  2019; 11 (5)
- **Compact dynamic optical isolator based on tandem phase modulators** *OPTICS LETTERS*
  Lin, Q., Wang, J., Fan, S.
  2019; 44 (9): 2240–43
- **Experimental demonstration of energy harvesting from the sky using the negative illumination effect of a semiconductor photodiode** *APPLIED PHYSICS LETTERS*
  Ono, M., Santhanam, P., Li, W., Zhao, B., Fan, S.
  2019; 114 (16)

- **Laterally confined photonic crystal surface emitting laser incorporating monolayer tungsten disulfide** *NPJ 2D MATERIALS AND APPLICATIONS*
  Ge, X., Minkov, M., Fan, S., Li, X., Zhou, W.
  2019; 3
- **Anti-parity-time symmetry in diffusive systems** *SCIENCE*
  Li, Y., Peng, Y., Han, L., Miri, M., Li, W., Xiao, M., Zhu, X., Zhao, J., Alu, A., Fan, S., Qiu, C.
  2019; 364 (6436): 170-+
- **Connection of temporal coupled-mode-theory formalisms for a resonant optical system and its time-reversal conjugate** *PHYSICAL REVIEW A*
  Zhao, Z., Guo, C., Fan, S.
  2019; 99 (3)
- **Photonic Gauge Potential in One Cavity with Synthetic Frequency and Orbital Angular Momentum Dimensions.** *Physical review letters*
  Yuan, L., Lin, Q., Zhang, A., Xiao, M., Chen, X., Fan, S.
  2019; 122 (8): 083903
- **Gate-Tunable Near-Field Heat Transfer** *ACS PHOTONICS*
  Papadakis, G. T., Zhao, B., Buddhiraju, S., Fan, S.
  2019; 6 (3): 709–19
- **Scattering of electromagnetic waves by cylinder inside uniaxial hyperbolic medium** *OPTICS EXPRESS*
  Rituraj, Catrysse, P. B., Fan, S.
  2019; 27 (4): 3991–4003
- **Modal approach to optical forces between waveguides as derived by transformation optics formalism** *OPTICS LETTERS*
  Iizuka, H., Fan, S.
  2019; 44 (4): 867–70
- **Dynamics for encircling an exceptions point in a nonlinear non-Hermitian system** *OPTICS LETTERS*
  Wang, H., Assawaworrarit, S., Fan, S.
  2019; 44 (3): 638–41
- **High Reflection from a One-Dimensional Array of Graphene Nanoribbons** *ACS PHOTONICS*
  Zhao, N., Zhao, Z., Williamson, I. A. D., Boutami, S., Zhao, B., Fan, S.
  2019; 6 (2): 339–44
- **Simultaneously and Synergistically Harvest Energy from the Sun and Outer Space** *JOULE*
  Chen, Z., Zhu, L., Li, W., Fan, S.
  2019; 3 (1): 101–10
- **Silicon nitride waveguide as a power delivery component for on-chip dielectric laser accelerators** *OPTICS LETTERS*
  Tan, S., Zhao, Z., Urbanek, K., Hughes, T., Lee, Y., Fan, S., Harris, J. S., Byer, R. L.
  2019; 44 (2): 335–38
- **Direction-dependent parity-time phase transition and nonreciprocal amplification with dynamic gain-loss modulation** *PHYSICAL REVIEW A*
  Song, A. Y., Shi, Y., Lin, Q., Fan, S.
  2019; 99 (1)
- **Subwavelength angle-sensing photodetectors inspired by internally coupled ears in small animals**
  Yi, S., Zhou, M., Yu, Z., Fan, P., Behdad, N., Lin, D., Wang, K., Fan, S., Brongersm, M.
  edited by Panchapakesan, B., Attias, A. J.
  SPIE-INT SOC OPTICAL ENGINEERING.2019
- **Optically pumped 1 mu m low threshold photonic crystal surface emitting lasers grown on GaAs substrate**
  Kalapala, A. R. K., Yeom, S., Addamane, S. J., Reilly, K. J., Song, A., Gibson, R., Balakrishnan, G., Bedford, R., Fan, S., Zhou, W., IEEE
  IEEE.2019
- **High Reflection from a One-Dimensional Array of Graphene Nanoribbons**

Zhao, N., Zhao, Z., Williamson, I. A. D., Boutami, S., Zhao, B., Fan, S., IEEE
IEEE.2019

- **Absence of frequency ranges of undirectional propagation in nonreciprocal plasmonics**
  Buddhiraju, S., Shi, Y., Song, A., Wojcik, C., Minkov, M., Williamson, I. A. D., Dutt, A., Fan, S., IEEE
  IEEE.2019
- **Experimental Band Structure Spectroscopy along the Synthetic Dimension**
  Dutt, A., Minkov, M., Lin, Q., Yuan, L., Miller, D. A. B., Fan, S., IEEE
  IEEE.2019
- **Training of Photonic Neural Networks through In Situ Backpropagation**
  Hughes, T. W., Minkov, M., Williamson, I. A. D., Shi, Y., Fan, S., IEEE
  IEEE.2019
- **Adjoint-based inverse design of nonlinear nanophotonic devices**
  Hughes, T. W., Minkov, M., Williamson, I. A. D., Fan, S., IEEE
  IEEE.2019
- **Lossless Zero-Index Guided Modes via Bound States in the Continuum**
  Minkov, M., Williamson, I. A. D., Xiao, M., Fan, S., IEEE
  IEEE.2019
- **Adjoint-based optimization of active nanophotonic devices**
  Wang, J., Shi, Y., Hughes, T., Zhao, Z., Fan, S., IEEE
  IEEE.2019
- **Broadband Switches Using Photonic Aharonov-Bohm Interferometers and Dynamic Modulation**
  Williamson, I. A. D., Fan, S., IEEE
  IEEE.2019
- **Pulse shortening in two coupled rings under amplitude modulations with parity-time symmetry**
  Yuan, L., Lin, Q., Xiao, M., Dutt, A., Fan, S., IEEE
  IEEE.2019
- **Optical computing of spatial differentiation without Fourier optics**
  Zhu, T., Lou, Y., Zhou, Y., Zhang, J., Huang, J., Li, Y., Luo, H., Wen, S., Zhu, S., Gong, Q., Ye, H., Qiu, M., Fan, et al
  IEEE.2019
- **Design of a tapered slot waveguide dielectric laser accelerator for sub-relativistic electrons**
  Zhao, Z., Hughes, T. W., Tan, S., Deng, H., Sapra, N., England, R., Vuckovic, J., Harris, J. S., Byer, R. L., Fan, S., IEEE
  IEEE.2019
- **Scattering of electromagnetic waves by cylinder inside uniaxial hyperbolic medium**
  Rituraj, Catrysse, P. B., Fan, S.
  edited by Engheta, N., Noginov, M. A., Zheludev, N. I.
  SPIE-INT SOC OPTICAL ENGINEERING.2019
- **Optical Image Processing Using Photonic Crystal Slab**
  Guo, C., Xiao, M., Minkov, M., Shi, Y., Fan, S.
  edited by Adibi, A., Lin, S. Y., Scherer, A.
  SPIE-INT SOC OPTICAL ENGINEERING.2019
- **Thermal meta-device in analogue of zero-index photonics** *NATURE MATERIALS*
  Li, Y., Zhu, K., Peng, Y., Li, W., Yang, T., Xu, H., Chen, H., Zhu, X., Fan, S., Qiu, C.
  2019; 18 (1): 48-+
- **Fano resonance photonic crystal filters and modulators** *PHOTONIC CRYSTAL METASURFACE OPTOELECTRONICS*
  Zhou, W., Fan, S.
  edited by Zhou, W., Fan, S.

2019; 100: 149–88

- **Optical image processing using photonic crystal slab** *PHOTONIC CRYSTAL METASURFACE OPTOELECTRONICS*
  Guo, C., Fan, S.
  edited by Zhou, W., Fan, S.
  2019; 100: 93–114
- **Direct Object Recognition Without Line-of-Sight Using Optical Coherence**
  Lei, X., He, L., Tan, Y., Wang, K., Wang, X., Du, Y., Fan, S., Yu, Z., IEEE Comp Soc
  IEEE.2019: 11729–38
- **Anti-parity-time symmetry in diffusive systems.** *Science (New York, N.Y.)*
  Li, Y., Peng, Y., Han, L., Miri, M., Li, W., Xiao, M., Zhu, X., Zhao, J., Alo, A., Fan, S., Qiu, C.
  2019; 364 (6436): 170–73
- **Electronically programmable photonic molecule** *NATURE PHOTONICS*
  Zhang, M., Wang, C., Hu, Y., Shams-Ansari, A., Ren, T., Fan, S., Loncar, M.
  2019; 13 (1): 36-+
- **A single photonic cavity with two independent physical synthetic dimensions.** *Science (New York, N.Y.)*
  Dutt, A. n., Lin, Q. n., Yuan, L. n., Minkov, M. n., Xiao, M. n., Fan, S. n.
  2019
- **Experimental Demonstration of Dynamical Input Isolation in Nonadiabatically Modulated Photonic Cavities** *ACS PHOTONICS*
  Dutt, A., Minkov, M., Lin, Q., Yuan, L., Miller, D. A. B., Fan, S.
  2019; 6 (1): 162–69
- **Fano resonance principles in photonic crystal slabs** *PHOTONIC CRYSTAL METASURFACE OPTOELECTRONICS*
  Zhou, W., Fan, S.
  edited by Zhou, W., Fan, S.
  2019; 100: 1–12
- **Zero-Index Bound States in the Continuum.** *Physical review letters*
  Minkov, M., Williamson, I. A., Xiao, M., Fan, S.
  2018; 121 (26): 263901
- **Thermal meta-device in analogue of zero-index photonics.** *Nature materials*
  Li, Y., Zhu, K., Peng, Y., Li, W., Yang, T., Xu, H., Chen, H., Zhu, X., Fan, S., Qiu, C.
  2018
- **Adjoint Method and Inverse Design for Nonlinear Nanophotonic Devices** *ACS PHOTONICS*
  Hughes, T. W., Minkov, M., Williamson, I. A. D., Fan, S.
  2018; 5 (12): 4781–87
- **Subwavelength angle-sensing photodetectors inspired by directional hearing in small animals (vol 13, pg 1143, 2018)** *NATURE NANOTECHNOLOGY*
  Yi, S., Zhou, M., Yu, Z., Fan, P., Behdad, N., Lin, D., Wang, K., Fan, S., Brongersma, M.
  2018; 13 (12): 1191
- **Subwavelength angle-sensing photodetectors inspired by directional hearing in small animals** *NATURE NANOTECHNOLOGY*
  Yi, S., Zhou, M., Yu, Z., Fan, P., Behdad, N., Lin, D., Wang, K., Fan, S., Brongersma, M.
  2018; 13 (12): 1143-+
- **Synthetic dimension in photonics** *OPTICA*
  Yuan, L., Lin, Q., Xiao, M., Fan, S.
  2018; 5 (11): 1396–1405
- **Author Correction: Subwavelength angle-sensing photodetectors inspired by directional hearing in small animals.** *Nature nanotechnology*
  Yi, S., Zhou, M., Yu, Z., Fan, P., Behdad, N., Lin, D., Wang, K. X., Fan, S., Brongersma, M.
  2018

- **Three-Dimensional Chiral Lattice Fermion in Floquet Systems.** *Physical review letters*
  Sun, X. Q., Xiao, M., Bzdušek, T., Zhang, S. C., Fan, S.
  2018; 121 (19): 196401
- **Three-Dimensional Chiral Lattice Fermion in Floquet Systems** *PHYSICAL REVIEW LETTERS*
  Sun, X., Xiao, M., Bzdusek, T., Zhang, S., Fan, S.
  2018; 121 (19)
- **Nonreciprocal Optical Dissipation Based on Direction-Dependent Rabi Splitting** *IEEE JOURNAL OF SELECTED TOPICS IN QUANTUM ELECTRONICS*
  Shi, Y., Lin, Q., Minkov, M., Fan, S.
  2018; 24 (6)
- **Impact of objective bandwidth and frequency sampling density on search landscape structure and search performance in design optimization of optical structures** *JOURNAL OF OPTICS*
  Verweij, S., Fan, S.
  2018; 20 (11)
- **Nonreciprocal Photonics Without Magneto-Optics** *IEEE ANTENNAS AND WIRELESS PROPAGATION LETTERS*
  Fan, S., Shi, Y., Lin, Q.
  2018; 17 (11): 1948–52
- **Generate tensor network state by sequential single-photon scattering in waveguide QED systems** *APL PHOTONICS*
  Xu, S., Fan, S.
  2018; 3 (11)
- **Subwavelength angle-sensing photodetectors inspired by directional hearing in small animals.** *Nature nanotechnology*
  Yi, S., Zhou, M., Yu, Z., Fan, P., Behdad, N., Lin, D., Wang, K. X., Fan, S., Brongersma, M.
  2018
- **Few-photon scattering and emission from low-dimensional quantum systems** *PHYSICAL REVIEW B*
  Trivedi, R., Fischer, K., Xu, S., Fan, S., Vuckovic, J.
  2018; 98 (14)
- **Photonic thermal management of coloured objects.** *Nature communications*
  Li, W., Shi, Y., Chen, Z., Fan, S.
  2018; 9 (1): 4240
- **Photonic thermal management of coloured objects** *NATURE COMMUNICATIONS*
  Li, W., Shi, Y., Chen, Z., Fan, S.
  2018; 9
- **Unidirectional light transport in dynamically modulated waveguides** *PHYSICAL REVIEW APPLIED*
  Minkov, M., Fan, S.
  2018; 10 (4)
- **MESH: A free electromagnetic solver for far-field and near-field radiative heat transfer for layered periodic structures** *COMPUTER PHYSICS COMMUNICATIONS*
  Chen, K., Zhao, B., Fan, S.
  2018; 231: 163–72
- **A three-dimensional photonic topological insulator using a two-dimensional ring resonator lattice with a synthetic frequency dimension** *SCIENCE ADVANCES*
  Lin, Q., Sun, X., Xiao, M., Zhang, S., Fan, S.
  2018; 4 (10)
- **Enhanced high-harmonic generation from an all-dielectric metasurface** *NATURE PHYSICS*
  Liu, H., Guo, C., Vampa, G., Zhang, J., Sarmiento, T., Xiao, M., Bucksbaum, P. H., Vuckovic, J., Fan, S., Reis, D. A.
  2018; 14 (10): 1006-+

- **Isotropic wavevector domain image filters by a photonic crystal slab device** *JOURNAL OF THE OPTICAL SOCIETY OF AMERICA A-OPTICS IMAGE SCIENCE AND VISION*
  Guo, C., Xiao, M., Minkov, M., Shi, Y., Fan, S.
  2018; 35 (10): 1685–91
- **A three-dimensional photonic topological insulator using a two-dimensional ring resonator lattice with a synthetic frequency dimension.** *Science advances*
  Lin, Q., Sun, X., Xiao, M., Zhang, S., Fan, S.
  2018; 4 (10): eaat2774
- **Design of a tapered slot waveguide dielectric laser accelerator for sub-relativistic electrons** *OPTICS EXPRESS*
  Zhao, Z., Hughes, T. W., Tan, S., Deng, H., Sapra, N., England, R., Vuckovic, J., Harris, J. S., Byer, R. L., Fan, S.
  2018; 26 (18): 22801–15
- **Self-adaptive radiative cooling based on phase change materials** *OPTICS EXPRESS*
  Ono, M., Chen, K., Li, W., Fan, S.
  2018; 26 (18): A777–A787
- **Spectrally Selective Nanocomposite Textile for Outdoor Personal Cooling** *ADVANCED MATERIALS*
  Cai, L., Song, A. Y., Li, W., Hsu, P., Lin, D., Catrysse, P. B., Liu, Y., Peng, Y., Chen, J., Wang, H., Xu, J., Yang, A., Fan, et al
  2018; 30 (35)
- **Polarization control with dielectric helix metasurfaces and arrays** *OPTICS EXPRESS*
  Karakasoglu, I., Xiao, M., Fan, S.
  2018; 26 (17): 21664–74
- **Pulse shortening in an actively mode-locked laser with parity-time symmetry** *APL PHOTONICS*
  Yuan, L., Lin, Q., Xiao, M., Dutt, A., Fan, S.
  2018; 3 (8)
- **Near-Field Thermophotonic Systems for Low-Grade Waste-Heat Recovery** *NANO LETTERS*
  Zhao, B., Santhanam, P., Chen, K., Buddhiraju, S., Fan, S.
  2018; 18 (8): 5224–30
- **Relation between absorption and emission directivities for dipoles coupled with optical antennas** *PHYSICAL REVIEW A*
  Zhao, Z., Shi, Y., Chen, K., Fan, S.
  2018; 98 (1)
- **First-principles simulation of photonic crystal surface-emitting lasers using rigorous coupled wave analysis** *APPLIED PHYSICS LETTERS*
  Song, A. Y., Kalapala, A., Zhou, W., Fan, S.
  2018; 113 (4)
- **Training of photonic neural networks through in situ backpropagation and gradient measurement** *OPTICA*
  Hughes, T. W., Minkov, M., Shi, Y., Fan, S.
  2018; 5 (7): 864–71
- **Spectrally Selective Nanocomposite Textile for Outdoor Personal Cooling.** *Advanced materials (Deerfield Beach, Fla.)*
  Cai, L., Song, A. Y., Li, W., Hsu, P., Lin, D., Catrysse, P. B., Liu, Y., Peng, Y., Chen, J., Wang, H., Xu, J., Yang, A., Fan, et al
  2018: e1802152
- **Accelerating convergence of iterative solution of finite difference frequency domain problems via schur complement domain decomposition** *OPTICS EXPRESS*
  Zhao, N., Verweij, S., Shin, W., Fan, S.
  2018; 26 (13): 16925–39
- **Effective electric-field force for a photon in a synthetic frequency lattice created in a waveguide modulator** *PHYSICAL REVIEW A*
  Qin, C., Yuan, L., Wang, B., Fan, S., Lu, P.
  2018; 97 (6)
- **Nanophotonic control of thermal radiation for energy applications [Invited]** *OPTICS EXPRESS*

Li, W., Fan, S.
2018; 26 (12): 15995–6021

- **Size Scaling of Photonic Crystal Surface Emitting Lasers on Silicon Substrates** *IEEE PHOTONICS JOURNAL*
  Liu, S., Zhao, D., Ge, X., Reuterskiold-Hedlund, C., Hammar, M., Fan, S., Ma, Z., Zhou, W.
  2018; 10 (3)
- **On-Chip Laser-Power Delivery System for Dielectric Laser Accelerators** *PHYSICAL REVIEW APPLIED*
  Hughes, T. W., Tan, S., Zhao, Z., Sapra, N. V., Leedle, K. J., Deng, H., Miao, Y., Black, D. S., Solgaard, O., Harris, J. S., Vuckovic, J., Byer, R. L., Fan, et al
  2018; 9 (5)
- **Broadband Control of Topological Nodes in Electromagnetic Fields** *PHYSICAL REVIEW LETTERS*
  Song, A. Y., Catrysse, P. B., Fan, S.
  2018; 120 (19): 193903
- **Electroluminescent refrigeration by ultra-efficient GaAs light-emitting diodes** *JOURNAL OF APPLIED PHYSICS*
  Xiao, T., Chen, K., Santhanam, P., Fan, S., Yablonovitch, E.
  2018; 123 (17)
- **Thermodynamic limits of energy harvesting from outgoing thermal radiation** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
  Buddhiraju, S., Santhanam, P., Fan, S.
  2018; 115 (16): E3609–E3615
- **Low index contrast heterostructure photonic crystal cavities with high quality factors and vertical radiation coupling** *APPLIED PHYSICS LETTERS*
  Ge, X., Minkov, M., Fan, S., Li, X., Zhou, W.
  2018; 112 (14)
- **Response to "Comment on 'High-performance near-field electroluminescent refrigeration device consisting of a GaAs light emitting diode and a Si photovoltaic cell'" [J. Appl. Phys. 122, 143104 (2017)]** *JOURNAL OF APPLIED PHYSICS*
  Chen, K., Xiao, T., Santhanam, P., Yablonovitch, E., Fan, S.
  2018; 123 (11)
- **Photonic crystal slab Laplace operator for image differentiation** *OPTICA*
  Guo, C., Xiao, M., Minkov, M., Shi, Y., Fan, S.
  2018; 5 (3): 251–56
- **Synthetic space with arbitrary dimensions in a few rings undergoing dynamic modulation** *PHYSICAL REVIEW B*
  Yuan, L., Xiao, M., Lin, Q., Fan, S.
  2018; 97 (10)
- **Theory of many-body radiative heat transfer without the constraint of reciprocity** *PHYSICAL REVIEW B*
  Zhu, L., Guo, Y., Fan, S.
  2018; 97 (9)
- **Metamaterials for radiative sky cooling** *NATIONAL SCIENCE REVIEW*
  Fan, S., Raman, A.
  2018; 5 (2): 132–33
- **Optimization of Multilayer Optical Films with a Memetic Algorithm and Mixed Integer Programming** *ACS PHOTONICS*
  Shi, Y., Li, W., Raman, A., Fan, S.
  2018; 5 (3): 684–91
- **Enhancing Mo:BiVO4 Solar Water Splitting with Patterned Au Nanospheres by Plasmon-Induced Energy Transfer** *ADVANCED ENERGY MATERIALS*
  Kim, J., Shi, X., Jeong, M., Park, J., Han, H., Kim, S., Guo, Y., Heinz, T. F., Fan, S., Lee, C., Park, J., Zheng, X.
  2018; 8 (5)
- **Effects of non-Hermitian perturbations on Weyl Hamiltonians with arbitrary topological charges** *PHYSICAL REVIEW B*

Cerjan, A., Xiao, M., Yuan, L., Fan, S.
2018; 97 (7)

- **Localization and time-reversal of light through dynamic modulation** *PHYSICAL REVIEW B*
  Minkov, M., Fan, S.
  2018; 97 (6)
- **Significant Enhancement of Near-Field Electromagnetic Heat Transfer in a Multilayer Structure through Multiple Surface-States Coupling** *PHYSICAL REVIEW LETTERS*
  Iizuka, H., Fan, S.
  2018; 120 (6): 063901
- **Adjoint-based optimization of active nanophotonic devices** *OPTICS EXPRESS*
  Wang, J., Shi, Y., Hughes, T., Zhao, Z., Fan, S.
  2018; 26 (3): 3236–48
- **Nanoporous polyethylene microfibres for large-scale radiative cooling fabric** *NATURE SUSTAINABILITY*
  Peng, Y., Chen, J., Song, A. Y., Catrysse, P. B., Hsu, P., Cai, L., Liu, B., Zhu, Y., Zhou, G., Wu, D. S., Lee, H., Fan, S., Cui, et al
  2018; 1 (2): 105–12
- **Anti-Hermitian photodetector facilitating efficient subwavelength photon sorting** *NATURE COMMUNICATIONS*
  Kim, S., Kang, J., Mutlu, M., Park, J., Park, W., Goodson, K. E., Sinclair, R., Fan, S., Kik, P. G., Brongersma, M. L.
  2018; 9: 316
- **Nonreciprocal optical manipulation using dynamic modulation**
  Shi, Y., Minkov, M., Fan, S., Lin, Q., IEEE
  IEEE.2018
- **Complete photonic bandgaps in supercell photonic crystals**
  Cerjan, A., Fan, S., IEEE
  IEEE.2018
- **Scaling towards Efficient Monolayer WS2 Photonic Crystal Lasers**
  Ge, X., Minkov, M., Li, X., Fan, S., Zhou, W., IEEE
  IEEE.2018: 21–22
- **Non-Hermitian and topological electromagnetics: synthetic dimensions, and robust wireless power transfer**
  Fan, S., IEEE
  IEEE.2018: 19
- **Direct Measurement of Directional Emission from Monolayer WS2 Laser with Heterostructure Photonic Crystal Cavities**
  Ge, X., Minkov, M., Fan, S., Li, X., Zhou, W.
  edited by Winzer, P., Tsang, H. K., Capmany, J., Yao, J., Fontaine, N., Dutta, N.
  IEEE.2018
- **Design of Light-Emitting Diodes and Photovoltaic Cells for Electroluminescent Refrigeration**
  Xiao, T., Chen, K., Santhanam, P., Fan, S., Yablonovitch, E., IEEE
  IEEE.2018: 1868–U1094
- **Decoupled textures for broadband absorption enhancement beyond Lambertian light trapping limit in thin-film silicon-based solar cells**
  Vismara, R., Linssen, D. N. P., Wang, K. X., Fan, S., Isabella, O., Zeman, M., IEEE
  IEEE.2018: 3455–59
- **Room Temperature Photonic Crystal Surface Emitting Laser with Synthesized Monolayer Tungsten Disulfide**
  Ge, X., Minkov, M., Choudhury, T., Chubarov, M., Fan, S., Redwing, J., Li, X., Zhou, W., IEEE
  IEEE.2018: 167–68
- **Localization, Time-reversal, and Unidirectional Guiding of Light Pulses Using Dynamic Modulation**
  Minkov, M., Fan, S., IEEE
  IEEE.2018

