

## Selected Nanophotonics Research Publications

Three Dimensional Metafilms with Dual Channel Unit Cells  
*App. Phys. Letters* 110(143107) Mar. 2017. DOI: [10.1063/1.4979698](https://doi.org/10.1063/1.4979698)

Transient GaAs Plasmonic Metasurfaces at Terahertz Frequencies  
*ACS Photonics* 4(1) 15-21 Jan. 2017. DOI: [10.1021/acsp Photonics.6b00735](https://doi.org/10.1021/acsp Photonics.6b00735)

Nonpolar InGaN/GaN Core-Shell Single Nanowire Lasers  
*Nano Letters* 17(2) 1049-1055 Jan. 2017. DOI: [10.1021/acsnanolett.6b04483](https://doi.org/10.1021/acsnanolett.6b04483)

Photon-Phonon-Enhanced Infrared Rectification in a 2D Nanoantenna-Coupled Tunnel Diode  
*Phys. Rev. Applied* 6(064019) Dec. 2016 DOI: [10.1103/PhysRevApplied.6.064019](https://doi.org/10.1103/PhysRevApplied.6.064019)

Enhanced Infrared Detectors Using Resonant Structures Combined With Thin Type-II Superlattice Absorbers  
*Appl. Phys. Letters* 109(251103) Dec. 2016. DOI: [10.1063/1.4972844](https://doi.org/10.1063/1.4972844)

Broken Symmetry Dielectric Resonators for High Quality-factor Fano Metasurfaces  
*ACS Photonics* 3(12) 2362-2367 Oct. 2016. DOI: [10.1021/acsp Photonics.6b00556](https://doi.org/10.1021/acsp Photonics.6b00556)

III-V Semiconductor Nanoresonators—A New Strategy for Passive, Active, and Nonlinear All-Dielectric Metamaterials  
*Adv. Opt. Materials* 4(10) 1457-1462 Oct. 2016. DOI: [10.1002/adom.201600240](https://doi.org/10.1002/adom.201600240)

Spectral Filtering Using Active Metasurfaces Compatible with Narrow Bandgap III-V Infrared Detectors  
*Optics Express* 24(19) 21512-21520 Sep. 2016. DOI: [10.1364/OE.24.021512](https://doi.org/10.1364/OE.24.021512)

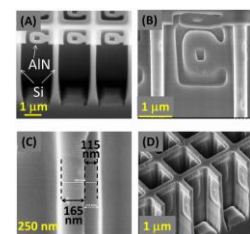
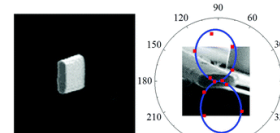
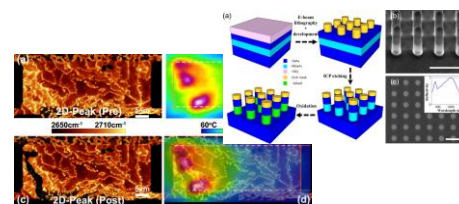
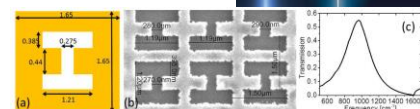
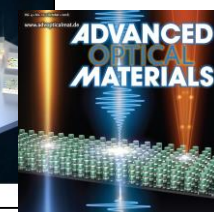
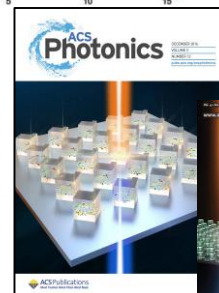
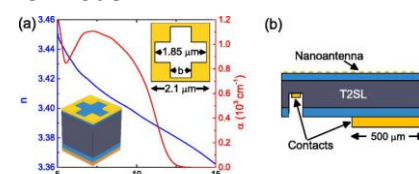
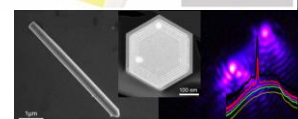
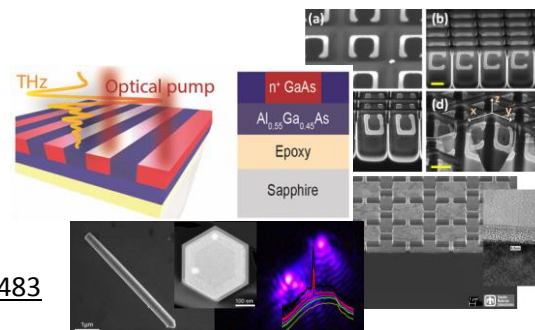
Resonantly Enhanced Second-Harmonic Generation Using III-V Semiconductor All-Dielectric Metasurfaces  
*Nano Letters* 16(9), 5426-5432 Aug 2016. DOI: [10.1021/acsnanolett.6b01816](https://doi.org/10.1021/acsnanolett.6b01816)

