



Shanhui Fan

Director, Edward L. Ginzton Laboratory, Professor of Electrical Engineering, Senior Fellow at the Precourt Institute for Energy and Professor, by courtesy, of Applied Physics

Bio

BIO

Fan's research involves the theory and simulations of photonic and solid-state materials and devices; photonic crystals; nano-scale photonic devices and plasmonics; quantum optics; computational electromagnetics; parallel scientific computing.

ACADEMIC APPOINTMENTS

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

HONORS AND AWARDS

- Fellow, IEEE (2010)
- Fellow, SPIE (2009)
- Fellow, American Physical Society (2008)
- Fellow, Optical Society of America (2007)
- Award for Initiatives in Research, NAS (2007)
- David and Lucile Packard Fellowship in Science and Engineering, David and Lucile Packard (2013)
- David and Lucile Packard Foundation Career Award, David and Lucile Packard (2013)
- Adolph Lomb Medal, National Science Foundation (2013)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- member, Optical Society of America (2013 - present)

PROFESSIONAL EDUCATION

- PhD, MIT, Physics (1997)

LINKS

- <http://www.stanford.edu/~shanhui>: <http://www.stanford.edu/~shanhui>

Teaching

COURSES

2018-19

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

2017-18

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

2016-17

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

2015-16

- Basic Physics for Solid State Electronics: EE 228 (Spr)
- Guided Waves: EE 236B (Win)

STANFORD ADVISEES

Doctoral Dissertation Reader (AC)

Lars Neustock, Mohammad Zaman, Jingyuan Linda Zhang

Postdoctoral Faculty Sponsor

Viktar Asadchy, Avik Dutt, Yu Guo, Weiliang Jin, Wei Li, Momchil Minkov, Georgia Theano Papadakis, Alex Song, Ian Williamson, Bo Zhao

Master's Program Advisor

Peter Bryan

Doctoral (Program)

Geun Ho Ahn, Lingling Fan, Jinhie Skarda

Publications

PUBLICATIONS

- **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
- **Near-complete violation of detailed balance in thermal radiation** *PHYSICAL REVIEW B*
Zhu, L., Fan, S.
2014; 90 (22)

- **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
- **Consideration of enhancement of thermal rectification using metamaterial models** *JOURNAL OF QUANTITATIVE SPECTROSCOPY & RADIATIVE TRANSFER*
Iizuka, H., Fan, S.
2014; 148: 156-164
- **Light Guiding by Effective Gauge Field for Photons** *PHYSICAL REVIEW X*
Lin, Q., Fan, S.
2014; 4 (3)
- **Total absorption by degenerate critical coupling** *APPLIED PHYSICS LETTERS*
Piper, J. R., Liu, V., Fan, S.
2014; 104 (25)
- **Optical Fano resonance of an individual semiconductor nanostructure** *NATURE MATERIALS*
Fan, P., Yu, Z., Fan, S., Brongersma, M. L.
2014; 13 (5): 471-475
- **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
- **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
- **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
- **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)
- **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*
Intaraprasongk, 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
- **Dissipation in few-photon waveguide transport [Invited]** *PHOTONICS RESEARCH*
Rephaeli, E., Fan, S.
2013; 1 (3): 110-114
- **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
- **Optical pulling force and conveyor belt effect in resonator-waveguide system** *OPTICS LETTERS*
Intaraprasongk, V., Fan, S.
2013; 38 (17): 3264-3267
- **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)
- **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
- **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., Dignonnet, 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-?
- **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-?
- **Enhancing the waveguide-resonator optical force with an all-optical on-chip analog of electromagnetically induced transparency** *PHYSICAL REVIEW A*
Intaraprasongk, 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., Dignonnet, 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)
- **From Electromagnetically Induced Transparency to Superscattering with a Single Structure: A Coupled-Mode Theory for Doubly Resonant Structures** *Physical Review Letters*
Fan, S., H., Verslegers, L., Yu, Z., F., Ruan et al., Z., C.
2012; 108 (8)
- **Temporal coupled-mode theory for light scattering by an arbitrarily shaped object supporting a single resonance** *Physical Review A*