- **Enhanced Solid-State High-Harmonic Generation from a Silicon Metasurface**
  Liu, H., Guo, C., Vampa, G., Zhang, J., Sarmiento, T., Xiao, M., Bucksbaum, P. H., Vuckovic, J., Fan, S., Reis, D. A., IEEE
  IEEE.2018
- **Spontaneous and Stimulated Emission from Quantum Optical Systems**
  Trivedi, R., Fischer, K., Xu, S., Fan, S., Vuckovic, J., IEEE
  IEEE.2018
- **Broadband Control of Topological Nodes in Electromagnetic Fields**
  Song, A. Y., Catrysse, P. B., Fan, S., IEEE
  IEEE.2018
- **Achieving Topological Photonics in a Synthetic Space with Dynamically Modulated Ring Resonators**
  Yuan, L., Xiao, M., Lin, Q., Fan, S., IEEE
  IEEE.2018
- **Complete photonic bandgaps in supercell photonic crystals**
  Cerjan, A., Fan, S., IEEE
  IEEE.2018
- **Scaling towards Efficient Monolayer WS2 Photonic Crystal Lasers**
  Ge, X., Minkov, M., Li, X., Fan, S., Zhou, W., IEEE
  IEEE.2018: 21–22
- **Non-Hermitian and topological electromagnetics: synthetic dimensions, and robust wireless power transfer**
  Fan, S., IEEE
  IEEE.2018: 19
- **Direct Measurement of Directional Emission from Monolayer WS2 Laser with Heterostructure Photonic Crystal Cavities**
  Ge, X., Minkov, M., Fan, S., Li, X., Zhou, W.
  edited by Winzer, P., Tsang, H. K., Capmany, J., Yao, J., Fontaine, N., Dutta, N.
  IEEE.2018
- **Design of Light-Emitting Diodes and Photovoltaic Cells for Electroluminescent Refrigeration**
  Xiao, T., Chen, K., Santhanam, P., Fan, S., Yablonovitch, E., IEEE
  IEEE.2018: 1868–U1094
- **Decoupled textures for broadband absorption enhancement beyond Lambertian light trapping limit in thin-film silicon-based solar cells**
  Vismara, R., Linssen, D. N. P., Wang, K. X., Fan, S., Isabella, O., Zeman, M., IEEE
  IEEE.2018: 3455–59
- **Room Temperature Photonic Crystal Surface Emitting Laser with Synthesized Monolayer Tungsten Disulfide**
  Ge, X., Minkov, M., Choudhury, T., Chubarov, M., Fan, S., Redwing, J., Li, X., Zhou, W., IEEE
  IEEE.2018: 167–68
- **Complete photonic band gaps in supercell photonic crystals** *PHYSICAL REVIEW A*
  Cerjan, A., Fan, S.
  2017; 96 (5)
- **High-performance near-field thermophotovoltaics for waste heat recovery** *NANO ENERGY*
  Zhao, B., Chen, K., Buddhiraju, S., Bhatt, G., Lipson, M., Fan, S.
  2017; 41: 344–50
- **A dual-mode textile for human body radiative heating and cooling** *SCIENCE ADVANCES*
  Hsu, P., Liu, C., Song, A. Y., Zhang, Z., Peng, Y., Xie, J., Liu, K., Wu, C., Catrysse, P. B., Cai, L., Zhai, S., Majumdar, A., Fan, et al
  2017; 3 (11): e1700895
- **Creating anyons from photons using a nonlinear resonator lattice subject to dynamic modulation** *PHYSICAL REVIEW A*
  Yuan, L., Xiao, M., Xu, S., Fan, S.
  2017; 96 (4)

- **High-performance near-field electroluminescent refrigeration device consisting of a GaAs light emitting diode and a Si photovoltaic cell** *JOURNAL OF APPLIED PHYSICS*
  Chen, K., Xiao, T. P., Santhanam, P., Yablonovitch, E., Fan, S.
  2017; 122 (14)
- **Thermal Photonics and Energy Applications** *JOULE*
  Fan, S.
  2017; 1 (2): 264–73
- **Exergy in near-field electromagnetic heat transfer** *JOURNAL OF APPLIED PHYSICS*
  Iizuka, H., Fan, S.
  2017; 122 (12)
- **Photonic Chern insulator through homogenization of an array of particles** *PHYSICAL REVIEW B*
  Xiao, M., Fan, S.
  2017; 96 (10)
- **Warming up human body by nanoporous metallized polyethylene textile** *NATURE COMMUNICATIONS*
  Cai, L., Song, A. Y., Wu, P., Hsu, P., Peng, Y., Chen, J., Liu, C., Catrysse, P. B., Liu, Y., Yang, A., Zhou, C., Zhou, C., Fan, et al
  2017; 8: 496
- **Sub-ambient non-evaporative fluid cooling with the sky** *NATURE ENERGY*
  Goldstein, E. A., Raman, A. P., Fan, S.
  2017; 2 (9)
- **Unidirectional reflectionless light propagation at exceptional points** *NANOPHOTONICS*
  Huang, Y., Shen, Y., Min, C., Fan, S., Veronis, G.
  2017; 6 (5): 977-996
- **Electrodeposited high strength, thermally stable spectrally selective rhenium nickel inverse opals** *NANOSCALE*
  Zhang, R., Cohen, J., Fan, S., Braun, P. V.
  2017; 9 (31): 11187–94
- **Theory of solar cell light trapping through a nonequilibrium Green's function formulation of Maxwell's equations** *PHYSICAL REVIEW B*
  Buddhiraju, S., Fan, S.
  2017; 96 (3)
- **Objective-trait-bias metaheuristics for design optimization of optical structures** *JOURNAL OF THE OPTICAL SOCIETY OF AMERICA B-OPTICAL PHYSICS*
  Verweij, S., Fan, S.
  2017; 34 (7): 1551-1559
- **Exact solution to the steady-state dynamics of a periodically modulated resonator** *APL PHOTONICS*
  Minkov, M., Shi, Y., Fan, S.
  2017; 2 (7)
- **Optical Circulation and Isolation Based on Indirect Photonic Transitions of Guided Resonance Modes** *ACS PHOTONICS*
  Shi, Y., Han, S., Fan, S.
  2017; 4 (7): 1639–45
- **Near-field heat transfer between graphene/hBN multilayers** *PHYSICAL REVIEW B*
  Zhao, B., Guizal, B., Zhang, Z. M., Fan, S., Antezza, M.
  2017; 95 (24)
- **Method for computationally efficient design of dielectric laser accelerator structures** *OPTICS EXPRESS*
  Hughes, T., Veronis, G., Wootton, K. P., England, R., Fan, S.
  2017; 25 (13): 15414–27
- **Robust wireless power transfer using a nonlinear parity-time-symmetric circuit** *NATURE*
  Assawaworrarit, S., Yu, X., Fan, S.

2017; 546 (7658): 387-+

- **Generalized cluster decomposition principle illustrated in waveguide quantum electrodynamics** *PHYSICAL REVIEW A*
  Xu, S., Fan, S.
  2017; 95 (6)
- **Plasmonic computing of spatial differentiation** *NATURE COMMUNICATIONS*
  Zhu, T., Zhou, Y., Lou, Y., Ye, H., Qiu, M., Ruan, Z., Fan, S.
  2017; 8
- **Non-reciprocal geometric phase in nonlinear frequency conversion** *OPTICS LETTERS*
  Wang, K., Shi, Y., Solntsev, A. S., Fan, S., Sukhorukov, A. A., Neshev, D. N.
  2017; 42 (10): 1990-1993
- **Universal modal radiation laws for all thermal emitters** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
  Miller, D. A., Zhu, L., Fan, S.
  2017; 114 (17): 4336-4341
- **A Comprehensive Photonic Approach for Solar Cell Cooling** *ACS PHOTONICS*
  Li, W., Shi, Y., Chen, K., Zhu, L., Fan, S.
  2017; 4 (4): 774-782
- **Analysis of an anti-reflecting nanowire transparent electrode for solar cells** *JOURNAL OF APPLIED PHYSICS*
  Zhao, Z., Wang, K. X., Fan, S.
  2017; 121 (11)
- **Planar, Ultrathin, Subwavelength Spectral Light Separator for Efficient, Wide-Angle Spectral Imaging** *ACS PHOTONICS*
  Buyukalp, Y., Catrysse, P. B., Shin, W., Fan, S.
  2017; 4 (3): 525-535
- **Synthetic gauge potential and effective magnetic field in a Raman medium undergoing molecular modulation** *PHYSICAL REVIEW A*
  Yuan, L., Wang, D., Fan, S.
  2017; 95 (3)
- **Daytime Radiative Cooling Using Near-Black Infrared Emitters** *ACS PHOTONICS*
  Kou, J., Jurado, Z., Chen, Z., Fan, S., Minnich, A. J.
  2017; 4 (3): 626-630
- **Invited Article: Acousto-optic finite-difference frequency- domain algorithm for first-principles simulations of on-chip acousto-optic devices** *APL PHOTONICS*
  Shi, Y., Cerjan, A., Fan, S.
  2017; 2 (2)
- **Photonic Weyl Point in a 2D Resonator Array with a Synthetic Frequency Dimension**
  Lin, Q., Xiao, M., Yuan, L., Fan, S., IEEE
  IEEE.2017
- **Enhancing Near-Field Radiative Heat Transfer with Si-based Metasurfaces.** *Physical review letters*
  Fernández-Hurtado, V. n., García-Vidal, F. J., Fan, S. n., Cuevas, J. C.
  2017; 118 (20): 203901
- **Subwavelength Angle Sensing Photodetector**
  Yi, S., Zhou, M., Yu, Z., Fan, P., Lin, D., Fan, S., Brongersma, M., IEEE
  IEEE.2017
- **Enhanced Light Emission from MoS2 in Heterostructure Photonic Crystal Cavities**
  Ge, X., Minkov, M., Chowdhury, F., Fan, S., Li, X., Zhou, W., IEEE Photon Soc
  IEEE.2017: 461–62
- **Passive Cooling of Solar Cells with a Comprehensive Photonic Approach**

Li, W., Shi, Y., Chen, K., Zhu, L., Fan, S., IEEE
IEEE.2017: 847–50

- **A Multi-frequency Finite-difference Frequency-domain Algorithm for Active Nanophotonic Device Simulations**
  Shi, Y., Shin, W., Fan, S., IEEE
  IEEE.2017
- **Lateral Size Scaling of Photonic Crystal Surface-Emitting Lasers on Si**
  Liu, S., Zhao, D., Yang, H., Reuterskiold-Hedlund, C., Hammar, M., Fan, S., Ma, Z., Zhou, W., IEEE
  IEEE.2017
- **Eigenvalue dynamics in the presence of non-uniform gain and loss**
  Cerjan, A., Fan, S., IEEE
  IEEE.2017
- **Theory of few-photon quantum scattering in nanophotonic structures**
  Xu, S., Fan, S.
  edited by Shahriar, S. M., Scheuer, J.
  SPIE-INT SOC OPTICAL ENGINEERING.2017
- **Enhancing Near-Field Radiative Heat Transfer with Si-based Metasurfaces.** *Physical review letters*
  Fernández-Hurtado, V. n., García-Vidal, F. J., Fan, S. n., Cuevas, J. C.
  2017; 118 (20): 203901
- **Subwavelength Angle Sensing Photodetector**
  Yi, S., Zhou, M., Yu, Z., Fan, P., Lin, D., Fan, S., Brongersma, M., IEEE
  IEEE.2017
- **Enhanced Light Emission from MoS2 in Heterostructure Photonic Crystal Cavities**
  Ge, X., Minkov, M., Chowdhury, F., Fan, S., Li, X., Zhou, W., IEEE Photon Soc
  IEEE.2017: 461–62
- **Passive Cooling of Solar Cells with a Comprehensive Photonic Approach**
  Li, W., Shi, Y., Chen, K., Zhu, L., Fan, S., IEEE
  IEEE.2017: 847–50
- **A Multi-frequency Finite-difference Frequency-domain Algorithm for Active Nanophotonic Device Simulations**
  Shi, Y., Shin, W., Fan, S., IEEE
  IEEE.2017
- **Lateral Size Scaling of Photonic Crystal Surface-Emitting Lasers on Si**
  Liu, S., Zhao, D., Yang, H., Reuterskiold-Hedlund, C., Hammar, M., Fan, S., Ma, Z., Zhou, W., IEEE
  IEEE.2017
- **Eigenvalue dynamics in the presence of non-uniform gain and loss**
  Cerjan, A., Fan, S., IEEE
  IEEE.2017
- **Theory of few-photon quantum scattering in nanophotonic structures**
  Xu, S., Fan, S.
  edited by Shahriar, S. M., Scheuer, J.
  SPIE-INT SOC OPTICAL ENGINEERING.2017
- **Narrowband thermal emission from a uniform tungsten surface critically coupled with a photonic crystal guided resonance** *OPTICS EXPRESS*
  Guo, Y., Fan, S.
  2016; 24 (26): 29896-29907
- **Nonequilibrium Casimir Force with a Nonzero Chemical Potential for Photons** *PHYSICAL REVIEW LETTERS*
  Chen, K., Fan, S.

2016; 117 (26)

- **Effects of non-uniform distributions of gain and loss in photonic crystals** *NEW JOURNAL OF PHYSICS*
  Cerjan, A., Fan, S.
  2016; 18
- **Photonic Weyl point in a two-dimensional resonator lattice with a synthetic frequency dimension** *NATURE COMMUNICATIONS*
  Lin, Q., Xiao, M., Yuan, L., Fan, S.
  2016; 7
- **Radiative cooling to deep sub-freezing temperatures through a 24-h day-night cycle** *NATURE COMMUNICATIONS*
  Chen, Z., Zhu, L., Raman, A., Fan, S.
  2016; 7
- **Understanding search behavior via search landscape analysis in design optimization of optical structures** *JOURNAL OF THE OPTICAL SOCIETY OF AMERICA B-OPTICAL PHYSICS*
  Verweij, S., Fan, S.
  2016; 33 (12): 2457-2471
- **Photonic Structure Textile Design for Localized Thermal Cooling Based on a Fiber Blending Scheme** *ACS PHOTONICS*
  Catrysse, P. B., Song, A. Y., Fan, S.
  2016; 3 (12): 2420-2426
- **Temporal coupled mode theory linking to surface-wave dispersion relations in near-field electromagnetic heat transfer** *JOURNAL OF APPLIED PHYSICS*
  Iizuka, H., Fan, S.
  2016; 120 (19)
- **Multi-frequency finite-difference frequency-domain algorithm for active nanophotonic device simulations** *OPTICA*
  Shi, Y., Shin, W., Fan, S.
  2016; 3 (11): 1256-1259
- **Time reversal of a wave packet with temporal modulation of gauge potential** *PHYSICAL REVIEW B*
  Yuan, L., Xiao, M., Fan, S.
  2016; 94 (14)
- **Fano interference in two-photon transport** *PHYSICAL REVIEW A*
  Xu, S., Fan, S.
  2016; 94 (4)
- **Eigenvalue dynamics in the presence of nonuniform gain and loss** *PHYSICAL REVIEW A*
  Cerjan, A., Fan, S.
  2016; 94 (3)
- **Persistent Directional Current at Equilibrium in Nonreciprocal Many-Body Near Field Electromagnetic Heat Transfer** *PHYSICAL REVIEW LETTERS*
  Zhu, L., Fan, S.
  2016; 117 (13)
- **Bloch oscillation and unidirectional translation of frequency in a dynamically modulated ring resonator** *OPTICA*
  Yuan, L., Fan, S.
  2016; 3 (9): 1014-1018
- **Radiative human body cooling by nanoporous polyethylene textile** *SCIENCE*
  Hsu, P., Song, A. Y., Catrysse, P. B., Liu, C., Peng, Y., Xie, J., Fan, S., Cui, Y.
  2016; 353 (6303): 1019-1023
- **Plasmonic Circuit Theory for Multiresonant Light Funneling to a Single Spatial Hot Spot** *NANO LETTERS*
  Hughes, T. W., Fan, S.
  2016; 16 (9): 5764-5769

- **Roadmap on optical metamaterials** *JOURNAL OF OPTICS*
  Urbas, A. M., Jacob, Z., Dal Negro, L., Engheta, N., Boardman, A. D., Egan, P., Khanikaev, A. B., Menon, V., Ferrera, M., Kinsey, N., Devault, C., Kim, J., Shalaev, et al
  2016; 18 (9)
- **Highly tunable refractive index visible-light metasurface from block copolymer self-assembly** *NATURE COMMUNICATIONS*
  Kim, J. Y., Kim, H., Kim, B. H., Chang, T., Lim, J., Jin, H. M., Mun, J. H., Choi, Y. J., Chung, K., Shin, J., Fan, S., Kim, S. O.
  2016; 7
- **Slanted gold mushroom array: a switchable bi/tridirectional surface plasmon polariton splitter.** *Nanoscale*
  Shen, Y., Fang, G., Cerjan, A., Chi, Z., Fan, S., Jin, C.
  2016; 8 (34): 15505-15513
- **Near-Field Enhanced Negative Luminescent Refrigeration** *PHYSICAL REVIEW APPLIED*
  Chen, K., Santhanam, P., Fan, S.
  2016; 6 (2)
- **Hyperbolic Weyl Point in Reciprocal Chiral Metamaterials.** *Physical review letters*
  Xiao, M., Lin, Q., Fan, S.
  2016; 117 (5): 057401-?
- **High-Performance Ultrathin BiVO4 Photoanode on Textured Polydimethylsiloxane Substrates for Solar Water Splitting** *ACS ENERGY LETTERS*
  Zhao, J., Guo, Y., Cai, L., Li, H., Wang, K. X., Cho, I. S., Lee, C. H., Fan, S., Zheng, X.
  2016; 1 (1): 68-75
- **Roadmap on optical energy conversion** *JOURNAL OF OPTICS*
  Boriskina, S. V., Green, M. A., Catchpole, K., Yablonovitch, E., Beard, M. C., Okada, Y., Lany, S., Gershon, T., Zakutayev, A., Tahersima, M. H., Sorger, V. J., Naughton, M. J., Kempa, et al
  2016; 18 (7)
- **Near-field radiative heat transfer between parallel structures in the deep subwavelength regime** *NATURE NANOTECHNOLOGY*
  St-Gelais, R., Zhu, L., Fan, S., Lipson, M.
  2016; 11 (6): 515-?
- **Exceptional Contours and Band Structure Design in Parity-Time Symmetric Photonic Crystals** *PHYSICAL REVIEW LETTERS*
  Cerjan, A., Raman, A., Fan, S.
  2016; 116 (20)
- **Thermal-to-electrical energy conversion by diodes under negative illumination** *PHYSICAL REVIEW B*
  Santhanam, P., Fan, S.
  2016; 93 (16)
- **Broadband Absorption Enhancement in Solar Cells with an Atomically Thin Active Layer** *ACS PHOTONICS*
  Piper, J. R., Fan, S.
  2016; 3 (4): 571-577
- **Angle-selective perfect absorption with two-dimensional materials** *LIGHT-SCIENCE & APPLICATIONS*
  Zhu, L., Liu, F., Lin, H., Hu, J., Yu, Z., Wang, X., Fan, S.
  2016; 5
- **Angle-selective perfect absorption with two-dimensional materials.** *Light, science & applications*
  Zhu, L., Liu, F., Lin, H., Hu, J., Yu, Z., Wang, X., Fan, S.
  2016; 5 (3): e16052
- **Controlling the electrostatic Coulomb interaction using metamaterials** *PHYSICAL REVIEW B*
  Karakasoglu, I., Fan, S.
  2016; 93 (7)
- **Photonic gauge potential in a system with a synthetic frequency dimension** *OPTICS LETTERS*

Yuan, L., Shi, Y., Fan, S.
2016; 41 (4): 741-744

- **Dynamic non-reciprocal meta-surfaces with arbitrary phase reconfigurability based on photonic transition in meta-atoms** *APPLIED PHYSICS LETTERS*
  Shi, Y., Fan, S.
  2016; 108 (2)
- **Passively Cooling Water below the Ambient Temperature during the Day Via Radiative Sky Cooling**
  Goldstein, E. A., Raman, A. P., Fan, S., ASHRAE
  AMER SOC HEATING, REFRIGERATING AND AIR-CONDITIONING ENGS.2016
- **Hyperbolic Weyl Point in Reciprocal Chiral Metamaterial**
  Xiao, M., Lin, Q., Fan, S., IEEE
  IEEE.2016: 977
- **Photonic Structure Textile Design for Localized Thermal Management via Radiative Cooling**
  Catrysse, P. B., Song, A. Y., Fan, S., IEEE
  IEEE.2016
- **Achieving the gauge potential for the photon in a synthetic space**
  Yuan, L., Shi, Y., Fan, S., IEEE
  IEEE.2016
- **Nanophotonic Control of Heat: New Fundamental Effects and Applications**
  Fan, S., IEEE
  IEEE.2016
- **Radiative cooling of solar absorbers using a transparent photonic crystal thermal blackbody**
  Zhu, L., Raman, A. R., Fan, S., IEEE
  IEEE.2016
- **Current-Voltage Enhancement of a Single Coaxial Nanowire Solar Cell** *ACS PHOTONICS*
  Sandhu, S., Fan, S.
  2015; 2 (12): 1698-1704
- **Achieving nonreciprocal unidirectional single-photon quantum transport using the photonic Aharonov-Bohm effect** *OPTICS LETTERS*
  Yuan, L., Xu, S., Fan, S.
  2015; 40 (22): 5140-5143
- **Topologically nontrivial Floquet band structure in a system undergoing photonic transitions in the ultrastrong-coupling regime** *PHYSICAL REVIEW A*
  Yuan, L., Fan, S.
  2015; 92 (5)
- **Unified picture of modal loss rates from microwave to optical frequencies in deep-subwavelength metallic structures: A case study with slot waveguides** *APPLIED PHYSICS LETTERS*
  Shin, W., Fan, S.
  2015; 107 (17)
- **Photon management for enhanced open-circuit voltage in nanostructured solar cells** *JOURNAL OF PHYSICS D-APPLIED PHYSICS*
  Sandhu, S., Yu, Z., Fan, S.
  2015; 48 (41)
- **Analytical treatment of near-field electromagnetic heat transfer at the nanoscale** *PHYSICAL REVIEW B*
  Iizuka, H., Fan, S.
  2015; 92 (14)
- **Radiative cooling of solar absorbers using a visibly transparent photonic crystal thermal blackbody** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
  Zhu, L., Raman, A. P., Fan, S.