Self-Heating and Failure in Scalable Graphene Devices  
*Scientific Reports* 6(26457), Jun. 2016. DOI: [10.1038/srep26457](https://doi.org/10.1038/srep26457)

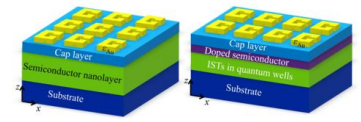
Efficient Polarization-Insensitive Complex Wavefront Control Using Huygens' Metasurfaces Based on Dielectric Resonant Meta-atoms  
*ACS Photonics*, 2016, 3(4), 514-519 Mar. 2016. DOI: [10.1021/acsp Photonics.5b00678](https://doi.org/10.1021/acsp Photonics.5b00678)

Oblique Patterned Etching of Vertical Silicon Sidewalls  
*Appl. Phys. Letters* 108(142103) Mar. 2016. DOI: [10.1063/1.4945681](https://doi.org/10.1063/1.4945681)

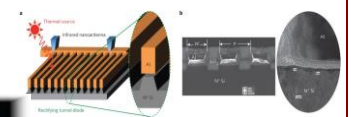
Intrinsic Polarization Control in Rectangular GaN Nanowire Lasers  
*Nanoscale* 8, 5682-5687 Feb. 2016. DOI: [10.1039/c5nr07504a](https://doi.org/10.1039/c5nr07504a)



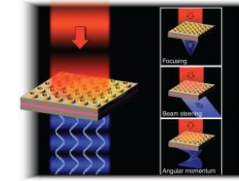
Epsilon-Near-Zero Modes for Tailored Light-Matter Interaction,  
*Phys. Rev. Applied* 4(044011) Oct 2015. DOI: [10.1103/PhysRevApplied.4.044011](https://doi.org/10.1103/PhysRevApplied.4.044011)



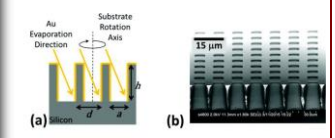
Infrared Rectification in a Nanoantenna-Coupled Metal-Oxide-Semiconductor Tunnel Diode  
*Nature Nanotechnology* Sep. 2015. DOI: [10.1038/nnano.2015.216](https://doi.org/10.1038/nnano.2015.216)



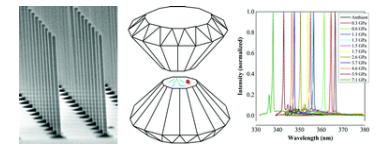
Directional Emissivity from Two-Dimensional Infrared Waveguide Arrays  
*Appl. Phys. Letters* 107(121902) Sep. 2015 DOI: [10.1063/1.4931124](https://doi.org/10.1063/1.4931124)



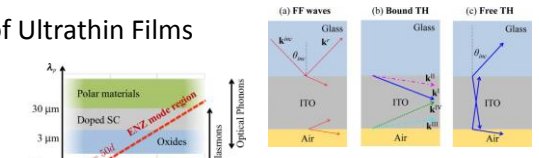
Phased-Array Sources Based on Nonlinear Metamaterial Nanocavities  
*Nature Communications* 6(7667) Jul. 2015 DOI: [10.1038/ncomms8667](https://doi.org/10.1038/ncomms8667)



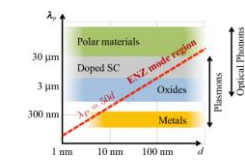
Continuous and Dynamic Spectral Tuning of Single Nanowire Lasers with Subnanometer Resolution Using Hydrostatic Pressure  
*Nanoscale* 7 9581-9588, Apr. 2015 DOI: [10.1039/C5NR01855B](https://doi.org/10.1039/C5NR01855B)



