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Department of Photonics Engineering - Associate Professor, Head of Group
Plasmonics and Metamaterials

Publications:

Advanced fabrication of hyperbolic metamaterials
Publication: Research - peer-review › Article in proceedings – Annual report year: 2017

Analytical solutions for waves in spherically- and cylindrically-symmetric inhomogeneous media
Publication: Research - peer-review › Article in proceedings – Annual report year: 2017

Benchmarking five computational methods for analyzing large photonic crystal membrane cavities
Publication: Research - peer-review › Article in proceedings – Annual report year: 2017

Broadband infrared absorption enhancement by electroless-deposited silver nanoparticles
Publication: Research - peer-review › Journal article – Annual report year: 2017

Comparison of Five Computational Methods for Computing Q Factors in Photonic Crystal Membrane Cavities
Publication: Research - peer-review › Article in proceedings – Annual report year: 2017

Comparison of Five Numerical Methods for Computing Quality Factors and Resonance Wavelengths in Photonic Crystal Membrane Cavities
Publication: Research - peer-review › Article in proceedings – Annual report year: 2017

Effect of substrate on optical bound states in the continuum in 1D photonic structures
Publication: Research - peer-review › Conference article – Annual report year: 2017

Enhancing Optical Forces in InP-Based Waveguides
Panah, M. E. A., Semenova, E. & Lavrinenko, A. 2017 In : Scientific Reports. 7, 1, 8 p., 3106
Publication: Research - peer-review › Journal article – Annual report year: 2017

Highly ordered Al-doped ZnO nano-pillar and tube structures as hyperbolic metamaterials for mid-infrared plasmonics
Photonics surface waves on metamaterials interfaces: Topical Review
Takayama, O., Bogdanov, A. & Lavrinenko, A. V. 2017 In : Journal of Physics: Condensed Matter. 29, 46, 20 p., 463001
Publication: Research - peer-review › Journal article – Annual report year: 2017

Pulling cylindrical particles using a soft-nonparaxial tractor beam
Novitsky, A., Ding, W., Wang, M., Gao, D., Lavrinenko, A. & Qiu, C-W. 2017 In : Scientific Reports. 7, 1, 10 p., 652
Publication: Research - peer-review › Journal article – Annual report year: 2017

Spherically symmetric inhomogeneous bianisotropic media: Wave propagation and light scattering
Publication: Research - peer-review › Journal article – Annual report year: 2017

Transition from Optical Bound States in the Continuum to Leaky Resonances: Role of Substrate and Roughness
Publication: Research - peer-review › Journal article – Annual report year: 2017

Tunable Water-based Microwave Metasurface
Publication: Research - peer-review › Article in proceedings – Annual report year: 2017

Reconfigurable thz polarizer
Publication: Research › Patent – Annual report year: 2016

Broadband terahertz spectroscopy of chalcogenide glass As30Se30Te40
Publication: Research - peer-review › Article in proceedings – Annual report year: 2016

Conductive Oxides Trench Structures as Hyperbolic Metamaterials in Mid-infrared Range
Publication: Research - peer-review › Conference abstract for conference – Annual report year: 2016

Dark-field hyperlens for high-contrast sub-wavelength imaging
Publication: Research - peer-review › Article in proceedings – Annual report year: 2016

Design, fabrication and SNOM investigation of plasmonic devices
Publication: Research - peer-review › Conference abstract for conference – Annual report year: 2016

Effective medium approximation for deeply subwavelength all-dielectric multilayers: when does it break down?
Publication: Research - peer-review › Article in proceedings – Annual report year: 2016
Experimental demonstration of water based tunable metasurface
Publication: Research - peer-review › Journal article – Annual report year: 2016

Fabrication of Al-doped ZnO high aspect ratio nanowires and trenches as active components in mid-infrared plasmonics
Publication: Research - peer-review › Conference abstract for conference – Annual report year: 2016

Fabrication of deep-profile Al-doped ZnO one- and two-dimensional lattices as plasmonic elements
Publication: Research - peer-review › Article in proceedings – Annual report year: 2016