2015; 112 (40): 12282-12287

- **Suppressing sub-bandgap phonon-polariton heat transfer in near-field thermophotovoltaic devices for waste heat recovery** *APPLIED PHYSICS LETTERS*
  Chen, K., Santhanam, P., Fan, S.
  2015; 107 (9)
- **Plasmonic coaxial waveguide-cavity devices** *OPTICS EXPRESS*
  Mahigir, A., Dastmalchi, P., Shin, W., Fan, S., Veronis, G.
  2015; 23 (16): 20549-20562
- **Theory of Half-Space Light Absorption Enhancement for Leaky Mode Resonant Nanowires** *NANO LETTERS*
  Jia, Y., Qiu, M., Wu, H., Cui, Y., Fan, S., Ruan, Z.
  2015; 15 (8): 5513-5518
- **Analog of superradiant emission in thermal emitters** *PHYSICAL REVIEW B*
  Zhou, M., Yi, S., Luk, T., Gan, Q., Fan, S., Yu, Z.
  2015; 92 (2)
- **Resonator-free realization of effective magnetic field for photons** *NEW JOURNAL OF PHYSICS*
  Lin, Q., Fan, S.
  2015; 17
- **Optical-Electronic Analysis of the Intrinsic Behaviors of Nanostructured Ultrathin Crystalline Silicon Solar Cells** *ACS PHOTONICS*
  Karakasoglu, I., Wang, K. X., Fan, S.
  2015; 2 (7): 883-889
- **Three-Dimensional Dynamic Localization of Light from a Time-Dependent Effective Gauge Field for Photons** *PHYSICAL REVIEW LETTERS*
  Yuan, L., Fan, S.
  2015; 114 (24)
- **Limitations of nonlinear optical isolators due to dynamic reciprocity** *NATURE PHOTONICS*
  Shi, Y., Yu, Z., Fan, S.
  2015; 9 (6): 388-392
- **Input-output formalism for few-photon transport: A systematic treatment beyond two photons** *PHYSICAL REVIEW A*
  Xu, S., Fan, S.
  2015; 91 (4)
- **Heat-flux control and solid-state cooling by regulating chemical potential of photons in near-field electromagnetic heat transfer** *PHYSICAL REVIEW B*
  Chen, K., Santhanam, P., Sandhu, S., Zhu, L., Fan, S.
  2015; 91 (13)
- **Optical separation of heterogeneous size distributions of microparticles on silicon nitride strip waveguides** *OPTICS EXPRESS*
  Khan, S. A., Shi, Y., Chang, C., Jan, C., Fan, S., Ellerbee, A. K., Solgaard, O.
  2015; 23 (7): 8855-8866
- **Planar immersion lens with metasurfaces** *PHYSICAL REVIEW B*
  Ho, J. S., Qiu, B., Tanabe, Y., Yeh, A. J., Fan, S., Poon, A. S.
  2015; 91 (12)
- **Near-Field Radiative Heat Transfer between Integrated Nanostructures using Silicon Carbide**
  St-Gelais, R., Zhu, L., Guha, B., Fan, S., Lipson, M., IEEE
  IEEE.2015
- **Radiative cooling for solar cells** *Conference on Physics, Simulation, and Photonic Engineering of Photovoltaic Devices IV*
  Zhu, L., Raman, A., Wang, K. X., Abou Anoma, M., Fan, S.
  SPIE-INT SOC OPTICAL ENGINEERING.2015

- **Sufficient Condition for Perfect Antireflection by Optical Resonance at Dielectric Interface** *Conference on Physics, Simulation, and Photonic Engineering of Photovoltaic Devices IV*
  Wang, K. X., Yu, Z., Sandhu, S., Liu, V., Fan, S.
  SPIE-INT SOC OPTICAL ENGINEERING.2015
- **Light Guiding by Gauge Field for Photons**
  Lin, Q., Fan, S., IEEE
  IEEE.2015
- **Routing of deep-subwavelength optical beams without reflection and diffraction using infinitely anisotropic metamaterials**
  Catrysse, P. B., Fan, S.
  edited by Betz, M., Elezzabi, A. Y., Tsen, K. T.
  SPIE-INT SOC OPTICAL ENGINEERING.2015
- **Condition for Perfect Resonant Antireflection in Solar Cells**
  Wang, K., Yu, Z., Sandhu, S., Liu, V., Fan, S., IEEE
  IEEE.2015
- **Theory and Practice of Resonant Antireflection**
  Wang, K., Fan, S., IEEE
  IEEE.2015
- **Recent advances on non-reciprocal light manipulation from dynamic modulation**
  Fan, S., Shi, Y., Yu, Z., Lin, Q., Yuan, L., IEEE
  IEEE.2015: 400–402
- **Using time-dependent effective gauge field for photons to achieve dynamic localization of light**
  Yuan, L., Fan, S.
  edited by Subramania, G. S., Foteinopoulou, S.
  SPIE-INT SOC OPTICAL ENGINEERING.2015
- **Near complete violation of detailed balance in thermal radiation**
  Zhu, L., Fan, S., IEEE
  IEEE.2015
- **Condition for perfect antireflection by optical resonance at material interface** *OPTICA*
  Wang, K. X., Yu, Z., Sandhu, S., Liu, V., Fan, S.
  2014; 1 (6): 388-395
- **Near-complete violation of detailed balance in thermal radiation** *PHYSICAL REVIEW B*
  Zhu, L., Fan, S.
  2014; 90 (22)
- **Demonstration of Strong Near-Field Radiative Heat Transfer between Integrated Nanostructures** *NANO LETTERS*
  St-Gelais, R., Guha, B., Zhu, L., Fan, S., Lipson, M.
  2014; 14 (12): 6971-6975
- **Passive radiative cooling below ambient air temperature under direct sunlight.** *Nature*
  Raman, A. P., Anoma, M. A., Zhu, L., Rephaeli, E., Fan, S.
  2014; 515 (7528): 540-544
- **Accelerating simulation of ensembles of locally differing optical structures via a Schur complement domain decomposition** *OPTICS LETTERS*
  Verweij, S., Liu, V., Fan, S.
  2014; 39 (22): 6458-6461
- **Approaching total absorption at near infrared in a large area monolayer graphene by critical coupling** *APPLIED PHYSICS LETTERS*
  Liu, Y., Chadha, A., Zhao, D., Piper, J. R., Jia, Y., Shuai, Y., Menon, L., Yang, H., Ma, Z., Fan, S., Xia, F., Zhou, W.
  2014; 105 (18)

- **Consideration of enhancement of thermal rectification using metamaterial models** *JOURNAL OF QUANTITATIVE SPECTROSCOPY & RADIATIVE TRANSFER*
  Iizuka, H., Fan, S.
  2014; 148: 156-164
- **Complete power concentration into a single waveguide in large-scale waveguide array lenses** *SCIENTIFIC REPORTS*
  Catrysse, P. B., Liu, V., Fan, S.
  2014; 4
- **Graphene surface plasmons at the near-infrared optical regime** *SCIENTIFIC REPORTS*
  Zhang, Q., Li, X., Hossain, M. M., Xue, Y., Zhang, J., Song, J., Liu, J., Turner, M. D., Fan, S., Bao, Q., Gu, M.
  2014; 4
- **Two-dimensional Green's tensor for gyrotropic clusters composed of circular cylinders** *JOURNAL OF THE OPTICAL SOCIETY OF AMERICA A-OPTICS IMAGE SCIENCE AND VISION*
  Asatryan, A. A., Botten, L. C., Fang, K., Fan, S., McPhedran, R. C.
  2014; 31 (10): 2294-2303
- **Non-reciprocal phase shift induced by an effective magnetic flux for light** *NATURE PHOTONICS*
  Tzuang, L. D., Fang, K., Nussenzveig, P., Fan, S., Lipson, M.
  2014; 8 (9): 701-705
- **Light Guiding by Effective Gauge Field for Photons** *PHYSICAL REVIEW X*
  Lin, Q., Fan, S.
  2014; 4 (3)
- **Directional perfect absorption using deep subwavelength low-permittivity films** *PHYSICAL REVIEW B*
  Luk, T. S., Campione, S., Kim, I., Feng, S., Jun, Y. C., Liu, S., Wright, J. B., Brener, I., Catrysse, P. B., Fan, S., Sinclair, M. B.
  2014; 90 (8)
- **Light trapping in photonic crystals** *ENERGY & ENVIRONMENTAL SCIENCE*
  Wang, K. X., Yu, Z., Liu, V., Raman, A., Cui, Y., Fan, S.
  2014; 7 (8): 2725-2738
- **Radiative cooling of solar cells** *OPTICA*
  Zhu, L., Raman, A., Wang, K. X., Abou Anoma, M., Fan, S.
  2014; 1 (1): 32-38
- **Spectral light separator based on deep-subwavelength resonant apertures in a metallic film** *APPLIED PHYSICS LETTERS*
  Bueyuekalp, Y., Catrysse, P. B., Shin, W., Fan, S.
  2014; 105 (1)
- **Dislocated Double-Layer Metal Gratings: An Efficient Unidirectional Coupler** *NANO LETTERS*
  Liu, T., Shen, Y., Shin, W., Zhu, Q., Fan, S., Jin, C.
  2014; 14 (7): 3848-3854
- **Total absorption by degenerate critical coupling** *APPLIED PHYSICS LETTERS*
  Piper, J. R., Liu, V., Fan, S.
  2014; 104 (25)
- **Spatial control of surface plasmon polariton excitation at planar metal surface** *OPTICS LETTERS*
  Ruan, Z., Wu, H., Qiu, M., Fan, S.
  2014; 39 (12): 3587-3590
- **Sensitivity analysis and optimization of sub-wavelength optical gratings using adjoints** *OPTICS EXPRESS*
  Niederberger, A. C. R., Fattal, D. A., Gauger, N. R., Fan, S., Beausoleil, R. G.
  2014; 22 (11): 12971-12981
- **Optical impedance transformer for transparent conducting electrodes.** *Nano letters*
  Wang, K. X., Piper, J. R., Fan, S.

2014; 14 (5): 2755-2758

- **Optical Fano resonance of an individual semiconductor nanostructure** *NATURE MATERIALS*
  Fan, P., Yu, Z., Fan, S., Brongersma, M. L.
  2014; 13 (5): 471-475
- **Parity-time-symmetric whispering-gallery microcavities** *NATURE PHYSICS*
  Peng, B., Oezdemir, S. K., Lei, F., Monifi, F., Gianfreda, M., Long, G. L., Fan, S., Nori, F., Bender, C. M., Yang, L.
  2014; 10 (5): 394-398
- **Light management for photovoltaics using high-index nanostructures** *NATURE MATERIALS*
  Brongersma, M. L., Cui, Y., Fan, S.
  2014; 13 (5): 451-460
- **Total Absorption in a Graphene Mono layer in the Optical Regime by Critical Coupling with a Photonic Crystal Guided Resonance** *ACS PHOTONICS*
  Piper, J. R., Fan, S.
  2014; 1 (4): 347-353
- **Nanoscale thermal transport. II. 2003-2012** *APPLIED PHYSICS REVIEWS*
  Cahill, D. G., Braun, P. V., Chen, G., Clarke, D. R., Fan, S., Goodson, K. E., Keblinski, P., King, W. P., Mahan, G. D., Majumdar, A., Maris, H. J., Phillpot, S. R., Pop, et al
  2014; 1 (1)
- **Energy efficient nanophotonics: Engineered light-matter interaction in sub-wavelength structures** *OPTICS COMMUNICATIONS*
  Husko, C., Yu, Z., Fan, S.
  2014; 314: 1-2
- **Nearly Total Solar Absorption in Ultrathin Nanostructured Iron Oxide for Efficient Photoelectrochemical Water Splitting** *ACS PHOTONICS*
  Wang, K. X., Wu, Z., Liu, V., Brongersma, M. L., Jaramillo, T. F., Fan, S.
  2014; 1 (3): 235-240
- **Detailed balance analysis and enhancement of open-circuit voltage in single-nanowire solar cells.** *Nano letters*
  Sandhu, S., Yu, Z., Fan, S.
  2014; 14 (2): 1011-1015
- **Fluctuational electrodynamics calculations of near-field heat transfer in non-planar geometries: A brief overview** *JOURNAL OF QUANTITATIVE SPECTROSCOPY & RADIATIVE TRANSFER*
  Otey, C. R., Zhu, L., Sandhu, S., Fan, S.
  2014; 132: 3-11
- **Large-scale ideal waveguide lenses with complete power concentration in a single waveguide**
  Catrysse, P. B., Liu, V., Fan, S., IEEE
  IEEE.2014
- **Optical Impedance Transformer for Transparent Conducting Electrodes** *Carbon Nanotubes, Graphene,and Associated Devices VII*
  Wang, K. X., Piper, J. R., Fan, S.
  SPIE-INT SOC OPTICAL ENGINEERING.2014
- **Optical Impedance Transformer for Transparent Conducting Electrodes**
  Wang, K., Fan, S., IEEE
  IEEE.2014: 542–43
- **Color-preserving daytime radiative cooling**
  Zhu, L., Raman, A., Fan, S., IEEE
  IEEE.2014
- **Demonstration of Strong Near-Field Radiative Heat Transfer between Nanostructures**
  St-Gelais, R., Guha, B., Zhu, L., Fan, S., Lipson, M., IEEE
  IEEE.2014

- **Parity-time (PT)-symmetric optical microcavities**
  Peng, B., Oezdemir, S., Fan, S., Nori, F., Gianfreda, M., Bender, C. M., Yang, L., IEEE
  IEEE.2014
- **Observation of an effective magnetic field for light**
  Tzuang, L. D., Fang, K., Nussenzveig, P., Fan, S., Lipson, M., IEEE
  IEEE.2014
- **Nanophotonic Light Trapping Theory for Photovoltaics** *NANOFABRICATION AND ITS APPLICATION IN RENEWABLE ENERGY*
  Yu, Z., Raman, A., Fan, S.
  edited by Zhang, G., Manjooran, N.
  2014: 31-61
- **Photovoltaics: an alternative 'Sun' for solar cells.** *Nature nanotechnology*
  Fan, S. n.
  2014; 9 (2): 92–93
- **Towards ultra-thin plasmonic silicon wafer solar cells with minimized efficiency loss.** *Scientific reports*
  Zhang, Y. n., Stokes, N. n., Jia, B. n., Fan, S. n., Gu, M. n.
  2014; 4: 4939
- **Photonic Aharonov-Bohm effect in photon-phonon interactions** *NATURE COMMUNICATIONS*
  Li, E., Eggleton, B. J., Fang, K., Fan, S.
  2014; 5
- **Progress in 2D photonic crystal Fano resonance photonics** *PROGRESS IN QUANTUM ELECTRONICS*
  Zhou, W., Zhao, D., Shuai, Y., Yang, H., Chuwongin, S., Chadha, A., Seo, J., Wang, K. X., Liu, V., Ma, Z., Fan, S.
  2014; 38 (1): 1-74
- **Light Trapping in Photonic Crystals** *Conference on Thin Films for Solar and Energy Technology VI*
  Wang, K. X., Yu, Z., Liu, V., Raman, A., Cui, Y., Fan, S.
  SPIE-INT SOC OPTICAL ENGINEERING.2014
- **Ultrahigh contrast and large-bandwidth thermal rectification in near-field electromagnetic thermal transfer between nanoparticles** *Conference on Nanophotonic Materials XI*
  Zhu, L., Otey, C. R., Fan, S.
  SPIE-INT SOC OPTICAL ENGINEERING.2014
- **Efficiency above the Shockley-Queisser Limit by Using Nanophotonic Effects To Create Multiple Effective Bandgaps With a Single Semiconductor** *NANO LETTERS*
  Yu, Z., Sandhu, S., Fan, S.
  2014; 14 (1): 66-70
- **Two-dimensional chalcogenide nanoplates as tunable metamaterials via chemical intercalation.** *Nano letters*
  Cha, J. J., Koski, K. J., Huang, K. C., Wang, K. X., Luo, W., Kong, D., Yu, Z., Fan, S., Brongersma, M. L., Cui, Y.
  2013; 13 (12): 5913-5918
- **Coupled double-layer Fano resonance photonic crystal filters with lattice-displacement** *APPLIED PHYSICS LETTERS*
  Shuai, Y., Zhao, D., Chadha, A. S., Seo, J., Yang, H., Fan, S., Ma, Z., Zhou, W.
  2013; 103 (24)
- **Deep subwavelength plasmonic waveguide switch in double graphene layer structure** *APPLIED PHYSICS LETTERS*
  Iizuka, H., Fan, S.
  2013; 103 (23)
- **Metamaterial band theory: fundamentals & applications** *SCIENCE CHINA-INFORMATION SCIENCES*
  Raman, A. P., Shin, W., Fan, S.
  2013; 56 (12)
- **Two-Dimensional Chalcogenide Nanoplates as Tunable Metamaterials via Chemical Intercalation** *NANO LETTERS*

Cha, J. J., Koski, K. J., Huang, K. C., Wan, K. X., Luo, W., Kong, D., Yu, Z., Fan, S., Brongersma, M. L., Cui, Y.
2013; 13 (12): 5913-5918

- **Analytic properties of two-photon scattering matrix in integrated quantum systems determined by the cluster decomposition principle.** *Physical review letters*
  Xu, S., Rephaeli, E., Fan, S.
  2013; 111 (22): 223602-?
- **Analytic Properties of Two-Photon Scattering Matrix in Integrated Quantum Systems Determined by the Cluster Decomposition Principle** *PHYSICAL REVIEW LETTERS*
  Xu, S., Rephaeli, E., Fan, S.
  2013; 111 (22)
- **Color-preserving daytime radiative cooling** *APPLIED PHYSICS LETTERS*
  Zhu, L., Raman, A., Fan, S.
  2013; 103 (22)
- **Controlling the Flow of Light Using the Inhomogeneous Effective Gauge Field that Emerges from Dynamic Modulation** *PHYSICAL REVIEW LETTERS*
  Fang, K., Fan, S.
  2013; 111 (20)
- **Ultrahigh-contrast and large-bandwidth thermal rectification in near-field electromagnetic thermal transfer between nanoparticles** *PHYSICAL REVIEW B*
  Zhu, L., Otey, C. R., Fan, S.
  2013; 88 (18)
- **Effective magnetic field for photons based on the magneto-optical effect** *PHYSICAL REVIEW A*
  Fang, K., Fan, S.
  2013; 88 (4)
- **A lateral optical equilibrium in waveguide-resonator optical force** *OPTICS EXPRESS*
  Intaraprasonk, V., Fan, S.
  2013; 21 (21): 25257-25270
- **Double-layer Fano resonance photonic crystal filters** *OPTICS EXPRESS*
  Shuai, Y., Zhao, D., Tian, Z., Seo, J., Plant, D. V., Ma, Z., Fan, S., Zhou, W.
  2013; 21 (21): 24582-24589
- **Broadband Sharp 90-degree Bends and T-Splitters in Plasmonic Coaxial Waveguides.** *Nano letters*
  Shin, W., Cai, W., Catrysse, P. B., Veronis, G., Brongersma, M. L., Fan, S.
  2013; 13 (10): 4753-4758
- **Dissipation in few-photon waveguide transport [Invited]** *PHOTONICS RESEARCH*
  Rephaeli, E., Fan, S.
  2013; 1 (3): 110-114
- **Three-dimensional self-assembled photonic crystals with high temperature stability for thermal emission modification** *NATURE COMMUNICATIONS*
  Arpin, K. A., Losego, M. D., Cloud, A. N., Ning, H., Mallek, J., Sergeant, N. P., Zhu, L., Yu, Z., Kalanyan, B., Parsons, G. N., Girolami, G. S., Abelson, J. R., Fan, et al
  2013; 4
- **Accelerated solution of the frequency-domain Maxwell's equations by engineering the eigenvalue distribution of the operator** *OPTICS EXPRESS*
  Shin, W., Fan, S.
  2013; 21 (19): 22578-22595
- **Large-area free-standing ultrathin single-crystal silicon as processable materials.** *Nano letters*
  Wang, S., Weil, B. D., Li, Y., Wang, K. X., Garnett, E., Fan, S., Cui, Y.
  2013; 13 (9): 4393-4398

- **Optical pulling force and conveyor belt effect in resonator-waveguide system** *OPTICS LETTERS*
  Intaraprasonk, V., Fan, S.
  2013; 38 (17): 3264-3267
- **What is - and what is not - an optical isolator** *NATURE PHOTONICS*
  Jalas, D., Petrov, A., Eich, M., Freude, W., Fan, S., Yu, Z., Baets, R., Popovic, M., Melloni, A., Joannopoulos, J. D., Vanwolleghem, M., Doerr, C. R., Renner, et al
  2013; 7 (8): 579-582
- **Photonic de Haas-van Alphen effect** *OPTICS EXPRESS*
  Fang, K., Yu, Z., Fan, S.
  2013; 21 (15): 18216-18224
- **Modeling Coherent Backscattering Errors in Fiber Optic Gyroscopes for Sources of Arbitrary Line Width** *JOURNAL OF LIGHTWAVE TECHNOLOGY*
  Lloyd, S. W., Digonnet, M. J., Fan, S.
  2013; 31 (13): 2070-2078
- **Experimental Observation of Low Noise and Low Drift in a Laser-Driven Fiber Optic Gyroscope** *JOURNAL OF LIGHTWAVE TECHNOLOGY*
  Lloyd, S. W., Fan, S., Digonnet, M. J.
  2013; 31 (13): 2079-2085
- **Slow-Light Fiber-Bragg-Grating Strain Sensor With a 280-femtostrain/root Hz Resolution** *JOURNAL OF LIGHTWAVE TECHNOLOGY*
  Wen, H., Skolianos, G., Fan, S., Bernier, M., Vallee, R., Digonnet, M. J.
  2013; 31 (11): 1804-1808
- **Wireless power transfer in the presence of metallic plates: Experimental results** *AIP ADVANCES*
  Yu, X., Skauli, T., Skauli, B., Sandhu, S., Catrysse, P. B., Fan, S.
  2013; 3 (6)
- **A transparent electrode based on a metal nanotrough network.** *Nature nanotechnology*
  Wu, H., Kong, D., Ruan, Z., Hsu, P., Wang, S., Yu, Z., Carney, T. J., Hu, L., Fan, S., Cui, Y.
  2013; 8 (6): 421-425
- **Near-infrared surface plasmon polariton dispersion control with hyperbolic metamaterials** *OPTICS EXPRESS*
  Luk, T. S., Kim, I., Campione, S., Howell, S. W., Subramania, G. S., Grubbs, R. K., Brener, I., Chen, H., Fan, S., Sinclair, M. B.
  2013; 21 (9): 11107-11114
- **Upper bound on the modal material loss rate in plasmonic and metamaterial systems.** *Physical review letters*
  Raman, A., Shin, W., Fan, S.
  2013; 110 (18): 183901-?
- **Resonant cavity enhanced light harvesting in flexible thin-film organic solar cells** *OPTICS LETTERS*
  Sergeant, N. P., Niesen, B., Liu, A. S., Boman, L., Stoessel, C., Heremans, P., Peumans, P., Rand, B. P., Fan, S.
  2013; 38 (9): 1431-1433
- **Modal Source Radiator Model for Arbitrary Two-Dimensional Arrays of Subwavelength Apertures on Metal Films** *IEEE JOURNAL OF SELECTED TOPICS IN QUANTUM ELECTRONICS*
  Tanemura, T., Wahl, P., Fan, S., Miller, D. A.
  2013; 19 (3)
- **Upper Bound on the Modal Material Loss Rate in Plasmonic and Metamaterial Systems** *PHYSICAL REVIEW LETTERS*
  Raman, A., Shin, W., Fan, S.
  2013; 110 (18)
- **Compact bends for multi-mode photonic crystal waveguides with high transmission and suppressed modal crosstalk** *OPTICS EXPRESS*
  Liu, V., Fan, S.
  2013; 21 (7): 8069-8075
- **Ultrabroadband Photonic Structures To Achieve High-Performance Daytime Radiative Cooling** *NANO LETTERS*

Rephaeli, E., Raman, A., Fan, S.
2013; 13 (4): 1457-1461

- **Experimental Assessment of the Accuracy of an Advanced Photonic-Bandgap-Fiber Model** *JOURNAL OF LIGHTWAVE TECHNOLOGY*
  Aghaie, K. Z., Digonnet, M. J., Fan, S.
  2013; 31 (7): 1015-1022
- **Fluorescence Correlation Spectroscopy at High Concentrations using Gold Bowtie Nanoantennas (vol 406C, pg 3, 2012)** *CHEMICAL PHYSICS*
  Kinkhabwala, A. A., Yu, Z., Fan, S., Moerner, E.
  2013; 415: 309-309
- **Temporal coupled mode theory for thermal emission from a single thermal emitter supporting either a single mode or an orthogonal set of modes** *APPLIED PHYSICS LETTERS*
  Zhu, L., Sandhu, S., Otey, C., Fan, S., Sinclair, M. B., Luk, T. S.
  2013; 102 (10)
- **Experimental demonstration of a photonic Aharonov-Bohm effect at radio frequencies** *PHYSICAL REVIEW B*
  Fang, K., Yu, Z., Fan, S.
  2013; 87 (6)
- **Highly Tailored Computational Electromagnetics Methods for Nanophotonic Design and Discovery** *PROCEEDINGS OF THE IEEE*
  Liu, V., Miller, D. A., Fan, S.
  2013; 101 (2): 484-493
- **Transparent and conductive paper from nanocellulose fibers** *ENERGY & ENVIRONMENTAL SCIENCE*
  Hu, L., Zheng, G., Yao, J., Liu, N., Weil, B., Eskilsson, M., Karabulut, E., Ruan, Z., Fan, S., Bloking, J. T., McGehee, M. D., Wagberg, L., Cui, et al
  2013; 6 (2): 513-518
- **Tight-binding calculation of radiation loss in photonic crystal CROW** *OPTICS EXPRESS*
  Ma, J., Martinez, L. J., Fan, S., Povinelli, M. L.
  2013; 21 (2): 2463-2473
- **Fundamental bounds on decay rates in asymmetric single-mode optical resonators** *OPTICS LETTERS*
  Wang, K. X., Yu, Z., Sandhu, S., Fan, S.
  2013; 38 (2): 100-102
- **Detailed balance analysis of nanophotonic solar cells** *OPTICS EXPRESS*
  Sandhu, S., Yu, Z., Fan, S.
  2013; 21 (1): 1209-1217
- **Routing of Deep-Subwavelength Optical Beams and Images without Reflection and Diffraction Using Infinitely Anisotropic Metamaterials** *ADVANCED MATERIALS*
  Catrysse, P. B., Fan, S.
  2013; 25 (2): 194-198
- **Synthetic magnetic field directs photons** *PHOTONICS SPECTRA*
  Fan, S.
  2013; 47 (1): 28-?
- **Tight-binding calculation of radiation loss in photonic crystal CROW**
  Ma, J., Martinez, L., Fan, S., Povinelli, M. L., IEEE
  IEEE.2013
- **Limits on nanophotonic solar cell light trapping in the presence of parasitic losses**
  Raman, A., Fan, S., IEEE
  IEEE.2013
- **Enhancing far-field thermal emission with thermal extraction**
  Yu, Z., Sergeant, N., Skauli, T., Zhang, G., Wang, H., Fan, S., IEEE
  IEEE.2013