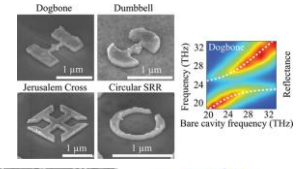
Enhanced Third Harmonic Generation from the Epsilon-Near-Zero Modes of Ultrathin Films  
*Appl. Phys. Lett.* 106(151103) Apr. 2015 DOI: [10.1063/1.4917457](https://doi.org/10.1063/1.4917457)



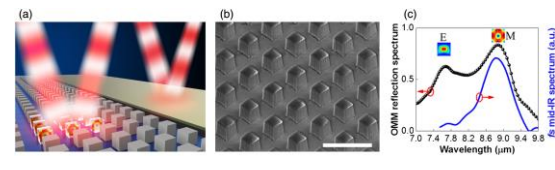
Theory of Epsilon-Near-Zero Modes in Ultrathin Films  
*Phys. Rev. B* 91(121408) Mar. 2015 DOI: [10.1103/PhysRevB.91.121408](https://doi.org/10.1103/PhysRevB.91.121408)



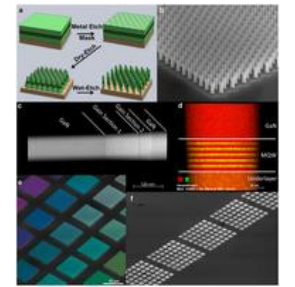
Control of Strong Light-Matter Coupling Using the Capacitance of Metamaterial Nanocavities  
*Nano Letters* 15(3) 1959-1966 Jan. 2015 DOI: [10.1021/nl504815c](https://doi.org/10.1021/nl504815c)



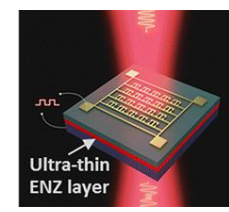
Optical Magnetic Mirrors without Metals  
*Optica* 1(4) 250-256 Oct. 2014  
 DOI: [10.1364/OPTICA.1.000250](https://doi.org/10.1364/OPTICA.1.000250)



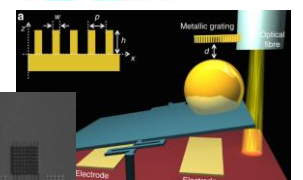
Optical Strong Coupling between Near-Infrared Metamaterials and Intersubband Transitions in III-Nitride Heterostructures,  
*ACS Photonics* 1(10) 906-911 Aug. 2014 DOI: [10.1021/ph500192v](https://doi.org/10.1021/ph500192v)



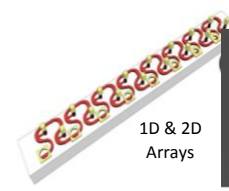
Multi-Colour Nanowire Photonic Crystal Laser Pixels  
*Scientific Reports* 3(2982) Oct. 2013 DOI: [10.1038/srep02982](https://doi.org/10.1038/srep02982)



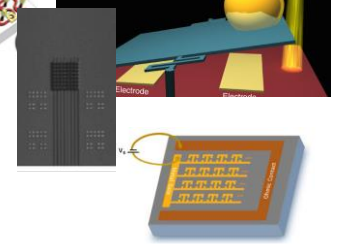
Epsilon-Near-Zero Strong Coupling in Metamaterial-Semiconductor Hybrid Structures  
*Nano Letters* 13(11) 5391-5396 Oct. 2013 DOI: [10.1021/nl402939t](https://doi.org/10.1021/nl402939t)



Strong Casimir Force Reduction through Metallic Surface Nanostructuring  
*Nature Communications* 4 (2515), Sep. 2013 DOI: [10.1038/ncomms3515](https://doi.org/10.1038/ncomms3515)



Electronically Controlled Optical Beam-Steering by an Active Phased Array of Metallic Nanoantennas  
*Optics Express* 21(4) 5198-5208 Feb. 2013 DOI: [10.1364/OE.21.005198](https://doi.org/10.1364/OE.21.005198)



Active Tuning of Mid-Infrared Metamaterials by Electrical Control of Carrier Densities  
*Optics Express* 20(2) 1903-1911, Jan. 2012 DOI: [10.1364/OE.20.001903](https://doi.org/10.1364/OE.20.001903)