Fabrication of high aspect ratio TiO2 and Al2O3 nanogratings by atomic layer deposition
Publication: Research - peer-review › Journal article – Annual report year: 2016

Fabrication of hollow coaxial ZnAl2O4 high aspect ratio freestanding nanopillars based on the Kirkendall effect
Publication: Research - peer-review › Conference abstract for conference – Annual report year: 2016

Graphene-Enhanced Metamaterials for THz Applications
Publication: Research - peer-review › Book chapter – Annual report year: 2016

Highly doped InP as a low loss plasmonic material for mid-IR region
Publication: Research - peer-review › Journal article – Annual report year: 2016

Homogenization of metasurfaces formed by random resonant particles in periodical lattices
Publication: Research - peer-review › Journal article – Annual report year: 2016

Hybrid localized waves supported by resonant anisotropic metasurfaces
Publication: Research - peer-review › Article in proceedings – Annual report year: 2016

Hyperbolic Metamaterials with Complex Geometry
Publication: Research - peer-review › Article in proceedings – Annual report year: 2016

Near-field characterization of bound plasmonic modes in metal strip waveguides
Publication: Research - peer-review › Journal article – Annual report year: 2016

Nonlinear Dynamics of Ultrashort Long-Range Surface Plasmon Polariton Pulses in Gold Strip Waveguides
Lysenko, O., Bache, M., Olivier, N., Zayats, A. V. & Lavrinenko, A. 2016 In : ACS Photonics. 3, 12, p. 2324-2329
Nonlinear effects in propagation of long-range surface plasmon polaritons in gold strip waveguides

Nonlinear optical model for strip plasmonic waveguides
Lysenko, O., Bache, M. & Lavrinenko, A. 2016 In : Journal of the Optical Society of America B-optical Physics. 33, 7, p. 1341-1348

Nonlinear optical properties of ultrathin metal layers

Operator approach to effective medium theory to overcome a breakdown of Maxwell Garnett approximation

Optical bound state in the continuum in the one-dimensional photonic crystal slab: Theory and experiment

Photonic and plasmonic guided modes in graphene-silicon photonic crystals

Silicon doped InP as an alternative plasmonic material for mid-infrared

Surface Plasmons on Highly Doped InP

Surface waves on metal-dielectric metamaterials

Surface Waves on Metamaterials Interfaces
Tailoring Spectral Properties of Binary PT-Symmetric Gratings by Duty-Cycle Methods
Publication: Research - peer-review › Journal article – Annual report year: 2016

Third-order susceptibility of gold for ultrathin layers
Publication: Research - peer-review › Journal article – Annual report year: 2016

Time-resolved terahertz spectroscopy of charge carrier dynamics in the chalcogenide glass As30Se30Te40 [Invited]
Publication: Research - peer-review › Journal article – Annual report year: 2016

Adiabatic Nanofocusing of Short-Range SPPs
Publication: Research - peer-review › Conference abstract for conference – Annual report year: 2015

Anomalous effective medium approximation breakdown in deeply subwavelength all-dielectric photonic multilayers
Publication: Research - peer-review › Journal article – Annual report year: 2015

Applicability of point-dipoles approximation to all-dielectric metamaterials
Publication: Research - peer-review › Journal article – Annual report year: 2015

Boosting Local Field Enhancement by on-Chip Nanofocusing and Impedance-Matched Plasmonic Antennas
Publication: Research - peer-review › Journal article – Annual report year: 2015

Dark-field hyperlens: Super-resolution imaging of weakly scattering objects
Publication: Research - peer-review › Journal article – Annual report year: 2015

Deep subwavelength photonic multilayers fabricated by atomic layer deposition
Publication: Research - peer-review › Paper – Annual report year: 2015

Experimental Demonstration of Effective Medium Approximation Breakdown in Deeply Subwavelength All-Dielectric Multilayers
Publication: Research - peer-review › Journal article – Annual report year: 2015

Fabrication of TiO2 and Al2O3 High Aspect Ratio Nanostructured Gratings at Sub-Micrometer Scale
Publication: Research - peer-review › Paper – Annual report year: 2015