- **Dispersion control of near-infrared surface plasmon polariton using hyperbolic metamaterials**
  Kim, I., Campione, S., Howell, S. W., Subramania, G. S., Grubbs, R. K., Brener, I., Chen, H., Fan, S., Sinclair, M. B., Luk, T. S., IEEE
  IEEE.2013
- **Temporal Coupled mode theory for thermal emission from a single emitter**
  Zhu, L., Sandhu, S., Otey, C., Sinclair, M. B., Luk, T., Fan, S., IEEE
  IEEE.2013
- **Broadband Management of Light Using Nanophotonics for Solar and Thermal Applications**
  Fan, S., IEEE
  IEEE.2013
- **Transfer Printed Nanomembrane High-Q Filters Based on Displaced Double-Layer Fano Resonance Photonic Crystal Slabs**
  Shuai, Y., Zhao, D., Seo, J., Yang, H., Fan, S., Ma, Z., Zhou, W., IEEE
  IEEE.2013: 444-445
- **Optimization of non-periodic plasmonic light-trapping layers for thin-film solar cells.** *Nature communications*
  Pala, R. A., Liu, J. S., Barnard, E. S., Askarov, D., Garnett, E. C., Fan, S., Brongersma, M. L.
  2013; 4: 2095-?
- **Optimization of non-periodic plasmonic light-trapping layers for thin-film solar cells.** *Nature communications*
  Pala, R. A., Liu, J. S., Barnard, E. S., Askarov, D., Garnett, E. C., Fan, S., Brongersma, M. L.
  2013; 4: 2095-?
- **Modeling Loss and Backscattering in a Photonic-Bandgap Fiber Using Strong Perturbation** *Conference on Photonic and Phononic Properties of Engineered Nanostructures III*
  Aghaie, K. Z., Digonnet, M. J., Fan, S.
  SPIE-INT SOC OPTICAL ENGINEERING.2013
- **Photonic structures: advanced thermal control, and effective gauge field for light** *7th International Congress on Advanced Electromagnetic Materials in Microwaves and Optics (METAMATERIALS)*
  Fan, S., Yu, Z., Fang, K., Rephaeli, E., Raman, A.
  IEEE.2013: 232–233
- **Manipulating Thermal Electromagnetic Fields by Engineering Nanophotonic Resonances** *10th Conference on Lasers and Electro-Optics Pacific Rim (CLEO-PR)*
  Fan, S., Yu, Z., Rephaeli, E., Raman, A.
  IEEE.2013
- **Local density of states of chiral Hall edge states in gyrotropic photonic clusters** *Physical Review B*
  Fan, S., H., Asatryan, A., A., Botten, L., C., Fang et. al., K., J.
  2013; 88 (3)
- **Color-preserving daytime radiative cooling** *Applied Physics Letters*
  Zhu, L., X., Raman, A., Fan, S., H.
  2013; 103 (22)
- **Effective magnetic field for photons based on the magneto-optical effect** *Physical Review A*
  Fang, K., J., Fan, S., H.
  2013; 88 (4)
- **Deep subwavelength plasmonic waveguide switch in double graphene layer structure** *Applied Physics Letters*
  Iizuka, H., Fan, S., H.
  2013; 103 (23)
- **What is - and what is not - an optical isolator** *Nature Photonics*
  Fan, S., H., Jalas, D., Petrov, A., Eich et. al., M.
  2013; 7 (8): 579-582
- **Upper Bound on the Modal Material Loss Rate in Plasmonic and Metamaterial Systems** *Physical Review Letters*

Raman, A., Shin, W., Fan, S., H.
2013; 110 (18)

- **Two-photon transport through a waveguide coupling to a whispering-gallery resonator containing an atom and photon-blockade effect** *Physical Review A*
  Shi, T., Fan, S., H.
  2013; 87 (6)
- **Two-Dimensional Chalcogenide Nanoplates as Tunable Metamaterials via Chemical Intercalation** *Nano Letters*
  Fan, S., H., Cha, J., J., Koski, K., J., Huang et al., K., C. Y.
  2013; 13 (12): 5913-5918
- **Metamaterial band theory: fundamentals & applications** *Science China-Information Sciences*
  Raman, A., P., Shin, W., Fan, S., H.
  2013; 56 (12)
- **Experimental demonstration of a photonic Aharonov-Bohm effect at radio frequencies** *Physical Review B*
  Fang, K., J., Yu, Z., F., Fan, S., H.
  2013; 87 (6)
- **Coupled double-layer Fano resonance photonic crystal filters with lattice-displacement** *Applied Physics Letters*
  Fan, S., H., Shuai, Y., C., Zhao, D., Y., Chadha et al, A., S.
  2013; 103 (24)
- **Analytic Properties of Two-Photon Scattering Matrix in Integrated Quantum Systems Determined by the Cluster Decomposition Principle** *Physical Review Letters*
  Xu, S., S., Rephaeli, E., Fan, S., H.
  2013; 111 (22)
- **A transparent electrode based on a metal nanotrough network** *Nature Nanotechnology*
  Fan, S., H., Wu, H., Kong, S., D., Ruan et al., C., Z.
  2013; 8 (6): 421-425
- **Enhancing far-field thermal emission with thermal extraction** *Nature Communications*
  Fan, S., H., Yu, Z., Sergeant, N., P., Skauli et al., T.
  2013; 4
- **Broadband Sharp 90-degree Bends and T-Splitters in Plasmonic Coaxial Waveguides** *Nano Letters*
  Fan, S., H., Shin, W., Cai, W., S., Catrysse et al., P., B.
  2013; 13 (10): 4753-4758
- **Ultrahigh-contrast and large-bandwidth thermal rectification in near-field electromagnetic thermal transfer between nanoparticles** *Physical Review B*
  Zhu, L., X., Otey, C., R., Fan, S., H.
  2013; 88 (18)
- **Three-dimensional self-assembled photonic crystals with high temperature stability for thermal emission modification** *Nature Communications*
  Fan, S., H., Arpin, K., A., Losego, M., D., Cloud et. al., A., N.
  2013; 4
- **Fluorescence Correlation Spectroscopy at High Concentrations using Gold Bowtie Nanoantennas (vol 406C, pg 3, 2012)** *Chemical Physics*
  Kinkhabwala, A., A., Yu, Z., F., Fan et. al., S., H.
  2013; 415: 309
- **Controlling the Flow of Light Using the Inhomogeneous Effective Gauge Field that Emerges from Dynamic Modulation** *Physical Review Letters*
  Fang, K., J., Fan, S., H.
  2013; 111 (20)
- **Wireless power transfer in the presence of metallic plates: Experimental results** *Aip Advances*

Fan, S., H., Yu, X., F., Skauli, T., Skauli et. al., B.
2013; 3 (6)

- **Temporal coupled mode theory for thermal emission from a single thermal emitter supporting either a single mode or an orthogonal set of modes** *Applied Physics Letters*
  Fan, S., H., Zhu, L., X., Sandhu, S., Otey et. al., C.
  2013; 102 (10)
- **Optimization of non-periodic plasmonic light-trapping layers for thin-film solar cells** *Nature Communications*
  Fan, S., H., Pala, R., A., Liu, J., S. Q., Barnard et. al., E., S.
  2013; 4
- **Modal Source Radiator Model for Arbitrary Two-Dimensional Arrays of Subwavelength Apertures on Metal Films** *Ieee Journal of Selected Topics in Quantum Electronics*
  Tanemura, T., Wahl, P., Fan et. al., S., H.
  2013; 19 (3)
- **Enhancing far-field thermal emission with thermal extraction.** *Nature communications*
  Yu, Z., Sergeant, N. P., Skauli, T., Zhang, G., Wang, H., Fan, S.
  2013; 4: 1730-?
- **Optimization of non-periodic plasmonic light-trapping layers for thin-film solar cells** *Nature Communications*
  Fan, S., H., Pala, R., A., Liu, J., S. Q., Barnard et. al., E., S.
  2013; 4
- **Modal Source Radiator Model for Arbitrary Two-Dimensional Arrays of Subwavelength Apertures on Metal Films** *Ieee Journal of Selected Topics in Quantum Electronics*
  Tanemura, T., Wahl, P., Fan et. al., S., H.
  2013; 19 (3)
- **Enhancing far-field thermal emission with thermal extraction.** *Nature communications*
  Yu, Z., Sergeant, N. P., Skauli, T., Zhang, G., Wang, H., Fan, S.
  2013; 4: 1730-?
- **Enhancing the waveguide-resonator optical force with an all-optical on-chip analog of electromagnetically induced transparency** *PHYSICAL REVIEW A*
  Intaraprasonk, V., Fan, S.
  2012; 86 (6)
- **Ultra-compact photonic crystal waveguide spatial mode converter and its connection to the optical diode effect** *OPTICS EXPRESS*
  Liu, V., Miller, D. A., Fan, S.
  2012; 20 (27): 28388-28397
- **A simple Bayesian decision-theoretic design for dose-finding trials** *STATISTICS IN MEDICINE*
  Fan, S. K., Lu, Y., Wang, Y.
  2012; 31 (28): 3719-3730
- **On the Time to Conclusion of Phase II Cancer Clinical Trials and Its Application in Trial Designs** *STATISTICS IN BIOPHARMACEUTICAL RESEARCH*
  2012; 4 (4): 324-335
- **Few-Photon Single-Atom Cavity QED With Input-Output Formalism in Fock Space** *IEEE JOURNAL OF SELECTED TOPICS IN QUANTUM ELECTRONICS*
  Rephaeli, E., Fan, S.
  2012; 18 (6): 1754-1762
- **Realizing effective magnetic field for photons by controlling the phase of dynamic modulation** *NATURE PHOTONICS*
  Fang, K., Yu, Z., Fan, S.
  2012; 6 (11): 782-787
- **Thermodynamic Upper Bound on Broadband Light Coupling with Photonic Structures** *PHYSICAL REVIEW LETTERS*

Yu, Z., Raman, A., Fan, S.
2012; 109 (17)

- **Fluorescence correlation spectroscopy at high concentrations using gold bowtie nanoantennas** *CHEMICAL PHYSICS*
  Kinkhabwala, A. A., Yu, Z., Fan, S., Moerner, W. E.
  2012; 406: 3-8
- **Optical Absorption Enhancement in Freestanding GaAs Thin Film Nanopyramid Arrays** *ADVANCED ENERGY MATERIALS*
  Liang, D., Huo, Y., Kang, Y., Wang, K. X., Gu, A., Tan, M., Yu, Z., Li, S., Jia, J., Bao, X., Wang, S., Yao, Y., Wong, et al
  2012; 2 (10): 1254-1260
- **S-4: A free electromagnetic solver for layered periodic structures** *COMPUTER PHYSICS COMMUNICATIONS*
  Liu, V., Fan, S.
  2012; 183 (10): 2233-2244
- **Design for broadband on-chip isolator using stimulated Brillouin scattering in dispersion-engineered chalcogenide waveguides** *OPTICS EXPRESS*
  Poulton, C. G., Pant, R., Byrnes, A., Fan, S., Steel, M. J., Eggleton, B. J.
  2012; 20 (19): 21235-21246
- **Near-Field Radiative Cooling of Nanostructures** *NANO LETTERS*
  Guha, B., Otey, C., Poitras, C. B., Fan, S., Lipson, M.
  2012; 12 (9): 4546-4550
- **Photonic chip based tunable and reconfigurable narrowband microwave photonic filter using stimulated Brillouin scattering** *OPTICS EXPRESS*
  Byrnes, A., Pant, R., Li, E., Choi, D., Poulton, C. G., Fan, S., Madden, S., Luther-Davies, B., Eggleton, B. J.
  2012; 20 (17): 18836-18845
- **Electrically Driven Nonreciprocity Induced by Interband Photonic Transition on a Silicon Chip** *PHYSICAL REVIEW LETTERS*
  Lira, H., Yu, Z., Fan, S., Lipson, M.
  2012; 109 (3)
- **Rectification of evanescent heat transfer between dielectric-coated and uncoated silicon carbide plates** *JOURNAL OF APPLIED PHYSICS*
  Iizuka, H., Fan, S.
  2012; 112 (2)
- **Hybrid Silicon Nanocone-Polymer Solar Cells** *NANO LETTERS*
  Jeong, S., Garnett, E. C., Wang, S., Yu, Z., Fan, S., Brongersma, M. L., McGehee, M. D., Cui, Y.
  2012; 12 (6): 2971-2976
- **High-Efficiency Amorphous Silicon Solar Cell on a Periodic Nanocone Back Reflector** *ADVANCED ENERGY MATERIALS*
  Hsu, C., Battaglia, C., Pahud, C., Ruan, Z., Haug, F., Fan, S., Ballif, C., Cui, Y.
  2012; 2 (6): 628-633
- **Instantaneous electric energy and electric power dissipation in dispersive media** *JOURNAL OF THE OPTICAL SOCIETY OF AMERICA B-OPTICAL PHYSICS*
  Shin, W., Raman, A., Fan, S.
  2012; 29 (5): 1048-1054
- **Choice of the perfectly matched layer boundary condition for frequency-domain Maxwell's equations solvers** *JOURNAL OF COMPUTATIONAL PHYSICS*
  Shin, W., Fan, S.
  2012; 231 (8): 3406-3431
- **Temporal coupled-mode theory for light scattering by an arbitrarily shaped object supporting a single resonance** *PHYSICAL REVIEW A*
  Ruan, Z., Fan, S.
  2012; 85 (4)
- **Photonic Aharonov-Bohm Effect Based on Dynamic Modulation** *PHYSICAL REVIEW LETTERS*
  Fang, K., Yu, Z., Fan, S.

2012; 108 (15)

- **Stimulated Emission from a Single Excited Atom in a Waveguide** *PHYSICAL REVIEW LETTERS*
  Rephaeli, E., Fan, S.
  2012; 108 (14)
- **Resonant Fiber Optic Gyroscope Using an Air-Core Fiber** *JOURNAL OF LIGHTWAVE TECHNOLOGY*
  Terrel, M. A., Digonnet, M. J., Fan, S.
  2012; 30 (7): 931-937
- **Absorption Enhancement in Ultrathin Crystalline Silicon Solar Cells with Antireflection and Light-Trapping Nanocone Gratings** *NANO LETTERS*
  Wang, K. X., Yu, Z., Liu, V., Cui, Y., Fan, S.
  2012; 12 (3): 1616-1619
- **From Electromagnetically Induced Transparency to Superscattering with a Single Structure: A Coupled-Mode Theory for Doubly Resonant Structures** *PHYSICAL REVIEW LETTERS*
  Verslegers, L., Yu, Z., Ruan, Z., Catrysse, P. B., Fan, S.
  2012; 108 (8)
- **Resonance fluorescence in a waveguide geometry** *PHYSICAL REVIEW A*
  Kocabas, S. E., Rephaeli, E., Fan, S.
  2012; 85 (2)
- **Lossless intensity modulation in integrated photonics** *OPTICS EXPRESS*
  Sandhu, S., Fan, S.
  2012; 20 (4): 4280-4290
- **Broadband light management using low-Q whispering gallery modes in spherical nanoshells** *NATURE COMMUNICATIONS*
  Yao, Y., Yao, J., Narasimhan, V. K., Ruan, Z., Xie, C., Fan, S., Cui, Y.
  2012; 3
- **Negative differential thermal conductance through vacuum** *APPLIED PHYSICS LETTERS*
  Zhu, L., Otey, C. R., Fan, S.
  2012; 100 (4)
- **Comment on "Nonreciprocal Light Propagation in a Silicon Photonic Circuit"** *SCIENCE*
  Fan, S., Baets, R., Petrov, A., Yu, Z., Joannopoulos, J. D., Freude, W., Melloni, A., Popovic, M., Vanwolleghem, M., Jalas, D., Eich, M., Krause, M., Renner, et al
  2012; 335 (6064)
- **Temperature dependence of surface phonon polaritons from a quartz grating (vol 110, 043517, 2011)** *JOURNAL OF APPLIED PHYSICS*
  Hafeli, A. K., Rephaeli, E., Fan, S., Cahill, D. G., Tiwald, T. E.
  2012; 111 (1)
- **Temperature dependence of surface phonon polaritons from a quartz grating (vol 110, 043517, 2011)** *Journal of Applied Physics*
  Hafeli, A., K., Rephaeli, E., Fan et. al., S., H.
  2012; 111 (1)
- **Photonic Aharonov-Bohm Effect Based on Dynamic Modulation** *Physical Review Letters*
  Fang, K., J., Yu, Z., F., Fan, S., H.
  2012; 108 (15)
- **Negative differential thermal conductance through vacuum** *Applied Physics Letters*
  Zhu, L., Otey, C., R., Fan, S., H.
  2012; 100 (4)
- **Comment on "Nonreciprocal Light Propagation in a Silicon Photonic Circuit** *Science*
  Fan, S., H., Baets, R., Petrov et. al., A.
  2012; 335 (6064): 38; author reply 38

- **Broadband light management using low-Q whispering gallery modes in spherical nanoshells** *Nature Communications*
  Fan, S., H., Yao, Y., Yao, J., Narasimhan et. al., V., K.
  2012; 3
- **Stimulated Emission from a Single Excited Atom in a Waveguide** *Physical Review Letters*
  Rephaeli, E., Fan, S., H.
  2012; 108 (14)
- **Enhancing the waveguide-resonator optical force with an all-optical on-chip analog of electromagnetically induced transparency** *Physical Review A*
  Intaraprasonk, V., Fan, S., H.
  2012; 86 (6)
- **Electrically Driven Nonreciprocity Induced by Interband Photonic Transition on a Silicon Chip** *Physical Review Letters*
  Lira, H., Yu, Z., F., Fan et. al., S., H.
  2012; 109 (3)
- **Rectification of evanescent heat transfer between dielectric-coated and uncoated silicon carbide plates** *Journal of Applied Physics*
  Iizuka, H., Fan, S., H.
  2012; 112 (2)
- **Extraordinarily high spectral sensitivity in refractive index sensors using multiple optical modes** *Conference on Lasers and Electro-Optics (CLEO)*
  Yu, Z., Fan, S.
  IEEE.2012
- **Deep sub-wavelength beam propagation, beam manipulation and imaging with extreme anisotropic meta-materials** *Conference on Lasers and Electro-Optics (CLEO)*
  Catrysse, P. B., Fan, S.
  IEEE.2012
- **Photonic transitions can induce non-reciprocity and effective gauge field for photons** *5th International Workshop on Theoretical and Computational Nano-Photonics (TaCoNa-Photonics)*
  Fan, S., Fang, K., Yu, Z.
  AMER INST PHYSICS.2012: 16–17
- **Choice of the Perfectly Matched Layer boundary condition for iterative solvers of the frequency-domain Maxwell's equations** *Conference on Physics and Simulation of Optoelectronic Devices XX*
  Shin, W., Fan, S.
  SPIE-INT SOC OPTICAL ENGINEERING.2012
- **Improving fiber optic gyroscope performance using a laser and photonic-bandgap fiber** *22nd International Conference on Optical Fiber Sensors (OFS)*
  Lloyd, S., Fan, S., Digonnet, M. J.
  SPIE-INT SOC OPTICAL ENGINEERING.2012
- **Optical Transmission through Arbitrarily Located Subwavelength Apertures on Metal Films** *Conference on Lasers and Electro-Optics (CLEO)*
  Tanemura, T., Wahl, P., Fan, S., Miller, D. A.
  IEEE.2012
- **Sensing With Slow Light in Fiber Bragg Gratings** *IEEE SENSORS JOURNAL*
  Wen, H., Terrel, M., Fan, S., Digonnet, M.
  2012; 12 (1): 156-163
- **Enhancing the waveguide-resonator optical force with an all-optical on-chip analog of electromagnetically induced transparency** *Physical Review A*
  Intaraprasonk, V., Fan, S., H.
  2012; 86 (6)
- **Electrically Driven Nonreciprocity Induced by Interband Photonic Transition on a Silicon Chip** *Physical Review Letters*
  Lira, H., Yu, Z., F., Fan et. al., S., H.

2012; 109 (3)

- **Rectification of evanescent heat transfer between dielectric-coated and uncoated silicon carbide plates** *Journal of Applied Physics*
  Iizuka, H., Fan, S., H.
  2012; 112 (2)
- **Extraordinarily high spectral sensitivity in refractive index sensors using multiple optical modes** *Conference on Lasers and Electro-Optics (CLEO)*
  Yu, Z., Fan, S.
  IEEE.2012
- **Deep sub-wavelength beam propagation, beam manipulation and imaging with extreme anisotropic meta-materials** *Conference on Lasers and Electro-Optics (CLEO)*
  Catrysse, P. B., Fan, S.
  IEEE.2012
- **Photonic transitions can induce non-reciprocity and effective gauge field for photons** *5th International Workshop on Theoretical and Computational Nano-Photonics (TaCoNa-Photonics)*
  Fan, S., Fang, K., Yu, Z.
  AMER INST PHYSICS.2012: 16–17
- **Choice of the Perfectly Matched Layer boundary condition for iterative solvers of the frequency-domain Maxwell's equations** *Conference on Physics and Simulation of Optoelectronic Devices XX*
  Shin, W., Fan, S.
  SPIE-INT SOC OPTICAL ENGINEERING.2012
- **Improving fiber optic gyroscope performance using a laser and photonic-bandgap fiber** *22nd International Conference on Optical Fiber Sensors (OFS)*
  Lloyd, S., Fan, S., Digonnet, M. J.
  SPIE-INT SOC OPTICAL ENGINEERING.2012
- **Optical Transmission through Arbitrarily Located Subwavelength Apertures on Metal Films** *Conference on Lasers and Electro-Optics (CLEO)*
  Tanemura, T., Wahl, P., Fan, S., Miller, D. A.
  IEEE.2012
- **Sensing With Slow Light in Fiber Bragg Gratings** *IEEE SENSORS JOURNAL*
  Wen, H., Terrel, M., Fan, S., Digonnet, M.
  2012; 12 (1): 156-163
- **Numerically exact calculation of electromagnetic heat transfer between a dielectric sphere and plate** *PHYSICAL REVIEW B*
  Otey, C., Fan, S.
  2011; 84 (24)
- **Few-photon transport in a waveguide coupled to a pair of colocated two-level atoms** *PHYSICAL REVIEW A*
  Rephaeli, E., Kocabas, S. E., Fan, S.
  2011; 84 (6)
- **Two-photon transport in a waveguide coupled to a cavity in a two-level system** *PHYSICAL REVIEW A*
  Shi, T., Fan, S., Sun, C. P.
  2011; 84 (6)
- **Wireless energy transfer with the presence of metallic planes** *APPLIED PHYSICS LETTERS*
  Yu, X., Sandhu, S., Beiker, S., Sassoon, R., Fan, S.
  2011; 99 (21)
- **Ultracompact nonreciprocal optical isolator based on guided resonance in a magneto-optical photonic crystal slab** *OPTICS LETTERS*
  Fang, K., Yu, Z., Liu, V., Fan, S.
  2011; 36 (21): 4254-4256
- **Nanophotonic light-trapping theory for solar cells** *APPLIED PHYSICS A-MATERIALS SCIENCE & PROCESSING*
  Yu, Z., Raman, A., Fan, S.