- Ruan, Z., C., Fan, S., H.
2012; 85 (4)
- **Resonance fluorescence in a waveguide geometry** *Physical Review A*
Kocabas, S., E., Rephaeli, E., Fan, S., H.
2012; 85 (2)
 - **Thermodynamic Upper Bound on Broadband Light Coupling with Photonic Structures** *Physical Review Letters*
Yu, Z., F., Raman, A., Fan, S., H.
2012; 109 (17)
 - **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)
 - **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*
Intaraprasongk, 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 equipfrequency 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*
Intaraprasong, 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*
Intaraprasong, 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., Stuhmann, 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
- **Wireless energy transfer with the presence of metallic planes** *Applied Physics Letters*
Fan, S., H., Yu, X., F., Sandhu, S., Beiker et. al., S.
2011; 99 (21)
- **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** *Journal 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*
Intaraprasongk, 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

- **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., Puztai, 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., Stuhmann, 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)-III 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., Puztai, 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*
Intaraprasong, 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
- **Absorber and emitter for solar thermophotovoltaic systems to achieve efficiency exceeding the Shockley-Queisser limit** *Optics Express*
Rephaeli, E., Fan, S., H.
2010; 17 (17): 15145-15159
- **Full inversion of a two-level atom with a single-photon pulse in one-dimensional geometries** *Physical Review A*
Rephaeli, E., Shen, J., T., Fan, S., H.
2010; 82 (3)
- **Experimental demonstration of an all-optical analogue to the superradiance effect in an on-chip photonic crystal resonator system** *Physical Review B*
Fan, S., H., Pan, J., Sandhu, S., Huo et. al., Y., J.
2010; 81 (4)
- **Exponential suppression of thermal conductance using coherent transport and heterostructures** *Physical Review B*
Lau, W., T., Shen, J., T., Fan, S., H.
2010; 82 (11)
- **Enhancement of optical absorption in thin-film organic solar cells through the excitation of plasmonic modes in metallic gratings** *Applied Physics Letters*
Fan, S., H., Min, C., J., Li, J., Veronis et. al., G.
2010; 96 (13)
- **Tuning the coherent interaction in an on-chip photonic-crystal waveguide-resonator system** *Applied Physics Letters*
Pan, J., Huo, Y., J., Sandhu et. al., S.
2010; 97 (10)
- **Input-output formalism for few-photon transport in one-dimensional nanophotonic waveguides coupled to a qubit** *Physical Review A*
Fan, S., H., Kocabas, S., E., shen, J., T.
2010; 82 (6)
- **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., Pavinelli, 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., Stuhmann, 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*
Intaraprasong, 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
- **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., T., Fan, S., H.
2009; 79 (2)
- **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 et. al., S., H.
2009; 95 (8)
- **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., Dignonnet, 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
- **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
- **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)
- **Polarization controller for hollow-core fiber** *OPTICS LETTERS*
Terrel, M., Dignonnet, 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

- **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*
Cattrysse, 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*
Cattrysse, 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
 - **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)
 - **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

- **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., Dignonnet, 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
- **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
- **Optical circulators in two-dimensional magneto-optical photonic crystals** *OPTICS LETTERS*
Wang, Z., Fan, S. H.
2005; 30 (15): 1989-1991
- **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)
- **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

- **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

- **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., Dignonnet, 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
- **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*
Dignonnet, 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
- **Designing air-core photonic-bandgap fibers free of surface modes** *IEEE JOURNAL OF QUANTUM ELECTRONICS*
Kim, H. K., Shin, J., Fan, S. H., Dignonnet, 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)
- **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
- **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 flat-top 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., Soljagic, 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)
- **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
- **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
- **High-contrast all-optical bistable switching in photonic crystal microcavities** *Applied Physics Letters*
Yanik, M., F., Fan, S., H., Soljagic, 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 μm** *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
- **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
- **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
- **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)
- **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., Villeneuve, 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., Villeneuve, 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., Villeneuve, 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
- **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., Tomblor, T. W., Cassell, A. M., Dai, H.
1999; 283 (5401): 512-14
- **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., Villeneuve 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
- **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
- **Channel drop filters in photonic crystals** *Optics Express*
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 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
- **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
- **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