2011; 105 (2): 329-339

- **Dielectric nanostructures for broadband light trapping in organic solar cells** *OPTICS EXPRESS*
  Raman, A., Yu, Z., Fan, S.
  2011; 19 (20): 19015-19026
- **OPTICAL ISOLATION A non-magnetic approach** *NATURE PHOTONICS*
  Yu, Z., Fan, S.
  2011; 5 (9): 517-519
- **Temperature dependence of surface phonon polaritons from a quartz grating** *JOURNAL OF APPLIED PHYSICS*
  Hafeli, A. K., Rephaeli, E., Fan, S., Cahill, D. G., Tiwald, T. E.
  2011; 110 (4)
- **Microscopic theory of photonic one-way edge mode** *PHYSICAL REVIEW B*
  Fang, K., Yu, Z., Fan, S.
  2011; 84 (7)
- **Efficient computation of equifrequency surfaces and density of states in photonic crystals using Dirichlet-to-Neumann maps** *JOURNAL OF THE OPTICAL SOCIETY OF AMERICA B-OPTICAL PHYSICS*
  Liu, V., Fan, S.
  2011; 28 (8): 1837-1843
- **Complete All-Optical Silica Fiber Isolator via Stimulated Brillouin Scattering** *JOURNAL OF LIGHTWAVE TECHNOLOGY*
  Huang, X., Fan, S.
  2011; 29 (15): 2267-2275
- **Nonvolatile bistable all-optical switch from mechanical buckling** *APPLIED PHYSICS LETTERS*
  Intaraprasonk, V., Fan, S.
  2011; 98 (24)
- **Transverse Electromagnetic Modes in Aperture Waveguides Containing a Metamaterial with Extreme Anisotropy** *PHYSICAL REVIEW LETTERS*
  Catrysse, P. B., Fan, S.
  2011; 106 (22)
- **Perturbation theory for plasmonic modulation and sensing** *PHYSICAL REVIEW B*
  Raman, A., Fan, S.
  2011; 83 (20)
- **Extraordinarily high spectral sensitivity in refractive index sensors using multiple optical modes** *OPTICS EXPRESS*
  Yu, Z., Fan, S.
  2011; 19 (11): 10029-10040
- **Image transfer with subwavelength resolution to metal-dielectric interface** *JOURNAL OF THE OPTICAL SOCIETY OF AMERICA B-OPTICAL PHYSICS*
  Intaraprasonk, V., Yu, Z., Fan, S.
  2011; 28 (5): 1335-1338
- **Experimental demonstration of two methods for controlling the group delay in a system with photonic-crystal resonators coupled to a waveguide** *OPTICS LETTERS*
  Huo, Y., Sandhu, S., Pan, J., Stuhrmann, N., Povinelli, M. L., Kahn, J. M., Harris, J. S., Fejer, M. M., Fan, S.
  2011; 36 (8): 1482-1484
- **Design methodology for compact photonic-crystal-based wavelength division multiplexers** *OPTICS LETTERS*
  Liu, V., Jiao, Y., Miller, D. A., Fan, S.
  2011; 36 (4): 591-593
- **Design of subwavelength superscattering nanospheres** *APPLIED PHYSICS LETTERS*
  Ruan, Z., Fan, S.
  2011; 98 (4)

- **Low Reflectivity and High Flexibility of Tin-Doped Indium Oxide Nanofiber Transparent Electrodes** *JOURNAL OF THE AMERICAN CHEMICAL SOCIETY*
  Wu, H., Hu, L., Carney, T., Ruan, Z., Kong, D., Yu, Z., Yao, Y., Cha, J. J., Zhu, J., Fan, S., Cui, Y.
  2011; 133 (1): 27-29
- **Angular constraint on light-trapping absorption enhancement in solar cells** *APPLIED PHYSICS LETTERS*
  Yu, Z., Fan, S.
  2011; 98 (1)
- **Tight Binding Model Study of Photonic One-Way Edge Mode** *Conference on Lasers and Electro-Optics (CLEO)*
  Fang, K., Yu, Z., Fan, S.
  IEEE.2011
- **Nanophotonic light-trapping theory for solar cells** *Applied Physics a-Materials Science & Processing*
  Yu, Z., F., Raman, A., Fan, S., H.
  2011; 2: 105
- **Angular constraint on light-trapping absorption enhancement in solar cells** *Applied Physics Letters*
  Yu, Z., F., Fan, S., H.
  2011; 98 (1)
- **Two-photon transport in a waveguide coupled to a cavity in a two-level system** *Physical Review A*
  Shi, T., Fan, S., H., Sun, C., P.
  2011; 84 (6)
- **Temperature dependence of surface phonon polaritons from a quartz grating** *ournal of Applied Physics*
  Hafeli, A., K., Rephaeli, E., Fan et. al., S., H.
  2011; 110 (4)
- **Perturbation theory for plasmonic modulation and sensing** *Physical Review B*
  Raman, A., Fan, S., H.
  2011; 83 (20)
- **Few-photon transport in a waveguide coupled to a pair of colocated two-level atoms** *Physical Review A*
  Rephaeli, E., Kocabas, S., E., Fan, S., H.
  2011; 84 (6)
- **Nonvolatile bistable all-optical switch from mechanical buckling** *Applied Physics Letters*
  Intaraprasonk, V., Fan, S., H.
  2011; 98 (24)
- **Transverse Electromagnetic Modes in Aperture Waveguides Containing a Metamaterial with Extreme Anisotropy** *Physical Review Letters*
  Catrysse, P., B., Fan, S., H.
  2011; 106 (22)
- **Numerically exact calculation of electromagnetic heat transfer between a dielectric sphere and plate** *Physical Review B*
  Otey, C., Fan, S., H.
  2011; 84 (24)
- **Microscopic theory of photonic one-way edge mode** *Physical Review B*
  Fang, K., J., Yu, Z., F., Fan, S., H.
  2011; 84 (7)
- **Design of subwavelength superscattering nanospheres** *Applied Physics Letters*
  Ruan, Z., C., Fan, S., H.
  2011; 98 (4)
- **Transverse electro-magnetic modes in apertures filled with an extreme anisotropic meta-material** *Conference on Lasers and Electro-Optics (CLEO)*
  Catrysse, P. B., Fan, S.

IEEE.2011

- **Temporal Coupled-Mode Theory for Resonant Apertures** *Conference on Lasers and Electro-Optics (CLEO)*
  Verslegers, L., Yu, Z., Catrysse, P. B., Ruan, Z., Fan, S.
  IEEE.2011
- **Dielectric nanostructures for broadband light trapping in organic solar cells** *Conference on Lasers and Electro-Optics (CLEO)*
  Raman, A., Yu, Z., Fan, S.
  IEEE.2011
- **Tactical-grade interferometric fiber optic gyroscope driven with a narrow-linewidth laser** *21st International Conference on Optical Fiber Sensors*
  Lloyd, S. W., Digonnet, M. J., Fan, S.
  SPIE-INT SOC OPTICAL ENGINEERING.2011
- **Slow Light in Fiber Bragg Gratings** *Conference on Advances in Slow and Fast Light IV*
  Wen, H., Skolianos, G., Fan, S., Digonnet, M.
  SPIE-INT SOC OPTICAL ENGINEERING.2011
- **Integrated photonic structures for parallel fluorescence and refractive index biosensing** *Conference on Photonic Microdevices/Microstructures for Sensing III*
  Lee, M. M., O'Sullivan, T. D., Cerruto, A., Liu, V., Zhang, J., Levi, O., Lee, H., Brueck, S. R., Fan, S., Harris, J. S.
  SPIE-INT SOC OPTICAL ENGINEERING.2011
- **Slow Light in Fiber Bragg Gratings** *Conference on Advances in Slow and Fast Light IV*
  Wen, H., Skolianos, G., Fan, S., Digonnet, M.
  SPIE-INT SOC OPTICAL ENGINEERING.2011
- **Integrated photonic structures for parallel fluorescence and refractive index biosensing** *Conference on Photonic Microdevices/Microstructures for Sensing III*
  Lee, M. M., O'Sullivan, T. D., Cerruto, A., Liu, V., Zhang, J., Levi, O., Lee, H., Brueck, S. R., Fan, S., Harris, J. S.
  SPIE-INT SOC OPTICAL ENGINEERING.2011
- **Input-output formalism for few-photon transport in one-dimensional nanophotonic waveguides coupled to a qubit** *PHYSICAL REVIEW A*
  Fan, S., Kocabas, S. E., Shen, J.
  2010; 82 (6)
- **Elements for Plasmonic Nanocircuits with Three-Dimensional Slot Waveguides** *ADVANCED MATERIALS*
  Cai, W., Shin, W., Fan, S., Brongersma, M. L.
  2010; 22 (45): 5120-?
- **Nanostructured photon management for high performance solar cells** *MATERIALS SCIENCE & ENGINEERING R-REPORTS*
  Zhu, J., Yu, Z., Fan, S., Cui, Y.
  2010; 70 (3-6): 330-340
- **Sensitivity enhancement in photonic crystal slab biosensors** *OPTICS EXPRESS*
  El Beheiry, M., Liu, V., Fan, S., Levi, O.
  2010; 18 (22): 22702-22714
- **Fundamental limit of nanophotonic light trapping in solar cells** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
  Yu, Z., Raman, A., Fan, S.
  2010; 107 (41): 17491-17496
- **The MicroArray Quality Control (MAQC)-II study of common practices for the development and validation of microarray-based predictive models** *PHARMACOGENOMICS JOURNAL*
  Shi, L., Campbell, G., Jones, W. D., Campagne, F., Wen, Z., Walker, S. J., Su, Z., Chu, T., Goodsaid, F. M., Pusztai, L., Shaughnessy, J. D., Oberthuer, A., Thomas, et al
  2010: S5-S16
- **Temporal coupled-mode theory for resonant apertures** *JOURNAL OF THE OPTICAL SOCIETY OF AMERICA B-OPTICAL PHYSICS*

Verslegers, L., Yu, Z., Catrysse, P. B., Fan, S.
2010; 27 (10): 1947-1956

- **Exponential suppression of thermal conductance using coherent transport and heterostructures** *PHYSICAL REVIEW B*
  Lau, W. T., Shen, J., Fan, S.
  2010; 82 (11)
- **Fundamental limit of light trapping in grating structures** *OPTICS EXPRESS*
  Yu, Z., Raman, A., Fan, S.
  2010; 18 (19): A366-A380
- **Full inversion of a two-level atom with a single-photon pulse in one-dimensional geometries** *PHYSICAL REVIEW A*
  Rephaeli, E., Shen, J., Fan, S.
  2010; 82 (3)
- **Tuning the coherent interaction in an on-chip photonic-crystal waveguide-resonator system** *APPLIED PHYSICS LETTERS*
  Pan, J., Huo, Y., Sandhu, S., Stuhrmann, N., Povinelli, M. L., Harris, J. S., Fejer, M. M., Fan, S.
  2010; 97 (10)
- **Quantum critical coupling conditions for zero single-photon transmission through a coupled atom-resonator-waveguide system** *PHYSICAL REVIEW A*
  Shen, J., Fan, S.
  2010; 82 (2)
- **Nanopatterned Metallic Films for Use As Transparent Conductive Electrodes in Optoelectronic Devices** *NANO LETTERS*
  Catrysse, P. B., Fan, S.
  2010; 10 (8): 2944-2949
- **The MicroArray Quality Control (MAQC)-IIII study of common practices for the development and validation of microarray-based predictive models** *NATURE BIOTECHNOLOGY*
  Shi, L., Campbell, G., Jones, W. D., Campagne, F., Wen, Z., Walker, S. J., Su, Z., Chu, T., Goodsaid, F. M., Pusztai, L., Shaughnessy, J. D., Oberthuer, A., Thomas, et al
  2010; 28 (8): 827-U109
- **Superscattering of Light from Subwavelength Nanostructures** *PHYSICAL REVIEW LETTERS*
  Ruan, Z., Fan, S.
  2010; 105 (1)
- **Optimization of the splice loss between photonic-bandgap fibers and conventional single-mode fibers** *OPTICS LETTERS*
  Aghaie, K. Z., Digonnet, M. J., Fan, S.
  2010; 35 (12): 1938-1940
- **Enhancing optical switching with coherent control** *APPLIED PHYSICS LETTERS*
  Sandhu, S., Povinelli, M. L., Fan, S.
  2010; 96 (23)
- **Nanodome Solar Cells with Efficient Light Management and Self-Cleaning** *NANO LETTERS*
  Zhu, J., Hsu, C., Yu, Z., Fan, S., Cui, Y.
  2010; 10 (6): 1979-1984
- **Birefringence Analysis of Photonic-Bandgap Fibers Using the Hexagonal Yee's Cell** *IEEE JOURNAL OF QUANTUM ELECTRONICS*
  Aghaie, K. Z., Fan, S., Digonnet, M. J.
  2010; 46 (6): 920-930
- **Combining radiationless interference with evanescent field amplification** *OPTICS LETTERS*
  Intaraprasonk, V., Yu, Z., Fan, S.
  2010; 35 (10): 1659-1661
- **Temporal Coupled-Mode Theory for Fano Resonance in Light Scattering by a Single Obstacle** *JOURNAL OF PHYSICAL CHEMISTRY C*
  Ruan, Z., Fan, S.
  2010; 114 (16): 7324-7329

- **Thermal Rectification through Vacuum** *PHYSICAL REVIEW LETTERS*
  Otey, C. R., Lau, W. T., Fan, S.
  2010; 104 (15)
- **Enhancement of optical absorption in thin-film organic solar cells through the excitation of plasmonic modes in metallic gratings** *APPLIED PHYSICS LETTERS*
  Min, C., Li, J., Veronis, G., Lee, J., Fan, S., Peumans, P.
  2010; 96 (13)
- **Phase front design with metallic pillar arrays** *OPTICS LETTERS*
  Verslegers, L., Catrysse, P. B., Yu, Z., Shin, W., Ruan, Z., Fan, S.
  2010; 35 (6): 844-846
- **Integrated Nonmagnetic Optical Isolators Based on Photonic Transitions** *IEEE JOURNAL OF SELECTED TOPICS IN QUANTUM ELECTRONICS*
  Yu, Z., Fan, S.
  2010; 16 (2): 459-466
- **Multiplexed Five-Color Molecular Imaging of Cancer Cells and Tumor Tissues with Carbon Nanotube Raman Tags in the Near-Infrared** *NANO RESEARCH*
  Liu, Z., Tabakman, S., Sherlock, S., Li, X., Chen, Z., Jiang, K., Fan, S., Dai, H.
  2010; 3 (3): 222-233
- **Transmission Through a Scalar Wave Three-Dimensional Electromagnetic Metamaterial and the Implication for Polarization Control** *JOURNAL OF NANOSCIENCE AND NANOTECHNOLOGY*
  Shin, J., Shen, J., Fan, S.
  2010; 10 (3): 1737-1740
- **Mapping local optical densities of states in silicon photonic structures with nanoscale electron spectroscopy** *PHYSICAL REVIEW B*
  Cha, J. J., Yu, Z., Smith, E., Couillard, M., Fan, S., Muller, D. A.
  2010; 81 (11)
- **Photonic Band Structure of Dispersive Metamaterials Formulated as a Hermitian Eigenvalue Problem** *PHYSICAL REVIEW LETTERS*
  Raman, A., Fan, S.
  2010; 104 (8)
- **Semiconductor Nanowire Optical Antenna Solar Absorbers** *NANO LETTERS*
  Cao, L., Fan, P., Vasudev, A. P., White, J. S., Yu, Z., Cai, W., Schuller, J. A., Fan, S., Brongersma, M. L.
  2010; 10 (2): 439-445
- **NANOPHOTONICS Magnet-controlled plasmons** *NATURE PHOTONICS*
  Fan, S.
  2010; 4 (2): 76-77
- **Measurement of reduced backscattering noise in laser-driven fiber optic gyroscopes** *OPTICS LETTERS*
  Lloyd, S. W., Dangui, V., Digonnet, M. J., Fan, S., Kino, G. S.
  2010; 35 (2): 121-123
- **Optical resonances created by photonic transitions** *APPLIED PHYSICS LETTERS*
  Yu, Z., Fan, S.
  2010; 96 (1)
- **Directional Photofluidization Lithography for Nanoarchitectures with Controlled Shapes and Sizes** *NANO LETTERS*
  Lee, S., Shin, J., Lee, Y., Fan, S., Park, J.
  2010; 10 (1): 296-304
- **Quantum critical coupling conditions for zero single-photon transmission through a coupled atom-resonator-waveguide system** *Physical Review A*
  Shen, J., T., Fan, S., H.
  2010; 82 (2)

- **Photonic Band Structure of Dispersive Metamaterials Formulated as a Hermitian Eigenvalue Problem** *Physical Review Letters*
  Raman, A., Fan, S., H.
  2010; 104 (8)
- **Optical resonances created by photonic transitions** *Applied Physics Letters*
  Yu, Z., F., Fan, S., H.
  2010; 96 (1)
- **Mapping local optical densities of states in silicon photonic structures with nanoscale electron spectroscopy** *Physical Review B*
  Fan, S., H., Cha, J., J., Yu, Z., F., Smith et. al., E.
  2010; 81 (11)
- **Enhancing optical switching with coherent control** *Applied Physics Letters*
  Sandhu, S., Povinelli, M., L., Fan, S., H.
  2010; 96 (23)
- **Deep-subwavelength focusing and steering of light in an aperiodic metallic waveguide array** *Conference on Integrated Optics - Devices, Materials, and Technologies XIV*
  Verslegers, L., Catrysse, P. B., Yu, Z., Fan, S.
  SPIE-INT SOC OPTICAL ENGINEERING.2010
- **Optimizing Nano-patterned Metal Films for Use as Transparent Electrodes in Optoelectronic Devices** *Conference on Lasers and Electro-Optics (CLEO)/Quantum Electronics and Laser Science Conference (QELS)*
  Catrysse, P. B., Fan, S.
  IEEE.2010
- **Dynamic Photonic Structure for Integrated Photonics** *Conference on Optoelectronic Integrated Circuits XII*
  Yu, Z., Fan, S.
  SPIE-INT SOC OPTICAL ENGINEERING.2010
- **Temporal coupled-mode theory for the Fano resonance in light scattering and its applications** *Conference on Lasers and Electro-Optics (CLEO)/Quantum Electronics and Laser Science Conference (QELS)*
  Ruan, Z., Fan, S.
  IEEE.2010
- **LIMIT OF NANOPHOTONIC LIGHT-TRAPPING IN SOLAR CELLS** *35th IEEE Photovoltaic Specialists Conference*
  Yu, Z., Raman, A., Fan, S.
  IEEE.2010: 76–78
- **Fundamental Limit of Nanophotonic Light-trapping in Solar Cells** *Conference on Lasers and Electro-Optics (CLEO)/Quantum Electronics and Laser Science Conference (QELS)*
  Yu, Z., Raman, A., Fan, S.
  IEEE.2010
- **Fundamental Limit of Nanophotonic Light-trapping in Solar Cells** *Conference on Next Generation (Nano) Photonic and Cell Technologies for Solar Energy Conversion*
  Yu, Z., Raman, A., Fan, S.
  SPIE-INT SOC OPTICAL ENGINEERING.2010
- **Phase Front Design with Metallic Pillar Arrays** *Conference on Lasers and Electro-Optics (CLEO)/Quantum Electronics and Laser Science Conference (QELS)*
  Verslegers, L., Catrysse, P. B., Yu, Z., Shin, W., Ruan, Z., Fan, S.
  IEEE.2010
- **Experimental demonstration of an all-optical analogue to the superradiance effect in an on-chip photonic crystal resonator system** *PHYSICAL REVIEW B*
  Pan, J., Sandhu, S., Huo, Y., Stuhrmann, N., Povinelli, M. L., Harris, J. S., Fejer, M. M., Fan, S.
  2010; 81 (4)
- **Thermal Rectification through Vacuum** *Physical Review Letters*
  Otey, C., R., Lau, W., T., Fan, S., H.

2010; 104 (15)

- **Superscattering of Light from Subwavelength Nanostructures** *Physical Review Letters*
  Ruan, Z., C., Fan, S., H.
  2010; 105 (1)
- **Elements for Plasmonic Nanocircuits with Three-Dimensional Slot Waveguides** *Advanced Materials*
  Cai, W., S., Shin, W., Fan et. al., S., H.
  2010; 22 (45): 5120-+
- **Quantum critical coupling conditions for zero single-photon transmission through a coupled atom-resonator-waveguide system** *Physical Review A*
  Shen, J., T., Fan, S., H.
  2010; 82 (2)
- **Photonic Band Structure of Dispersive Metamaterials Formulated as a Hermitian Eigenvalue Problem** *Physical Review Letters*
  Raman, A., Fan, S., H.
  2010; 104 (8)
- **Optical resonances created by photonic transitions** *Applied Physics Letters*
  Yu, Z., F., Fan, S., H.
  2010; 96 (1)
- **Mapping local optical densities of states in silicon photonic structures with nanoscale electron spectroscopy** *Physical Review B*
  Fan, S., H., Cha, J., J., Yu, Z., F., Smith et. al., E.
  2010; 81 (11)
- **Enhancing optical switching with coherent control** *Applied Physics Letters*
  Sandhu, S., Povinelli, M., L., Fan, S., H.
  2010; 96 (23)
- **Deep-subwavelength focusing and steering of light in an aperiodic metallic waveguide array** *Conference on Integrated Optics - Devices, Materials, and Technologies XIV*
  Verslegers, L., Catrysse, P. B., Yu, Z., Fan, S.
  SPIE-INT SOC OPTICAL ENGINEERING.2010
- **Optimizing Nano-patterned Metal Films for Use as Transparent Electrodes in Optoelectronic Devices** *Conference on Lasers and Electro-Optics (CLEO)/Quantum Electronics and Laser Science Conference (QELS)*
  Catrysse, P. B., Fan, S.
  IEEE.2010
- **Dynamic Photonic Structure for Integrated Photonics** *Conference on Optoelectronic Integrated Circuits XII*
  Yu, Z., Fan, S.
  SPIE-INT SOC OPTICAL ENGINEERING.2010
- **Temporal coupled-mode theory for the Fano resonance in light scattering and its applications** *Conference on Lasers and Electro-Optics (CLEO)/Quantum Electronics and Laser Science Conference (QELS)*
  Ruan, Z., Fan, S.
  IEEE.2010
- **LIMIT OF NANOPHOTONIC LIGHT-TRAPPING IN SOLAR CELLS** *35th IEEE Photovoltaic Specialists Conference*
  Yu, Z., Raman, A., Fan, S.
  IEEE.2010: 76–78
- **Fundamental Limit of Nanophotonic Light-trapping in Solar Cells** *Conference on Lasers and Electro-Optics (CLEO)/Quantum Electronics and Laser Science Conference (QELS)*
  Yu, Z., Raman, A., Fan, S.
  IEEE.2010
- **Fundamental Limit of Nanophotonic Light-trapping in Solar Cells** *Conference on Next Generation (Nano) Photonic and Cell Technologies for Solar Energy Conversion*

Yu, Z., Raman, A., Fan, S.
SPIE-INT SOC OPTICAL ENGINEERING.2010

- **Phase Front Design with Metallic Pillar Arrays** *Conference on Lasers and Electro-Optics (CLEO)/Quantum Electronics and Laser Science Conference (QELS)*
  Verslegers, L., Catrysse, P. B., Yu, Z., Shin, W., Ruan, Z., Fan, S.
  IEEE.2010
- **Experimental demonstration of an all-optical analogue to the superradiance effect in an on-chip photonic crystal resonator system** *PHYSICAL REVIEW B*
  Pan, J., Sandhu, S., Huo, Y., Stuhrmann, N., Povinelli, M. L., Harris, J. S., Fejer, M. M., Fan, S.
  2010; 81 (4)
- **Resonance-enhanced optical forces between coupled photonic crystal slabs** *OPTICS EXPRESS*
  Liu, V., Povinelli, M., Fan, S.
  2009; 17 (24): 21897-21909
- **Two-electron transport in a quantum waveguide having a single Anderson impurity** *NEW JOURNAL OF PHYSICS*
  Shen, J., Fan, S.
  2009; 11
- **Large single-molecule fluorescence enhancements produced by a bowtie nanoantenna** *NATURE PHOTONICS*
  Kinkhabwala, A., Yu, Z., Fan, S., Avlasevich, Y., Muellen, K., Moerner, W. E.
  2009; 3 (11): 654-657
- **Wave-vector space picture for radiationless focusing and beaming** *OPTICS LETTERS*
  Intaraprasonk, V., Fan, S.
  2009; 34 (19): 2967-2969
- **Universal features of coherent photonic thermal conductance in multilayer photonic band gap structures** *PHYSICAL REVIEW B*
  Lau, W. T., Shen, J., Fan, S.
  2009; 80 (15)
- **Side-coupled cavity model for surface plasmon-polariton transmission across a groove** *OPTICS EXPRESS*
  Liu, J. S., White, J. S., Fan, S., Brongersma, M. L.
  2009; 17 (20): 17837-17848
- **Ring-coupled Mach-Zehnder interferometer optimized for sensing** *APPLIED OPTICS*
  Terrel, M., Digonnet, M. J., Fan, S.
  2009; 48 (26): 4874-4879
- **Performance comparison of slow-light coupled-resonator optical gyroscopes** *LASER & PHOTONICS REVIEWS*
  Terrel, M., Digonnet, M. J., Fan, S.
  2009; 3 (5): 452-465
- **Classification of the Core Modes of Hollow-Core Photonic-Bandgap Fibers** *IEEE JOURNAL OF QUANTUM ELECTRONICS*
  Aghaie, K. Z., Dangui, V., Digonnet, M. J., Fan, S., Kino, G. S.
  2009; 45 (9): 1192-1200
- **Overcoming gain-bandwidth product constraint in slow light Raman amplification with the use of light-stopping schemes** *APPLIED PHYSICS LETTERS*
  Sandhu, S., Povinelli, M. L., Fan, S.
  2009; 95 (8)
- **Planar metallic nanoscale slit lenses for angle compensation** *APPLIED PHYSICS LETTERS*
  Verslegers, L., Catrysse, P. B., Yu, Z., Fan, S.
  2009; 95 (7)
- **Absorber and emitter for solar thermophotovoltaic systems to achieve efficiency exceeding the Shockley-Queisser limit** *OPTICS EXPRESS*
  Rephaeli, E., Fan, S.

2009; 17 (17): 15145-15159

- **Enhancement of optics-to-THz conversion efficiency by metallic slot waveguides** *OPTICS EXPRESS*
  Ruan, Z., Veronis, G., Vodopyanov, K. L., Fejer, M. M., Fan, S.
  2009; 17 (16): 13502-13515
- **Modeling of Plasmonic Waveguide Components and Networks** *JOURNAL OF COMPUTATIONAL AND THEORETICAL NANOSCIENCE*
  Veronis, G., Kocabas, S. E., Miller, D. A., Fan, S.
  2009; 6 (8): 1808-1826
- **Measurements of the Birefringence and Verdet Constant in an Air-Core Fiber** *JOURNAL OF LIGHTWAVE TECHNOLOGY*
  Wen, H., Terrel, M. A., Kim, H. K., Digonnet, M. J., Fan, S.
  2009; 27 (15): 3194-3201
- **Deep-Subwavelength Focusing and Steering of Light in an Aperiodic Metallic Waveguide Array** *PHYSICAL REVIEW LETTERS*
  Verslegers, L., Catrysse, P. B., Yu, Z., Fan, S.
  2009; 103 (3)
- **Understanding the dispersion of coaxial plasmonic structures through a connection with the planar metal-insulator-metal geometry** *APPLIED PHYSICS LETTERS*
  Catrysse, P. B., Fan, S.
  2009; 94 (23)
- **Capturing light pulses into a pair of coupled photonic crystal cavities** *APPLIED PHYSICS LETTERS*
  Otey, C. R., Povinelli, M. L., Fan, S.
  2009; 94 (23)
- **Optical isolation based on nonreciprocal phase shift induced by interband photonic transitions** *APPLIED PHYSICS LETTERS*
  Yu, Z., Fan, S.
  2009; 94 (17)
- **Three-Dimensional Metamaterials with an Ultrahigh Effective Refractive Index over a Broad Bandwidth** *PHYSICAL REVIEW LETTERS*
  Shin, J., Shen, J., Fan, S.
  2009; 102 (9)
- **Extraordinary optical absorption through subwavelength slits** *OPTICS LETTERS*
  White, J. S., Veronis, G., Yu, Z., Barnard, E. S., Chandran, A., Fan, S., Brongersma, M. L.
  2009; 34 (5): 686-688
- **Complete optical isolation created by indirect interband photonic transitions** *NATURE PHOTONICS*
  Yu, Z., Fan, S.
  2009; 3 (2): 91-94
- **Theory of single-photon transport in a single-mode waveguide. II. Coupling to a whispering-gallery resonator containing a two-level atom** *PHYSICAL REVIEW A*
  Shen, J., Fan, S.
  2009; 79 (2)
- **Theory of single-photon transport in a single-mode waveguide. I. Coupling to a cavity containing a two-level atom** *PHYSICAL REVIEW A*
  Shen, J., Fan, S.
  2009; 79 (2)
- **Optical Absorption Enhancement in Amorphous Silicon Nanowire and Nanocone Arrays** *NANO LETTERS*
  Zhu, J., Yu, Z., Burkhard, G. F., Hsu, C., Connor, S. T., Xu, Y., Wang, Q., McGehee, M., Fan, S., Cui, Y.
  2009; 9 (1): 279-282
- **Planar Lenses Based on Nanoscale Slit Arrays in a Metallic Film** *Conference on Lasers and Electro-Optics/Quantum Electronics and Laser Science Conference (CLEO/QELS 2009)*
  Verslegers, L., Catrysse, P. B., Yu, Z., White, J. S., Barnard, E. S., Brongersma, M. L., Fan, S.
  IEEE.2009: 3224–3225

- **Simple Analytical Expression for the Dispersion of Plasmonic Structures with Coaxial Geometry** *Conference on Lasers and Electro-Optics/ Quantum Electronics and Laser Science Conference (CLEO/QELS 2009)*
  Catrysse, P. B., Fan, S.
  IEEE.2009: 1838–1839
- **Integrated nanophotonics: dynamic optical isolation, and nanoscale far-field focusing in aperiodic plasmonic waveguide array** *22nd Annual Meeting of the IEEE-Photonics-Society*
  Fan, S., Yu, Z., Verslegers, L., Catrysse, P.
  IEEE.2009: 646–647
- **Light Trapping With a Few Cavities** *Conference on Advances in Slow and Fast Light II*
  Otey, C. R., Povinelli, M. L., Fan, S.
  SPIE-INT SOC OPTICAL ENGINEERING.2009
- **Minimizing Coherent Thermal Conductance Using Multi-Layer Photonic Crystal Heterostructures** *Conference on Lasers and Electro-Optics/ Quantum Electronics and Laser Science Conference (CLEO/QELS 2009)*
  Lau, W. T., Shen, J., Fan, S.
  IEEE.2009: 2035–2036
- **Performance Limitation of a Coupled Resonant Optical Waveguide Gyroscope** *JOURNAL OF LIGHTWAVE TECHNOLOGY*
  Terrel, M. A., Digonnet, M. J., Fan, S.
  2009; 27 (1-4): 47-54
- **Modal analysis and coupling in metal-insulator-metal waveguides** *PHYSICAL REVIEW B*
  Kocabas, S. E., Veronis, G., Miller, D. A., Fan, S.
  2009; 79 (3)
- **Planar Lenses Based on Nanoscale Slit Arrays in a Metallic Film** *NANO LETTERS*
  Verslegers, L., Catrysse, P. B., Yu, Z., White, J. S., Barnard, E. S., Brongersma, M. L., Fan, S.
  2009; 9 (1): 235-238
- **Two-electron transport in a quantum waveguide having a single Anderson impurity** *New Journal of Physics*
  Shen, J., T., Fan, S., H.
  2009; 11
- **Planar metallic nanoscale slit lenses for angle compensation** *Applied Physics Letters*
  Fan, S., H., Verslegers, L., Catrysse, P., B., Yu et. al., Z., F.
  2009; 95 (7)
- **Deep-Subwavelength Focusing and Steering of Light in an Aperiodic Metallic Waveguide Array** *Physical Review Letters*
  Fan, S., H., Verslegers, L., Catrysse, P., B., Yu et. al., Z., F.
  2009; 103 (3)
- **Universal features of coherent photonic thermal conductance in multilayer photonic band gap structures** *Physical Review B*
  Lau, W., T., Shen, J., T., Fan, S., H.
  2009; 80 (15)
- **Understanding the dispersion of coaxial plasmonic structures through a connection with the planar metal-insulator-metal geometry** *Applied Physics Letters*
  Catrysse, P., B., Fan, S., H.
  2009; 94 (23)
- **Modal analysis and coupling in metal-insulator-metal waveguides** *Physical Review B*
  Fan, S., H., Kocabas, S., E., Veronis, G., Miller et. al., D., A. B.
  2009; 79 (3)
- **Three-Dimensional Metamaterials with an Ultrahigh Effective Refractive Index over a Broad Bandwidth** *Physical Review Letters*
  Shin, J., Shen, J., T., Fan, S., H.
  2009; 102 (9)

- **Theory of single-photon transport in a single-mode waveguide. I. Coupling to a cavity containing a two-level atom** *Physical Review A*
  Shen, J., T., Fan, S., H.
  2009; 79 (2)
- **Optical isolation based on nonreciprocal phase shift induced by interband photonic transitions** *Applied Physics Letters*
  Yu, Z., F., Fan, S., H.
  2009; 94 (17)
- **Capturing light pulses into a pair of coupled photonic crystal cavities** *Applied Physics Letters*
  Otey, C., R., Povinelli, M., L., Fan, S., H.
  2009; 94 (23)
- **Dynamics of optical modes in modulated photonic structures** *IEEE/LEOS Winter Topicals Meeting*
  Fan, S., Yu, Z., Otey, C., Povinelli, M.
  IEEE.2009: 106–107
- **Optical Resonances Created by Photonic Transitions** *Conference on Lasers and Electro-Optics/Quantum Electronics and Laser Science Conference (CLEO/QELS 2009)*
  Yu, Z., Fan, S.
  IEEE.2009: 1327–1328
- **Planar Lenses Based on Nanoscale Slit Arrays in a Metallic Film** *Conference on Lasers and Electro-Optics/Quantum Electronics and Laser Science Conference (CLEO/QELS 2009)*
  Verslegers, L., Catrysse, P. B., Yu, Z., White, J. S., Barnard, E. S., Brongersma, M. L., Fan, S.
  IEEE.2009: 3224–3225
- **Simple Analytical Expression for the Dispersion of Plasmonic Structures with Coaxial Geometry** *Conference on Lasers and Electro-Optics/ Quantum Electronics and Laser Science Conference (CLEO/QELS 2009)*
  Catrysse, P. B., Fan, S.
  IEEE.2009: 1838–1839
- **Integrated nanophotonics: dynamic optical isolation, and nanoscale far-field focusing in aperiodic plasmonic waveguide array** *22nd Annual Meeting of the IEEE-Photonics-Society*
  Fan, S., Yu, Z., Verslegers, L., Catrysse, P.
  IEEE.2009: 646–647
- **Light Trapping With a Few Cavities** *Conference on Advances in Slow and Fast Light II*
  Otey, C. R., Povinelli, M. L., Fan, S.
  SPIE-INT SOC OPTICAL ENGINEERING.2009
- **Minimizing Coherent Thermal Conductance Using Multi-Layer Photonic Crystal Heterostructures** *Conference on Lasers and Electro-Optics/ Quantum Electronics and Laser Science Conference (CLEO/QELS 2009)*
  Lau, W. T., Shen, J., Fan, S.
  IEEE.2009: 2035–2036
- **Performance Limitation of a Coupled Resonant Optical Waveguide Gyroscope** *JOURNAL OF LIGHTWAVE TECHNOLOGY*
  Terrel, M. A., Digonnet, M. J., Fan, S.
  2009; 27 (1-4): 47-54
- **Modal analysis and coupling in metal-insulator-metal waveguides** *PHYSICAL REVIEW B*
  Kocabas, S. E., Veronis, G., Miller, D. A., Fan, S.
  2009; 79 (3)
- **Planar Lenses Based on Nanoscale Slit Arrays in a Metallic Film** *NANO LETTERS*
  Verslegers, L., Catrysse, P. B., Yu, Z., White, J. S., Barnard, E. S., Brongersma, M. L., Fan, S.
  2009; 9 (1): 235-238
- **Analysis of guided-resonance-based polarization beam splitting in photonic crystal slabs** *JOURNAL OF THE OPTICAL SOCIETY OF AMERICA A-OPTICS IMAGE SCIENCE AND VISION*
  Kilic, O., Fan, S., Solgaard, O.

2008; 25 (11): 2680-2692

- **Completely Capturing Light Pulses in a Few Dynamically Tuned Microcavities** *JOURNAL OF LIGHTWAVE TECHNOLOGY*
  Otey, C. R., Povinelli, M. L., Fan, S.
  2008; 26 (21-24): 3784-3793
- **Protein microarrays with carbon nanotubes as multicolor Raman labels** *NATURE BIOTECHNOLOGY*
  Chen, Z., Tabakman, S. M., Goodwin, A. P., Kattah, M. G., Daranciang, D., Wang, X., Zhang, G., Li, X., Liu, Z., Utz, P. J., Jiang, K., Fan, S., Dai, et al
  2008; 26 (11): 1285-1292
- **Transmission Line and Equivalent Circuit Models for Plasmonic Waveguide Components** *IEEE JOURNAL OF SELECTED TOPICS IN QUANTUM ELECTRONICS*
  Kocabas, S. E., Veronis, G., Miller, D. A., Fan, S.
  2008; 14 (6): 1462-1472
- **Multiplexed multicolor Raman imaging of live cells with isotopically modified single walled carbon nanotubes** *JOURNAL OF THE AMERICAN CHEMICAL SOCIETY*
  Liu, Z., Li, X., Tabakman, S. M., Jiang, K., Fan, S., Dai, H.
  2008; 130 (41): 13540-?
- **Tungsten black absorber for solar light with wide angular operation range** *APPLIED PHYSICS LETTERS*
  Rephaeli, E., Fan, S.
  2008; 92 (21)
- **Tuning coherent radiative thermal conductance in multilayer photonic crystals** *APPLIED PHYSICS LETTERS*
  Lau, W. T., Shen, J., Veronis, G., Fan, S., Braun, P. V.
  2008; 92 (10)
- **Aligning microcavity resonances in silicon photonic-crystal slabs using laser-pumped thermal tuning** *APPLIED PHYSICS LETTERS*
  Pan, J., Huo, Y., Yamanaka, K., Sandhu, S., Scaccabarozzi, L., Timp, R., Povinelli, M. L., Fan, S., Fejer, M. M., Harris, J. S.
  2008; 92 (10)
- **Crosstalk between three-dimensional plasmonic slot waveguides** *OPTICS EXPRESS*
  Veronis, G., Fan, S.
  2008; 16 (3): 2129-2140
- **Gain-induced switching in metal-dielectric-metal plasmonic waveguides** *APPLIED PHYSICS LETTERS*
  Yu, Z., Veronis, G., Fan, S., Brongersma, M. L.
  2008; 92 (4)
- **One-way electromagnetic waveguide formed at the interface between a plasmonic metal under a static magnetic field and a photonic crystal** *PHYSICAL REVIEW LETTERS*
  Yu, Z., Veronis, G., Wang, Z., Fan, S.
  2008; 100 (2)
- **GaN-based two-dimensional surface-emitting photonic crystal lasers with AlN/GaN distributed Bragg reflector** *APPLIED PHYSICS LETTERS*
  Lu, T., Chen, S., Lin, L., Kao, T., Kao, C., Yu, P., Kuo, H., Wang, S., Fan, S.
  2008; 92 (1)
- **Propagating plasmonic mode in nanoscale apertures and its implications for extraordinary transmission** *JOURNAL OF NANOPHOTONICS*
  Catrysse, P. B., Fan, S.
  2008; 2
- **Gain-induced switching in metal-dielectric-metal plasmonic waveguides**
  Yu, Z., Veronis, G., Brongersma, M. L., Fan, S.
  edited by Greiner, C. M., Waechter, C. A.
  SPIE-INT SOC OPTICAL ENGINEERING.2008
- **Photonic crystal theory: Temporal coupled-mode formalism** *OPTICAL FIBER TELECOMMUNICATIONS V A: COMPONENTS AND SUBSYSTEMS*

Fan, S.
edited by Kaminow, I. P., Li, T., Willner, A. E.
2008: 431-454

- **Properties of three-dimensional plasmonic slot waveguides** *Conference on Plasmonics - Metallic Nanostructures and their Optical Properties VI*
  Veronis, G., Fan, S.
  SPIE-INT SOC OPTICAL ENGINEERING.2008
- **Spatial coherence of the thermal electromagnetic field in the vicinity of a dielectric slab** *Conference on Photonic Crystal Materials and Devices VII*
  Lau, W. T., Shen, J., Veronis, G., Fan, S.
  SPIE-INT SOC OPTICAL ENGINEERING.2008
- **Fabrication and Performance of GaN-based Two Dimensional Photonic Crystal Surface Emitting Lasers** *IEEE 21st International Semiconductor Laser Conference*
  Lu, T., Kao, T., Chen, S., Liu, T., Yu, P., Kuo, H., Wang, S., Fan, S.
  IEEE.2008: 187–188
- **Tungsten black absorber for solar light with wide angular operation range** *Applied Physics Letters*
  Rephaeli, E., Fan, S.
  2008; 92 (21)
- **Propagating plasmonic mode in nanoscale apertures and its implications for extraordinary transmission** *Journal of Nanophotonics*
  Catrysse, P., B., Fan, S., H.
  2008; 2
- **Gain-induced switching in metal-dielectric-metal plasmonic waveguides** *Applied Physics Letters*
  Yu, Z., F., Veronis, G., Fan et. al., S., H.
  2008; 92 (4)
- **GaN-based two-dimensional surface-emitting photonic crystal lasers with AlN/GaN distributed Bragg reflector** *Applied Physics Letters*
  Fan, S., H., Lu, T., C., Chen, S., W., Lin et. al., L., F.
  2008; 92 (1)
- **Aligning microcavity resonances in silicon photonic-crystal slabs using laser-pumped thermal tuning** *Applied Physics Letters*
  Fan, S., H., Pan, J., Huo, Y., Yamanaka et. al., K.
  2008; 92 (10)
- **One-way electromagnetic waveguide formed at the interface between a plasmonic metal under a static magnetic field and a photonic crystal** *Physical Review Letters*
  Fan, S., H., Yu, Z., F., Veronis, G., Wang et. al., Z.
  2008; 100 (2)
- **Tuning coherent radiative thermal conductance in multilayer photonic crystals** *Applied Physics Letters*
  Fan, S., H., Lau, W., T., Shen, J., T., Veronis et. al., G.
  2008; 92 (10)
- **Dispersionless Three-dimensional Metamaterial with a Very High Refractive Index** *Conference on Lasers and Electro-Optics/Quantum Electronics and Laser Science Conference (CLEO/QELS 2008)*
  Shin, J., Shen, J., Fan, S.
  IEEE.2008: 3131–3132
- **Stopping and time-reversing a light pulse using dynamic loss-tuning of coupled-resonator delay lines** *Conference on Laser Resonators and Beam Control X*
  Sandhu, S., Povinelli, M. L., Fan, S.
  SPIE-INT SOC OPTICAL ENGINEERING.2008
- **Crosstalk between three-dimensional plasmonic slot waveguides** *Conference on Lasers and Electro-Optics/Quantum Electronics and Laser Science Conference (CLEO/QELS 2008)*
  Veronis, G., Fan, S.
  IEEE.2008: 3571–3572

- **Deep-Subwavelength Coaxial Waveguides with a Hollow Core** *Conference on Lasers and Electro-Optics/Quantum Electronics and Laser Science Conference (CLEO/QELS 2008)*
  Catrysse, P. B., Fan, S.
  IEEE.2008: 3567–3568
- **Tuning Coherent Radiative Thermal Conductance in Multilayer Photonic Crystals** *Conference on Lasers and Electro-Optics/Quantum Electronics and Laser Science Conference (CLEO/QELS 2008)*
  Lau, W. T., Shen, J., Veronis, G., Fan, S.
  IEEE.2008: 3026–3027
- **Strongly correlated multiparticle transport in one dimension through a quantum impurity** *PHYSICAL REVIEW A*
  Shen, J., Fan, S.
  2007; 76 (6)
- **Stopping and time reversing a light pulse using dynamic loss tuning of coupled-resonator delay lines** *OPTICS LETTERS*
  Sandhu, S., Povinelli, M. L., Fan, S.
  2007; 32 (22): 3333-3335
- **Enlarging the bandwidth of nanoscale propagating plasmonic modes in deep-subwavelength cylindrical holes** *APPLIED PHYSICS LETTERS*
  Catrysse, P. B., Fan, S.
  2007; 91 (18)
- **Three-dimensional electromagnetic metamaterials that homogenize to uniform non-Maxwellian media** *PHYSICAL REVIEW B*
  Shin, J., Shen, J., Fan, S.
  2007; 76 (11)
- **Modes of subwavelength plasmonic slot waveguides** *JOURNAL OF LIGHTWAVE TECHNOLOGY*
  Veronis, G., Fan, S.
  2007; 25 (9): 2511-2521
- **The nonlinear effect from the interplay between the nonlinearity and the supercollimation of photonic crystal** *APPLIED PHYSICS LETTERS*
  Jiang, X., Zhou, C., Yu, X., Fan, S., Soljacic, M., Joannopoulos, J. D.
  2007; 91 (3)
- **Spatial coherence of the thermal electromagnetic field in the vicinity of a dielectric slab** *PHYSICAL REVIEW E*
  Lau, W. T., Shen, J., Veronis, G., Fan, S.
  2007; 76 (1)
- **A germanium inverse woodpile structure with a large photonic band gap** *ADVANCED MATERIALS*
  Garcia-Santamaria, F., Xu, M., Lousse, V., Fan, S., Braun, P. V., Lewis, J. A.
  2007; 19 (12): 1567-?
- **Polarization controller for hollow-core fiber** *OPTICS LETTERS*
  Terrel, M., Digonnet, M. J., Fan, S.
  2007; 32 (11): 1524-1526
- **Manipulating light with photonic crystals** *7th International Conference on Electrical Transport and Optical Properties of Inhomogeneous Media (ETOPIM-7)*
  Fan, S.
  ELSEVIER SCIENCE BV.2007: 221–28
- **Enhancing or suppressing self-focusing in nonlinear photonic crystals** *APPLIED PHYSICS LETTERS*
  Yu, X., Jiang, X., Fan, S.
  2007; 90 (16)
- **Strongly correlated two-photon transport in a one-dimensional waveguide coupled to a two-level system** *PHYSICAL REVIEW LETTERS*
  Shen, J., Fan, S.
  2007; 98 (15)

- **One-way total reflection with one-dimensional magneto-optical photonic crystals** *APPLIED PHYSICS LETTERS*
  Yu, Z., Wang, Z., Fan, S.
  2007; 90 (12)
- **Theoretical investigation of compact couplers between dielectric slab waveguides and two-dimensional metal-dielectric-metal plasmonic waveguides** *OPTICS EXPRESS*
  Veronis, G., Fan, S.
  2007; 15 (3): 1211-1221
- **Near-complete transmission through subwavelength hole arrays in phonon-polaritonic thin films** *PHYSICAL REVIEW B*
  Catrysse, P. B., Fan, S.
  2007; 75 (7)
- **Overexpression of NDRG1 is an indicator of poor prognosis in hepatocellular carcinoma** *MODERN PATHOLOGY*
  Chua, M., Sun, H., Cheung, S. T., Mason, V., Higgins, J., Ross, D. T., Fan, S. T., So, S.
  2007; 20 (1): 76-83
- **OVERVIEW OF SIMULATION TECHNIQUES FOR PLASMONIC DEVICES** *SURFACE PLASMON NANOPHOTONICS*
  Veronis, G., Fan, S.
  edited by Brongersma, M. L., Kik, P. G.
  2007; 131: 169-182
- **Three-dimensional electromagnetic metamaterials that homogenize to uniform non-Maxwellian media** *Physical Review B*
  Shin, J., Shen, J., T., Fan, S.
  2007; 76 (11)
- **The nonlinear effect from the interplay between the nonlinearity and the supercollimation of photonic crystal** *Applied Physics Letters*
  Fan, S., H., Jiang, X., Y., Zhou, C., H., Yu et. al., X., F.
  2007; 91 (3)
- **Enhancing or suppressing self-focusing in nonlinear photonic crystals** *Applied Physics Letters*
  Yu, X., F., Jiang, X., Y., Fan, S.
  2007; 90 (16)
- **Stopping single photons in one-dimensional circuit quantum electrodynamics systems** *Physical Review B*
  Fan, S., H., Shen, J., T., Povinelli, M., L., Sandhu et. al., S.
  2007; 75 (3)
- **Strongly correlated multiparticle transport in one dimension through a quantum impurity** *Physical Review A*
  Shen, J., T., Fan, S.
  2007; 76 (6)
- **Slow light - Dynamic photon storage** *Nature Physics*
  Yanik, M., F., Fan, S.
  2007; 3 (6): 372-374
- **One-way total reflection with one-dimensional magneto-optical photonic crystals** *Applied Physics Letters*
  Yu, Z., F., Wang, Z., Fan, S., H.
  2007; 90 (12)
- **Spatial coherence of the thermal electromagnetic field in the vicinity of a dielectric slab** *Physical Review E*
  Fan, S., H., Lau, W., T., Shen, J., T., Veronis et. al., G.
  2007; 76 (1)
- **Modeling nonlinear optical phenomena in nanophotonics** *Journal of Lightwave Technology*
  Bravo-Abad, J., Fan, S., Johnson et. al., S., G.
  2007; 25 (9): 2539-2546
- **Enlarging the bandwidth of nanoscale propagating plasmonic modes in deep-subwavelength cylindrical holes** *Applied Physics Letters*
  Catrysse, P., B., Fan, S., H.

2007; 91 (18)

- **A germanium inverse woodpile structure with a large photonic band gap** *Advanced Materials*
  Fan, S., H., Garcia-Santamaria, F., Xu, M., J., Lousse, V.
  2007; 19 (12): 1567-+
- **Near-complete transmission through subwavelength hole arrays in phonon-polaritonic thin films** *Physical Review B*
  Catrysse, P., B., Fan, S., H.
  2007; 75 (7)
- **Strongly correlated two-photon transport in a one-dimensional waveguide coupled to a two-level system** *Physical Review Letters*
  Shen, J., T., Fan, S., H.
  2007; 98 (15)
- **Compact couplers between dielectric and plasmonic slot waveguides** *Conference on Integrated Optics - Devices, Materials, and Technology XI*
  Veronis, G., Fan, S.
  SPIE-INT SOC OPTICAL ENGINEERING.2007
- **One-way electromagnetic waveguide** *20th Annual Meeting of the IEEE-Lasers-and-Electro-Optics-Society*
  Yu, Z., Veronis, G., Wang, Z., Fan, S.
  IEEE.2007: 278–279
- **Phonon polariton reflectance spectra in a silicon carbide membrane hole array** *20th Annual Meeting of the IEEE-Lasers-and-Electro-Optics-Society*
  Provine, J., Catrysse, P. B., Roper, C. S., Maboudian, R., Fan, S., Howe, R. T.
  IEEE.2007: 466–467
- **Compact couplers between dielectric and metal-dielectric-metal plasmonic waveguides** *Conference on Lasers and Electro-Optics/Quantum Electronics and Laser Science Conference*
  Veronis, G., Shin, W., Fan, S.
  IEEE.2007: 895–896
- **Stopping single photons in one-dimensional circuit quantum electrodynamics systems** *PHYSICAL REVIEW B*
  Shen, J., Povinelli, M. L., Sandhu, S., Fan, S.
  2007; 75 (3)
- **Optical Characterization and Sensitivity Evaluation of Guided-Resonances in Photonic Crystal Slabs for Biosensing Applications** *Conference on Lasers and Electro-Optics/Quantum Electronics and Laser Science Conference*
  Levi, O., Lee, M. M., Zhang, J., Lousse, V., Brueck, S. R., Fan, S., Harris, J. S.
  IEEE.2007: 993–994
- **Sensitivity analysis of a photonic crystal structure for index-of-refraction sensing** *Conference on Nanoscale Imaging, Spectroscopy, Sensing, and Actuation for Biomedical Applications IV*
  Levi, O., Lee, M. M., Zhang, J., Lousse, V., Brueck, S. R., Fan, S., Harris, J. S.
  SPIE-INT SOC OPTICAL ENGINEERING.2007
- **Design of mid-infrared photodetectors enhanced by surface plasmons on grating structures** *Conference on Integrated Optics - Devices, Materials, and Technology XI*
  Yu, Z., Veronis, G., Brongersma, M. L., Fan, S.
  SPIE-INT SOC OPTICAL ENGINEERING.2007
- **Transmission enhancement and suppression by subwavelength hole arrays in polaritonic films** *Conference on Photonic Crystal Materials and Devices VI*
  Catrysse, P. B., Fan, S.
  SPIE-INT SOC OPTICAL ENGINEERING.2007
- **One-way waveguide and strong photon-photon interaction in nanophotonic structures** *IEEE/LEOS International Conference on Optical MEMS and Nanophotonics*
  Fan, S., Shen, J., Yu, Z., Veronis, G., Wang, Z.
  IEEE.2007: 181–182

- **Coherent few-photon quantum transport in one-dimensional systems** *Conference on Advanced Optical and Quantum Memories and Computing IV*
  Shen, J., Fan, S.
  SPIE-INT SOC OPTICAL ENGINEERING.2007
- **Radiation loss of coupled-resonator waveguides in photonic-crystal slabs** *Conference on Photonic Crystal Materials and Devices VI*
  Povinelli, A. L., Fan, S.
  SPIE-INT SOC OPTICAL ENGINEERING.2007
- **Extraordinary transmission through a poly-SiC membrane with subwavelength hole arrays** *IEEE/LEOS International Conference on Optical MEMS and Nanophotonics*
  Provine, J., Catrysse, P. B., Roper, C., Maboudian, R., Fan, S., Howe, R. T.
  IEEE.2007: 157–158
- **New properties of light in metamaterials** *Conference on Metamaterials II*
  Fan, S., Shin, J., Shen, J.
  SPIE-INT SOC OPTICAL ENGINEERING.2007
- **Dynamically-tuned microresonator complexes** *Conference on Laser Resonators and Beam Control IX*
  Povinelli, M. L., Sandhu, S., Shen, J., Yanik, M. F., Fan, S.
  SPIE-INT SOC OPTICAL ENGINEERING.2007
- **Enhanced second-harmonic generation in AlGaAs/AlxOy tightly confining waveguides and resonant cavities** *OPTICS LETTERS*
  Scaccabarozzi, L., Fejer, M. M., Huo, Y., Fan, S., Yu, X., Harris, J. S.
  2006; 31 (24): 3626-3628
- **Advances in theory of photonic crystals** *JOURNAL OF LIGHTWAVE TECHNOLOGY*
  Fan, S., Yanik, M. F., Wang, Z., Sandhu, S., Povinelli, M. L.
  2006; 24 (12): 4493-4501
- **Dichroic mirror embedded in a submicrometer waveguide for enhanced resonant nonlinear optical devices** *OPTICS LETTERS*
  Scaccabarozzi, L., Fejer, M. M., Huo, Y., Fan, S., Yu, X., Harris, J. S.
  2006; 31 (22): 3285-3287
- **Radiation loss of coupled-resonator waveguides in photonic-crystal slabs** *APPLIED PHYSICS LETTERS*
  Povinelli, M. L., Fan, S.
  2006; 89 (19)
- **Cut-through metal slit array as an anisotropic metamaterial film** *IEEE JOURNAL OF SELECTED TOPICS IN QUANTUM ELECTRONICS*
  Shin, J., Shen, J., Catrysse, P. B., Fan, S.
  2006; 12 (6): 1116-1122
- **Conditions for designing single-mode air-core waveguides in three-dimensional photonic crystals** *APPLIED PHYSICS LETTERS*
  Lousse, V., Shin, J., Fan, S.
  2006; 89 (16)
- **Design of midinfrared photodetectors enhanced by surface plasmons on grating structures** *APPLIED PHYSICS LETTERS*
  Yu, Z., Veronis, G., Fan, S., Brongersma, M. L.
  2006; 89 (15)
- **All-angle negative refraction and evanescent wave amplification using one-dimensional metallodielectric photonic crystals** *APPLIED PHYSICS LETTERS*
  Shin, H., Fan, S.
  2006; 89 (15)
- **Suppressing the effect of disorders using time-reversal symmetry breaking in magneto-optical photonic crystals: An illustration with a four-port circulator** *PHOTONICS AND NANOSTRUCTURES-FUNDAMENTALS AND APPLICATIONS*
  Wang, Z., Fan, S.
  2006; 4 (3): 132-140

- **Dynamically tuned coupled-resonator delay lines can be nearly dispersion free** *OPTICS LETTERS*
  Sandhu, S., Povinelli, M. L., Yanik, M. F., Fan, S.
  2006; 31 (13): 1985-1987
- **Experimental realization of an on-chip all-optical analogue to electromagnetically induced transparency** *PHYSICAL REVIEW LETTERS*
  Xu, Q. F., Sandhu, S., Povinelli, M. L., Shakya, J., Fan, S. H., Lipson, M.
  2006; 96 (12)
- **Anomalous modal structure in a waveguide with a photonic crystal core** *OPTICS LETTERS*
  Yu, X. F., Lau, W. T., Fan, S. H.
  2006; 31 (6): 742-744
- **Model dispersive media in finite-difference time-domain method with complex-conjugate pole-residue pairs** *IEEE MICROWAVE AND WIRELESS COMPONENTS LETTERS*
  Han, M. H., DUTTON, R. W., Fan, S. H.
  2006; 16 (3): 119-121
- **Systematic photonic crystal device design: Global and local optimization and sensitivity analysis** *IEEE JOURNAL OF QUANTUM ELECTRONICS*
  Jiao, Y., Fan, S. H., Miller, D. A.
  2006; 42 (3-4): 266-279
- **All-angle negative refraction for surface plasmon waves using a metal-dielectric-metal structure** *PHYSICAL REVIEW LETTERS*
  Shin, H., Fan, S. H.
  2006; 96 (7)
- **Direct-write assembly of three-dimensional photonic crystals: Conversion of polymer scaffolds to silicon hollow-woodpile structures** *ADVANCED MATERIALS*
  Gratson, G. M., Garcia-Santamaria, F., Lousse, V., Xu, M. J., Fan, S. H., Lewis, J. A., Braun, P. V.
  2006; 18 (4): 461-?
- **Waveguides in inverted opal photonic crystals** *OPTICS EXPRESS*
  Lousse, V., Fan, S. H.
  2006; 14 (2): 866-878
- **Guided modes supported by plasmonic films with a periodic arrangement of subwavelength slits** *APPLIED PHYSICS LETTERS*
  Catrysse, P. B., Veronis, G., Shin, H., Shen, J. T., Fan, S.
  2006; 88 (3)
- **Photonic crystals for communications: Stopping light and miniaturized non-reciprocal devices** *Conference on Optical Fiber Communications/ National Fiber Optic Engineers Conference*
  Fan, S., Yanik, M. F., Wang, Z., Povinelle, M., Sandhu, S.
  OPTICAL SOC AMERICA.2006: 2119–2121
- **Frequency domain modeling of nanophotonic devices** *PHOTONICS: DESIGN, TECHNOLOGY, AND PACKAGING II*
  Veronis, G., Fan, S. H.
  2006; 6038
- **Plasmonic films with a periodic arrangement of sub-wavelength slits** *Conference on Photonic Crystal Materials and Devices IV*
  Catrysse, P. B., Veronis, G., Shen, J., Shin, H., Fan, S.
  SPIE-INT SOC OPTICAL ENGINEERING.2006
- **Tunable terahertz Bloch oscillations in graded-index photonic crystals** *Conference on Photonic Crystal Materials and Devices IV*
  Lousse, V., Fan, S.
  SPIE-INT SOC OPTICAL ENGINEERING.2006
- **Subwavelength plasmonic waveguide structures based on slots in thin metal films** *INTEGRATED OPTICS: DEVICES, MATERIALS, AND TECHNOLOGIES X*
  Veronis, G., Fan, S.
  2006; 6123

- **Direct-write assembly of three-dimensional photonic crystals: Conversion of polymer scaffolds to silicon hollow-woodpile structures** *Advanced Materials*
  Fan, S., H., Gratson, G., M., Garcia-Santamaria, F., Lousse et. al., V.
  2006; 18 (4): 461-+
- **Radiation loss of coupled-resonator waveguides in photonic-crystal slabs** *Applied Physics Letters*
  Povinelli, M., L., Fan, S., H.
  2006; 89 (19)
- **All-angle negative refraction for surface plasmon waves using a metal-dielectric-metal structure** *Physical Review Letters*
  Shin, H., Fan, S., H.
  2006; 96 (7)
- **Design of midinfrared photodetectors enhanced by surface plasmons on grating structures** *Applied Physics Letters*
  Yu, Z., F., Veronis, G., Fan et. al., S., H.
  2006; 89 (15)
- **Cut-through metal slit array as an anisotropic metamaterial film** *Ieee Journal of Selected Topics in Quantum Electronics*
  Fan, S., H., Shin, J., Shen, J., T., Catrysse et. al., P., B.
  2006; 12 (6)
- **Conditions for designing single-mode air-core waveguides in three-dimensional photonic crystals** *Applied Physics Letters*
  Lousse, V., Shin, J., Fan, S., H.
  2006; 89 (16)
- **Waveguides in inverted opal photonic crystals** *Optics Express*
  Lousse, V., Fan, S., H.
  2006; 14 (2): 866-878
- **Guided modes supported by plasmonic films with a periodic arrangement of subwavelength slits** *Applied Physics Letters*
  Fan, S., H., Catrysse, P., B., Veronis, G., Shin et. al., H.
  2006; 88 (3)
- **Air-bridged photonic crystal slabs at visible and near-infrared wavelengths** *Physical Review B*
  Fan, S., H., Crozier, K., B., Lousse, V., Kilic et. al., O.
  2006; 73 (11)
- **Experimental realization of an on-chip all-optical analogue to electromagnetically induced transparency** *Physical Review Letters*
  Fan, S., H., Xu, Q., F., Sandhu, S., Povinelli et. al., M., L.
  2006; 96 (12)
- **All-angle negative refraction and evanescent wave amplification using one-dimensional metallodielectric photonic crystals** *Applied Physics Letters*
  Shin, H., C., Fan, S., H.
  2006; 89 (15)
- **A polarization controller for air-core photonic-bandgap fiber** *Conference on Optical Fiber Communications/National Fiber Optic Engineers Conference*
  Terrel, M., Digonnet, M., Fan, S.
  OPTICAL SOC AMERICA.2006: 681–683
- **Dynamically-tuned coupled-resonator delay lines can be nearly dispersion free** *Conference on Advanced Optical and Quantum Memories and Computing III*
  Sandhu, S., Povinelli, M. L., Yanik, M. F., Fan, S.
  SPIE-INT SOC OPTICAL ENGINEERING.2006
- **Controlling diffraction and waveguide modes by exploiting spatial dispersions in photonic crystals** *Conference on Photonic Crystal Materials and Devices IV*
  Fan, S., Yu, X., Shin, J., Lau, W. T.
  SPIE-INT SOC OPTICAL ENGINEERING.2006

- **Magneto-optical circulator in two-dimensional photonic crystals** *Conference on Photonic Crystal Materials and Devices IV*
  Wang, Z., Fan, S.
  SPIE-INT SOC OPTICAL ENGINEERING.2006
- **Integrated biomedical nanosensor using guided resonance in photonic crystal structures** *Conference on Nanobiophotonics and Biomedical Applications III*
  Levi, O., Suh, W., Lee, M. M., Zhang, J., Brueck, S. R., Fan, S., Harris, J. S.
  SPIE-INT SOC OPTICAL ENGINEERING.2006
- **Guided subwavelength plasmonic mode supported by a slot in a thin metal film** *OPTICS LETTERS*
  Veronis, G., Fan, S. H.
  2005; 30 (24): 3359-3361
- **Understanding air-core photonic-bandgap fibers: Analogy to conventional fibers** *JOURNAL OF LIGHTWAVE TECHNOLOGY*
  Digonnet, M. J., Kim, H. K., Kino, G. S., Fan, S. H.
  2005; 23 (12): 4169-4177
- **Coherent single photon transport in a one-dimensional waveguide coupled with superconducting quantum bits** *PHYSICAL REVIEW LETTERS*
  Shen, J. T., Fan, S. H.
  2005; 95 (21)
- **Propagating modes in subwavelength cylindrical holes** *49th International Conference on Electron, Ion, and Photon Beam Technology and Nanofabrication*
  Catrysse, P. B., Shin, H., Fan, S. H.
  A V S AMER INST PHYSICS.2005: 2675–78
- **Bends and splitters in metal-dielectric-metal subwavelength plasmonic waveguides** *APPLIED PHYSICS LETTERS*
  Veronis, G., Fan, S. H.
  2005; 87 (13)
- **Conditions for self-collimation in three-dimensional photonic crystals** *OPTICS LETTERS*
  Shin, J. W., Fan, S. H.
  2005; 30 (18): 2397-2399
- **Wannier basis design and optimization of a photonic crystal waveguide crossing** *IEEE PHOTONICS TECHNOLOGY LETTERS*
  Jiao, Y., Mingaleev, S. F., Schillinger, M., Miller, D. A., Fan, S., Busch, K.
  2005; 17 (9): 1875-1877
- **Coherent photon transport from spontaneous emission in one-dimensional waveguides** *OPTICS LETTERS*
  Shen, J. T., Fan, S. H.
  2005; 30 (15): 2001-2003
- **Displacement sensing using evanescent tunneling between guided resonances in photonic crystal slabs** *JOURNAL OF APPLIED PHYSICS*
  Suh, W., Solgaard, O., Fan, S.
  2005; 98 (3)
- **Tunable terahertz Bloch oscillations in chirped photonic crystals** *PHYSICAL REVIEW B*
  Lousse, V., Fan, S.
  2005; 72 (7)
- **Dynamic photonic structures: Stopping, storage, and time reversal of light** *STUDIES IN APPLIED MATHEMATICS*
  Yanik, M. F., Fan, S. H.
  2005; 115 (2): 233-253
- **Optical circulators in two-dimensional magneto-optical photonic crystals** *OPTICS LETTERS*
  Wang, Z., Fan, S. H.
  2005; 30 (15): 1989-1991
- **Magneto-optical defects in two-dimensional photonic crystals** *APPLIED PHYSICS B-LASERS AND OPTICS*

Wang, Z., Fan, S.
2005; 81 (2-3): 369-375

- **Mode-locking of monolithic laser diodes incorporating coupled-resonator optical waveguides** *OPTICS EXPRESS*
  Liu, Y., Wang, Z., Han, M. H., Fan, S. H., Dutton, R.
  2005; 13 (12): 4539-4553
- **Mechanism for designing metallic metamaterials with a high index of refraction** *PHYSICAL REVIEW LETTERS*
  Shen, J. T., Catrysse, P. B., Fan, S. H.
  2005; 94 (19)
- **Metallic photonic crystals with strong broadband absorption at optical frequencies over wide angular range** *JOURNAL OF APPLIED PHYSICS*
  Veronis, G., DUTTON, R. W., Fan, S. H.
  2005; 97 (9)
- **Coupled optical and electronic simulations of electrically pumped photonic-crystal-based light-emitting diodes** *JOURNAL OF APPLIED PHYSICS*
  Veronis, G., Suh, W., Liu, Y., Han, M. H., Wang, Z., DUTTON, R. W., Fan, S. H.
  2005; 97 (4)
- **Photonic crystal device sensitivity analysis with Wannier basis gradients** *OPTICS LETTERS*
  Jiao, Y., Fan, S. H., Miller, D. A.
  2005; 30 (3): 302-304
- **Principal modes in multimode waveguides** *OPTICS LETTERS*
  Fan, S. H., Kahn, J. M.
  2005; 30 (2): 135-137
- **Demonstration of systematic photonic crystal device design and optimization by low-rank adjustments: an extremely compact mode separator** *OPTICS LETTERS*
  Jiao, Y., Fan, S. H., Miller, D. A.
  2005; 30 (2): 141-143
- **Magneto-optical defects in two-dimensional photonic crystals** *Applied Physics B-Lasers and Optics*
  Wang, Z., Fan, S.
  2005; 81 (2-3): 369-375
- **Stopping and storing light coherently** *PHYSICAL REVIEW A*
  Yanik, M. F., Fan, S. H.
  2005; 71 (1)
- **Magneto-optical photonic crystals** *OPTICAL COMPONENTS AND MATERIALS II*
  Wang, Z., Fan, S. H.
  2005; 5723: 172-178
- **Near-field sensor using photonic crystal slabs** *Conference on Lasers and Electro-Optics (CLEO)*
  Suh, W., Solgaard, O., Fan, S.
  OPTICAL SOC AMERICA.2005: 837–839
- **Sub-wavelength resonances in metal-dielectric-metal plasmonic structures** *18th Annual Meeting of the IEEE-Lasers-and-Electro-Optical-Society*
  Fan, S. H., Shin, H., Brongersma, M., Veronis, G., Shen, J. T., Catrysse, P. B.
  IEEE.2005: 520–521
- **A new method for sensitivity analysis of photonic crystal devices** *PHOTONIC CRYSTAL MATERIALS AND DEVICES III*
  Veronis, G., DUTTON, R. W., Fan, S. H.
  2005; 5733: 348-355
- **"Dynamic photonic bandgap nanostructures for coherent information processing"** *2005 IEEE LEOS ANNUAL MEETING CONFERENCE PROCEEDINGS (LEOS)*

Yanik, M. F., Fan, S. H.
2005: 199-199

- **Nanophotonics: Stopping light, nonreciprocity, and metamaterials** *2005 PACIFIC RIM CONFERENCE ON LASERS AND ELECTRO-OPTICS*
Fan, S., Yanik, M. F., Wang, Z., Suh, W. J., Shen, J. T., Catrysse, P. C.
2005: 612-613
- **Mechanism for designing metallic metamaterials with a high index of refraction** *Physical Review Letters*
Shen, J., T., Catrysse, P., B., Fan, S., H.
2005; 94 (19)
- **Effect of the plasmonic dispersion relation on the transmission properties of subwavelength cylindrical holes** *Physical Review B*
Shin, H., Catrysse, P., B., Fan, S.
2005; 72 (8)
- **Displacement sensing using evanescent tunneling between guided resonances in photonic crystal slabs** *Journal of Applied Physics*
Suh, W., Solgaard, O., Fan, S.
2005; 98 (3)
- **Tunable terahertz Bloch oscillations in chirped photonic crystals** *Physical Review B*
Lousse, V., Fan, S.
2005; 72 (7)
- **Dynamic photonic structures: Stopping, storage, and time reversal of light** *Studies in Applied Mathematics*
Yanik, M., F., Fan, S., H.
2005; 115 (2): 233-253
- **Coupled optical and electronic simulations of electrically pumped photonic-crystal-based light-emitting diodes** *Journal of Applied Physics*
Fan, S., H., Veronis, G., Suh, W., Liu et. al., Y.
2005; 97 (4)
- **Coherent single photon transport in a one-dimensional waveguide coupled with superconducting quantum bits** *Physical Review Letters*
Shen, J., T., Fan, S., H.
2005; 95 (21)
- **Bends and splitters in metal-dielectric-metal subwavelength plasmonic waveguides** *Applied Physics Letters*
Veronis, G., Fan, S., H.
2005; 87 (13)
- **Stopping and storing light coherently** *Physical Review A*
Yanik, M., F., Fan, S., H.
2005; 71 (1)
- **Metallic photonic crystals with strong broadband absorption at optical frequencies over wide angular range** *Journal of Applied Physics*
Veronis, G., Dutton, R., W., Fan, S., H.
2005; 97 (9)
- **Stopping light in a waveguide with an all-optical analog of electromagnetically induced transparency** *PHYSICAL REVIEW LETTERS*
Yanik, M. F., Suh, W., Wang, Z., Fan, S. H.
2004; 93 (23)
- **Photonic crystal slabs demonstrating strong broadband suppression of transmission in the presence of disorders** *OPTICS LETTERS*
Kilic, O., Kim, S., Suh, W., Peter, Y. A., Sudbo, A. S., Yanik, M. F., Fan, S. H., Solgaard, O.
2004; 29 (23): 2782-2784
- **Anomalous reflections at photonic crystal surfaces** *PHYSICAL REVIEW E*
Yu, X. F., Fan, S. H.
2004; 70 (5)
- **Time reversal of light with linear optics and modulators** *PHYSICAL REVIEW LETTERS*
Yanik, M. F., Fan, S. H.

2004; 93 (17)

- **Method for sensitivity analysis of photonic crystal devices** *OPTICS LETTERS*
  Veronis, G., DUTTON, R. W., Fan, S. H.
  2004; 29 (19): 2288-2290
- **Temporal coupled-mode theory and the presence of non-orthogonal modes in lossless multimode cavities** *IEEE JOURNAL OF QUANTUM ELECTRONICS*
  Suh, W., Wang, Z., Fan, S. H.
  2004; 40 (10): 1511-1518
- **Submicrometer all-optical digital memory and integration of nanoscale photonic devices without isolators** *JOURNAL OF LIGHTWAVE TECHNOLOGY*
  Yanik, M. F., Altug, H., Vuckovic, J., Fan, S. H.
  2004; 22 (10): 2316-2322
- **Designing for beam propagation in periodic and nonperiodic photonic nanostructures: Extended Hamiltonian method** *PHYSICAL REVIEW E*
  Jiao, Y., Fan, S. H., Miller, D. A.
  2004; 70 (3)
- **Simulations of the effect of the core ring on surface and air-core modes in photonic bandgap fibers** *OPTICS EXPRESS*
  Kim, H. K., Digonnet, M. J., Kino, G. S., Shin, J. W., Fan, S. H.
  2004; 12 (15): 3436-3442
- **Design of polarization beam splitter in two-dimensional triangular photonic crystals** *CHINESE PHYSICS LETTERS*
  Chen, X. Y., Yao, P. J., Chen, B., Li, F., Zhang, J. Y., Xie, J. P., Ming, H., Fan, S. H.
  2004; 21 (7): 1285-1288
- **All-pass transmission or flattop reflection filters using a single photonic crystal slab** *APPLIED PHYSICS LETTERS*
  Suh, W., Fan, S. H.
  2004; 84 (24): 4905-4907
- **Omnidirectional resonance in a metal-dielectric-metal geometry** *APPLIED PHYSICS LETTERS*
  Shin, H., Yanik, M. F., Fan, S. H., Zia, R., Brongersma, M. L.
  2004; 84 (22): 4421-4423
- **Simple geometric criterion to predict the existence of surface modes in air-core photonic-bandgap fibers** *OPTICS EXPRESS*
  Digonnet, M. J., Kim, H. K., Shin, J., Fan, S. H., Kino, G. S.
  2004; 12 (9): 1864-1872
- **One-mode model for patterned metal layers inside integrated color pixels** *OPTICS LETTERS*
  Catrysse, P. B., Suh, W. J., Fan, S. H., Peeters, M.
  2004; 29 (9): 974-976
- **Nature of lossy Bloch states in polaritonic photonic crystals** *PHYSICAL REVIEW B*
  Huang, K. C., Lidorikis, E., Jiang, X. Y., Joannopoulos, J. D., Nelson, K. A., Bienstman, P., Fan, S. H.
  2004; 69 (19)
- **Designing air-core photonic-bandgap fibers free of surface modes** *IEEE JOURNAL OF QUANTUM ELECTRONICS*
  Kim, H. K., Shin, J., Fan, S. H., Digonnet, M. J., Kino, G. S.
  2004; 40 (5): 551-556
- **Extracting light from polymer light-emitting diodes using stamped Bragg gratings** *ADVANCED FUNCTIONAL MATERIALS*
  Ziebarth, J. M., Saafir, A. K., Fan, S., McGehee, M. D.
  2004; 14 (5): 451-456
- **Angular and polarization properties of a photonic crystal slab mirror** *LEOS Topical Meeting on Photonic Crystals and Holey Fibers*
  Lousse, V., Suh, W., Kilic, O., Kim, S., Solgaard, O., Fan, S. H.
  OPTICAL SOC AMER.2004: 1575–82

- **Stopping light all optically** *PHYSICAL REVIEW LETTERS*
  Yanik, M. F., Fan, S. H.
  2004; 92 (8)
- **Time reversal of light with linear optics and modulators** *Physical Review Letters*
  Yanik, M., F., Fan, S., H.
  2004; 93 (17)
- **Field expulsion and reconfiguration in polaritonic photonic crystals (vol 90, art no 196402, 2003)** *Physical Review Letters*
  Fan, S., H., Huang, K., C., Bienstman, P., Joannopoulos et. al., J., D.
  2004; 92 (16)
- **Stopping light all optically** *Physical Review Letters*
  Yanik, M., F., Fan, S., H.
  2004; 92 (8)
- **Nature of lossy Bloch states in polaritonic photonic crystals** *Physical Review B*
  Fan, S., H., Huang, K., C., Lidorikis, E., Jiang, X., Y.
  2004; 69 (19)
- **Designing for beam propagation in periodic and nonperiodic photonic nanostructures: Extended Hamiltonian method** *Physical Review E*
  Jiao, Y., Fan, S., H., Miller, D., A. B.
  2004; 70 (3)
- **Stopping light in a waveguide with an all-optical analog of electromagnetically induced transparency** *Physical Review Letters*
  Fan, S., H., Yanik, M., F., Suh, W., Wang et. al., Z.
  2004; 93 (23)
- **Phonon-polariton excitations in photonic crystals (vol 68, art no 075209, 2003)** *Physical Review B*
  Fan, S., H., Huang, K., C., Bienstman, P., Joannopoulos et. al., J., D.
  2004; 69 (15)
- **Anomalous reflections at photonic crystal surfaces** *Physical Review E*
  Yu, X., F., Fan, S., H.
  2004; 70 (5)
- **All-pass transmission or flattop reflection filters using a single photonic crystal slab** *Applied Physics Letter*
  Suh, W., Fan, S., H.
  2004; 84 (24): 4905-4907
- **Field expulsion and reconfiguration in polaritonic photonic crystals (vol 90, art no 196402, 2003)** *Physical Review Letters*
  Fan, S., H., Huang, K., C., Bienstman, P., Joannopoulos et. al., J., D.
  2004; 92 (16)
- **Stopping light all optically** *Physical Review Letters*
  Yanik, M., F., Fan, S., H.
  2004; 92 (8)
- **Nature of lossy Bloch states in polaritonic photonic crystals** *Physical Review B*
  Fan, S., H., Huang, K., C., Lidorikis, E., Jiang, X., Y.
  2004; 69 (19)
- **Designing for beam propagation in periodic and nonperiodic photonic nanostructures: Extended Hamiltonian method** *Physical Review E*
  Jiao, Y., Fan, S., H., Miller, D., A. B.
  2004; 70 (3)
- **Stopping light in a waveguide with an all-optical analog of electromagnetically induced transparency** *Physical Review Letters*
  Fan, S., H., Yanik, M., F., Suh, W., Wang et. al., Z.
  2004; 93 (23)

- **Phonon-polariton excitations in photonic crystals (vol 68, art no 075209, 2003)** *Physical Review B*
  Fan, S., H., Huang, K., C., Bienstman, P., Joannopoulos et. al., J., D.
  2004; 69 (15)
- **Anomalous reflections at photonic crystal surfaces** *Physical Review E*
  Yu, X., F., Fan, S., H.
  2004; 70 (5)
- **All-pass transmission or flattop reflection filters using a single photonic crystal slab** *Applied Physics Letter*
  Suh, W., Fan, S., H.
  2004; 84 (24): 4905-4907
- **All-optical transistor action with bistable switching in a photonic crystal cross-waveguide geometry** *OPTICS LETTERS*
  Yanik, M. F., Fan, S. H., Soljacic, M., Joannopoulos, J. D.
  2003; 28 (24): 2506-2508
- **Compact all-pass filters in photonic crystals as the building block for high-capacity optical delay lines** *PHYSICAL REVIEW E*
  Wang, Z., Fan, S. H.
  2003; 68 (6)
- **Bends and splitters for self-collimated beams in photonic crystals** *APPLIED PHYSICS LETTERS*
  Yu, X. F., Fan, S. H.
  2003; 83 (16): 3251-3253
- **High-contrast all-optical bistable switching in photonic crystal microcavities** *APPLIED PHYSICS LETTERS*
  Yanik, M. F., Fan, S. H., Soljacic, M.
  2003; 83 (14): 2739-2741
- **Mechanically switchable photonic crystal filter with either all-pass transmission or flat-top reflection characteristics** *OPTICS LETTERS*
  Suh, W., Fan, S. H.
  2003; 28 (19): 1763-1765
- **Design of a nanoelectromechanical high-index-contrast guided-wave optical switch for single-mode operation at 1.55 mu m** *IEEE PHOTONICS TECHNOLOGY LETTERS*
  Povinelli, M. L., Bryant, R. E., Assefa, S., Johnson, S. G., Fan, S. H., Erchak, A. A., Petrich, G. S., Lidorikis, E., Joannopoulos, J. D., Kolodziejski, L. A., Ippen, E. P.
  2003; 15 (9): 1207-1209
- **Phonon-polariton excitations in photonic crystals** *PHYSICAL REVIEW B*
  Huang, K. C., Bienstman, P., Joannopoulos, J. D., Nelson, K. A., Fan, S.
  2003; 68 (7)
- **Field expulsion and reconfiguration in polaritonic photonic crystals** *PHYSICAL REVIEW LETTERS*
  Huang, K. C., Bienstman, P., Joannopoulos, J. D., Nelson, K. A., Fan, S. H.
  2003; 90 (19)
- **Nonlinear photonic crystal microdevices for optical integration** *OPTICS LETTERS*
  Soljacic, M., Luo, C., Joannopoulos, J. D., Fan, S. H.
  2003; 28 (8): 637-639
- **Displacement-sensitive photonic crystal structures based on guided resonance in photonic crystal slabs** *APPLIED PHYSICS LETTERS*
  Suh, W., Yanik, M. F., Solgaard, O., Fan, S. H.
  2003; 82 (13): 1999-2001
- **Temporal coupled-mode theory for the Fano resonance in optical resonators** *JOURNAL OF THE OPTICAL SOCIETY OF AMERICA A-OPTICS IMAGE SCIENCE AND VISION*
  Fan, S. H., Suh, W., Joannopoulos, J. D.
  2003; 20 (3): 569-572
- **Bends and splitters for self-collimated beams in photonic crystals** *Applied Physics Letters*

Yu, X., F., Fan, S., H.
2003; 83 (16): 3251-3253

- **All-optical switching using optical bistability in non-linear photonic crystals** *Conference on Photonic Crystal Materials and Devices*
  Soljacic, M., Ibanescu, M., Luo, C. Y., Johnson, S. G., Fan, S. H., Fink, Y., Joannopoulos, J. D.
  SPIE-INT SOC OPTICAL ENGINEERING.2003: 200–214
- **All-optical bistable transistor in photonic crystals** *2003 IEEE LEOS ANNUAL MEETING CONFERENCE PROCEEDINGS, VOLS 1 AND 2*
  Yanik, M. F., Fan, S., Soljacic, M., Joannopoulos, J. D.
  2003: 218-219
- **Creating large bandwidth line defects by embedding dielectric waveguides into photonic crystal slabs** *Conference on Photonic Crystal Materials and Devices*
  Lau, W. T., Fan, S. H.
  SPIE-INT SOC OPTICAL ENGINEERING.2003: 118–124
- **High-contrast all-optical bistable switching in photonic crystal microcavities** *Applied Physics Letters*
  Yanik, M., F., Fan, S., H., Soljacic, M.
  2003; 83 (14): 2739-2741
- **Phonon-polariton excitations in photonic crystals** *Physical Review B*
  Fan, S., H., Huang, K., C., Bienstman, P., Joannopoulos et. al., J., D.
  2003; 68 (7)
- **Compact all-pass filters in photonic crystals as the building block for high-capacity optical delay lines** *Physical Review E*
  Wang, Z., Fan, S., H.
  2003; 68 (6)
- **Reflectionless multichannel wavelength demultiplexer in a transmission resonator configuration** *IEEE JOURNAL OF QUANTUM ELECTRONICS*
  Jin, C. J., Fan, S. H., Han, S. Z., Zhang, D. Z.
  2003; 39 (1): 160-165
- **Field expulsion and reconfiguration in polaritonic photonic crystals** *Physical Review Letters*
  Fan, S., H., Huang, K., C., Bienstman, P., Joannopoulos et. al., J., D.
  2003; 90 (19)
- **Design of a nanoelectromechanical high-index-contrast guided-wave optical switch for single-mode operation at 1.55 mu m** *Ieee Photonics Technology Letters*
  Fan, S., H., Povinelli, M., L., Bryant, R., E., Assefa et. al., S.
  2003; 15 (9): 1207-1209
- **Nonlinear photonic crystal microdevices for optical integration** *Optics Letters*
  Fan, S., H., Soljacic, M., Luo, C., Joannopoulos et. al., J., D.
  2003; 28 (8): 637-639
- **Creating large bandwidth line defects by embedding dielectric waveguides into photonic crystal slabs** *APPLIED PHYSICS LETTERS*
  Lau, W. T., Fan, S. H.
  2002; 81 (21): 3915-3917
- **Wide bandwidth, large, and tunable polarization mode dispersions in multilayered omnidirectional reflectors** *APPLIED PHYSICS LETTERS*
  Wang, Z., Miller, D. A., Fan, S. H.
  2002; 81 (2): 187-189
- **Analysis of guided resonances in photonic crystal slabs** *PHYSICAL REVIEW B*
  Fan, S. H., Joannopoulos, J. D.
  2002; 65 (23)
- **Gene expression patterns in human liver cancers** *MOLECULAR BIOLOGY OF THE CELL*
  Chen, X., Cheung, S. T., So, S., Fan, S. T., Barry, C., Higgins, J., Lai, K. M., Ji, J. F., Dudoit, S., Ng, I. O., van de Rijn, M., Botstein, D., Brown, et al
  2002; 13 (6): 1929-1939

- **Sharp asymmetric line shapes in side-coupled waveguide-cavity systems** *APPLIED PHYSICS LETTERS*
  Fan, S. H.
  2002; 80 (6): 908-910
- **Photonic-crystal slow-light enhancement of nonlinear phase sensitivity** *Journal of the Optical Society of America B-Optical Physics*
  Soljacic, M., Johnson, S., G., Fan et. al., S., H.
  2002; 19 (9): 2052-2059
- **Photonic crystal for communication applications** *Conference on Active and Passive Optical Components for WDM Communications II*
  Fan, S. H., Wang, Z., Miller, D. A., Villeneuve, P. R., Haus, H. A., Joannopoulos, J. D.
  SPIE-INT SOC OPTICAL ENGINEERING.2002: 339–347
- **Two dimensional photonic crystal modes and resonances in three-dimensional structures** *Conference on Progress in Semiconductor Materials for Optoelectron Applications held at the 2001 MRS Fall Meeting*
  Fan, S. H., Joannopoulos, J. D.
  MATERIALS RESEARCH SOCIETY.2002: 697–708
- **Enhancement of phase sensitivity by exploring slow light in photonic crystals** *Conference on Active and Passive Optical Components for WDM Communications II*
  Soljacic, M., Johnson, S. G., Fan, S. H., Ibanescu, M., Ippen, E., Joannopoulos, J. D.
  SPIE-INT SOC OPTICAL ENGINEERING.2002: 289–299
- **Wide bandwidth, large, and tunable polarization mode dispersions in multilayered omnidirectional reflectors** *Applied Physics Letters*
  Wang, Z., Miller, D., A. B., Fan, S., H.
  2002; 81 (2): 187-189
- **Sharp asymmetric line shapes in side-coupled waveguide-cavity systems** *Applied Physics Letters*
  Fan, S., H.
  2002; 80 (6): 908-910
- **Analysis of guided resonances in photonic crystal slabs** *Physical Review B*
  Fan, S., H., Joannopoulos, J., D.
  2002; 65 (23)
- **Can silicon dimers form logic gates?** *8th Foresight Conference on Molecular Nanotechnology*
  Appelbaum, I., Wang, T. R., Fan, S. H., Joannopoulos, J. D., Narayanamurti, V.
  IOP PUBLISHING LTD.2001: 391–93
- **Waveguide branches in photonic crystals** *Journal of the Optical Society of America B-Optical Physics*
  Fan, S., H., Johnson, S., G., Joannopoulos et. al., J., D.
  2001; 18 (2): 162-165
- **Enhanced coupling to vertical radiation using a two-dimensional photonic crystal in a semiconductor light-emitting diode** *Applied Physics Letters*
  Erchak, A., A., Ripin, D., J., Fan et. al., S.
  2001; 78 (5): 563-565
- **Can silicon dimers form logic gates?** *Nanotechnology*
  Appelbaum, I., Wang, T., R., Fan et. al., S., H.
  2001; 12 (3): 391-393
- **Multipole-cancellation mechanism for high-Q cavities in the absence of a complete photonic band gap** *Applied Physics Letters*
  Johnson, S., G., Fan, S., Mekis et. al., A.
  2001; 78 (22): 3388-3390
- **Molding the flow of light** *Computing in Science & Engineering*
  Johnson, S., G., Mekis, A., Fan et. al., S., H.
  2001; 3 (6): 38-47
- **Loss-induced on/off switching in a channel add/drop filter** *Physical Review B*

Fan, S., H., Villenueve, P., R., Joannopoulos et. al., J., D.
2001; 64 (24)

- **Emulation of two-dimensional photonic crystal defect modes in a photonic crystal with a three-dimensional photonic band gap** *Physical Review B*
  Povinelli, M., L., Johnson, S., G., Fan et. al., S., H.
  2001; 64 (7): art. no.-075313
- **Loss-induced on/off switching in a channel add/drop filter** *Physical Review B*
  Fan, S., H., Villenueve, P., R., Joannopoulos et. al., J., D.
  2001; 64 (24)
- **Emulation of two-dimensional photonic crystal defect modes in a photonic crystal with a three-dimensional photonic band gap** *Physical Review B*
  Povinelli, M., L., Johnson, S., G., Fan et. al., S., H.
  2001; 64 (7): art. no.-075313
- **An all-dielectric coaxial waveguide** *Science*
  Ibanescu, M., Fink, Y., Fan et. al., S.
  2000; 289 (5478): 415-419
- **Linear waveguides in photonic-crystal slabs** *Physical Review B*
  Johnson, S., G., Villenueve, P., R., Fan et. al., S.
  2000; 62 (12): 8212-8222
- **Rate-equation analysis of output efficiency and modulation rate of photonic-crystal light-emitting diodes** *: Ieee Journal of Quantum Electronics*
  Fan, S., H., Villenueve, P., R., Joannopoulos, J., D.
  2000; 36 (10): 1123-1130
- **Photonic band gap airbridge microcavity resonances in GaAs/AlxOy waveguides** *Journal of Applied Physics*
  Fan, S., H., Ripin, D., J., Lim, K., Y., Petrich et. al., G., S.
  2000; 87 (3): 1578-1580
- **Guiding optical light in air using an all-dielectric structure** *JOURNAL OF LIGHTWAVE TECHNOLOGY*
  Fink, Y., Ripin, D. J., Fan, S. H., Chen, C. P., Joannopoulos, J. D., Thomas, E. L.
  1999; 17 (11): 2039-2041
- **Self-oriented regular arrays of carbon nanotubes and their field emission properties** *Science (New York, N.Y.)*
  Fan, S., Chapline, M. G., Franklin, N. R., Tombler, T. W., Cassell, A. M., Dai, H.
  1999; 283 (5401): 512-4
- **Guiding optical light in air using an all-dielectric structure** *Journal of Lightwave Technology*
  Fink, Y., Ripin, D., J., Fan et. al., S., H.
  1999; 17 (11): 2039-2041
- **Theoretical analysis of channel drop tunneling processes** *Physical Review B*
  Fan, S., H., Villeneuve, P., R., Joannopoulos et. al., J., D.
  1999; 59 (24): 15882-15892
- **Interband transitions in photonic crystals** *Physical Review B*
  Winn, J., N., Fan, S., H., Joannopoulos et. al., J., D.
  1999; 59 (3): 1551-1554
- **The role of the thermal oxide in GaAs-based photonic bandgap waveguide microcavities** *Advanced Materials*
  Fan, S., H., Lim, K., Y., Ripin, D., J., Petrich et. al., G., S.
  1999; 11 (6): 501-+
- **Absorbing boundary conditions for FDTD simulations of photonic crystal waveguides** *Ieee Microwave and Guided Wave Letters*
  Mekis, A., Fan, S., H., Joannopoulos, J., D.
  1999; 9 (12): 502-504

- **One-dimensional photonic bandgap microcavities for strong optical confinement in GaAs and GaAs/AlxOy semiconductor waveguides** *Journal of Lightwave Technology*
  Fan, S., H., Ripin, D., J., Lim, K., Y., Petrich et. al., G., S.
  1999; 17 (11): 2152-2160
- **Coupling of modes analysis of resonant channel add-drop filters** *Ieee Journal of Quantum Electronics*
  Manolatou, C., Khan, M., J., Fan et. al., S., H.
  1999; 35 (9): 1322-1331
- **Near-field scanning optical microscopy as a simultaneous probe of fields and band structure of photonic crystals: A computational study** *Applied Physics Letters*
  Fan, S., H., Appelbaum, I., Joannopoulos, J., D.
  1999; 75 (22): 3461-3463
- **High-density integrated optics** *Journal of Lightwave Technology*
  Manolatou, C., Johnson, S., G., Fan et. al., S., H.
  1999; 17 (9): 1682-1692
- **Guided modes in photonic crystal slabs** *Physical Review B*
  Johnson, S., G., Fan, S., H., Villenueve et al., P., R.
  1999; 60 (8): 5751-5758
- **Photonic band-gap waveguide microcavities: Monorails and air bridges** *Journal of Vacuum Science & Technology B*
  Fan, S., H., Lim, K., Y., Ripin, D., J., Petrich et. al., G., S.
  1999; 17 (3): 1171-1174
- **Mode-coupling analysis of multipole symmetric resonant add/drop filters** *Ieee Journal of Quantum Electronics*
  Khan, M., J., Manolatou, C., Fan et. al., S., H.
  1999; 35 (10): 1451-1460
- **Channel drop filters in photonic crystals** *Optics Expres*
  Fan, S., H., Villeneuve, P., R., Joannopoulos et. al., J., D.
  1998; 3 (1): 4-11
- **Omnidirectional reflection from a one-dimensional photonic crystal** *Optics Letters*
  Winn, J., N., Fink, Y., Fan et. al., S., H.
  1998; 23 (20): 1573-1575
- **Channel drop tunneling through localized states** *Physical Review Letters*
  Fan, S., H., Villeneuve, P., R., Joannopoulos, J., D.
  1998; 80 (5): 960-963
- **Three-dimensional photon confinement in photonic crystals of low-dimensional periodicity**
  Villeneuve, P., R., Fan, S., Johnson et al., S., G.
  1998
- **Elimination of cross talk in waveguide intersections** *Optics Letters*
  Johnson, S., G., Manolatou, C., Fan et. al., S., H.
  1998; 23 (23): 1855-1857
- **Bound states in photonic crystal waveguides and waveguide bends** *Physical Review B*
  Mekis, A., Fan, S., H., Joannopoulos, J., D.
  1998; 58 (8): 4809-4817
- **A dielectric omnidirectional reflector** *Science*
  Fink, Y., Winn, J., N., Fan et. al., S., H.
  1998; 282 (5394): 1679-1682
- **3D metallo-dielectric photonic crystals with strong capacitive coupling between metallic islands** *Physical Review Letters*
  Fan, S., H., Sievenpiper, D., F., Yablonovitch, E., Winn et. al., J., N.

1998; 80 (13): 2829-2832

- **Photonic crystals** *Solid State Communications*
  Joannopoulos, J., D., Villeneuve, P., R., Fan, S., H.
  1997; 102 (2-3): 165-173
- **Photonic crystal light emitting diodes** *Conference on Light-Emitting Diodes - Research, Manufacturing, and Applications*
  Fan, S. H., Villeneuve, P. R., Joannopoulos, J. D., Schubert, E. F.
  SPIE - INT SOC OPTICAL ENGINEERING.1997: 67–73
- **Finite differencing of periodic structures** *Conference on Physics and Simulation of Optoelectronic Devices V*
  Chen, J. C., Fan, S., Mekis, A., Kurland, I., Villeneuve, P. R., Li, K., Haus, H. A., Joannopoulos, J. D.
  SPIE-INT SOC OPTICAL ENGINEERING.1997: 275–286
- **Photonic crystals: Putting a new twist on light (vol 386, pg 143, 1997)** *Nature*
  Joannopoulos, J., D., Villeneuve, P., R., Fan, S., H.
  1997; 387 (6635): 830
- **Photonic-bandgap microcavities in optical waveguides** *Nature*
  Fan, S., H., Foresi, J., S., Villeneuve, P., R., Ferrera et. al., J.
  1997; 390 (6656): 143-145
- **Photonic crystals: Putting a new twist on light** *Nature*
  Joannopoulos, J., D., Villeneuve, P., R., Fan, S., H.
  1997; 386 (6621): 143-149
- **High extraction efficiency of spontaneous emission from slabs of photonic crystals** *Physical Review Letters*
  Fan, S., H., Villeneuve, P., R., Joannopoulos et. al., J., D.
  1997; 78 (17): 3294-3297
- **High transmission through sharp bends in photonic crystal waveguides** *Physical Review Letters*
  Fan, S., H., Mekis, A., Chen, J., C., Kurland et. al., I.
  1996; 77 (18): 3787-3790
- **Microcavities in channel waveguides** *NATO Advanced Study Institute on Photonic Band Gap Materials*
  Villeneuve, P. R., Fan, S. H., Joannopoulos, J. D., Lim, K. Y., Chen, J. C., Petrich, G. S., Kolodziejski, L. A., Reif, R.
  KLUWER ACADEMIC PUBL.1996: 411–426
- **Microcavities in photonic crystals** *NATO Advanced Study Institute on Quantum Optics in Wavelength Scale Structures*
  Villeneuve, P. R., Fan, S. H., Joannopoulos, J. D.
  KLUWER ACADEMIC PUBL.1996: 133–151
- **Optical filters from photonic band gap air bridges** *Journal of Lightwave Technology*
  Chen, J., C., Haus, H., A., Fan et. al., S., H.
  1996; 14 (11): 2575-2580
- **Single-mode waveguide microcavity for fast optical switching** *Optics Letters*
  Villeneuve, P., R., Abrams, D., S., Fan et. al., S., H.
  1996; 21 (24): 2017-2019
- **Large omnidirectional band gaps in metallodielectric photonic crystals** *Physical Review B*
  Fan, S., H., Villeneuve, P., R., Joannopoulos, J., D.
  1996; 54 (16): 11245-11251
- **Microcavities in photonic crystals: Mode symmetry, tunability, and coupling efficiency** *Physical Review B*
  Villeneuve, P., R., Fan, S., H., Joannopoulos, J., D.
  1996; 54 (11): 7837-7842
- **AIR-BRIDGE MICROCAVITIES** *Applied Physics Letters*
  Villeneuve, P., R., Fan, S., H., Joannopoulos et. al., J., D.

1995; 67 (2): 167-169

- **Wide stop band optical filters from photonic band gap air bridges** *4th Weber-Research-Institute International Symposium on Guided-Wave Optoelectronics - Device Characterization, Analysis, and Design*
  Chen, J. C., Haus, H. A., Winn, J. N., Fan, S., Joannopoulos, J. D.
  PLENUM PRESS DIV PLENUM PUBLISHING CORP.1995: 477–483
- **GUIDED AND DEFECT MODES IN PERIODIC DIELECTRIC WAVE-GUIDES** *Journal of the Optical Society of America B-Optical Physics*
  Fan, S., H., Winn, J., N., Devenyi et. al., A.
  1995; 12 (7): 1267-1272
- **THEORETICAL INVESTIGATION OF FABRICATION-RELATED DISORDER ON THE PROPERTIES OF PHOTONIC CRYSTALS** *Journal of Applied Physics*
  Fan, S., H., Villeneuve, P., R., Joannopoulos, J., D.
  1995; 78 (3): 1415-1418
- **DESIGN OF 3-DIMENSIONAL PHOTONIC CRYSTALS AT SUBMICRON LENGTH SCALES** *Applied Physics Letters*
  Fan, S., H., Villeneuve, P., R., Meade et. al., R., D.
  1994; 65 (11): 1466-1468