Graphene-enhanced metamaterials in THz applications
Publication: Research - peer-review › Conference abstract for conference – Annual report year: 2015
Improved Coupling to Plasmonic Slot Waveguide via a Resonant Nanoantenna
Publication: Research - peer-review › Conference abstract for conference – Annual report year: 2015

Internal Roughness Improves Hyperbolic Metamaterial Absorber
Publication: Research - peer-review › Conference abstract for conference – Annual report year: 2015

Is Effective Medium Approximation Always Valid for Ultrathin Multilayer All-dielectric Metamaterials?
Publication: Research - peer-review › Conference abstract in proceedings – Annual report year: 2015

Metamaterial-based Design for a Half Wavelength Plate in the Terahertz Range
Publication: Research - peer-review › Journal article – Annual report year: 2015

Metasurfaces for Terahertz Waves Polarization Control
Publication: Research - peer-review › Conference abstract for conference – Annual report year: 2015

Modeling, fabrication and high power optical characterization of plasmonic waveguides
Publication: Research - peer-review › Article in proceedings – Annual report year: 2015

Nanophotonic Modulator with Bismuth Ferrite as Low-loss Switchable Material
Publication: Research - peer-review › Article in proceedings – Annual report year: 2015

Optical Modes in Graphene on Silicon Photonic Crystal Membrane
Andryieuski, A., Low, T. & Lavrinenko, A. 2015
Publication: Research - peer-review › Conference abstract for conference – Annual report year: 2015

Optical Nano-antennae as Compact and Efficient Couplers from Free-space to Waveguide Modes
Publication: Research - peer-review › Conference abstract for conference – Annual report year: 2015

Overcoming doping limits in MOVPE grown n-doped InP for plasmonic applications
Publication: Research - peer-review › Article in proceedings – Annual report year: 2015

Photonic and Plasmonic Guided Modes in Graphene-Silicon Photonic Crystals
Publication: Research - peer-review › Article in proceedings – Annual report year: 2015

Photoswitchable molecular dipole antennas with tailored coherent coupling in glassy composite
Publication: Research - peer-review › Journal article – Annual report year: 2015
Plasmonic and Photonic Modes Excitation in Graphene on Silicon Photonic Crystal Membrane
Publication: Research - peer-review › Conference abstract for conference – Annual report year: 2015

Selective Electroless Silver Deposition on Graphene Edges
Publication: Research - peer-review › Journal article – Annual report year: 2015

TiO2 and Al2O3 ALD Grown Multilayers for Subwavelength Photonics
Publication: Research - peer-review › Conference abstract in proceedings – Annual report year: 2015

Transparent conducting oxides for electro-optical plasmonic modulators
Publication: Research - peer-review › Journal article – Annual report year: 2015

Tunable Multilayer Graphene Metamaterials for Terahertz/Infrared Waveguide Modulators
Khromova, I., Andryieuski, A., & Lavrinenko, A. 2015
Publication: Research - peer-review › Conference abstract for conference – Annual report year: 2015

Ultrabroadband terahertz characterization of highly doped ZnO and ITO
Publication: Research - peer-review › Article in proceedings – Annual report year: 2015

Ultrabroadband terahertz conductivity of highly doped ZnO and ITO
Publication: Research - peer-review › Journal article – Annual report year: 2015

Ultra-thin films for plasmonics: a technology overview
Publication: Research - peer-review › Journal article – Annual report year: 2015

Ultra-thin Metal and Dielectric Layers for Nanophotonic Applications
Publication: Research - peer-review › Article in proceedings – Annual report year: 2015

Ultrathin, Ultrasmooth Gold Layer on Dielectrics without the Use of Additional Metallic Adhesion Layers
Leandro, L., Malureanu, R., Rozlosnik, N. & Lavrinenko, A. 2015 In : A C S Applied Materials and Interfaces. 7, 10, p. 5797-5802
Publication: Research - peer-review › Journal article – Annual report year: 2015

Understanding of increased diffuse scattering in regular arrays of fluctuating resonant particles
Publication: Research - peer-review › Article in proceedings – Annual report year: 2016

Water: Promising Opportunities For Tunable All-dielectric Electromagnetic Metamaterials
Andryieuski, A., Kuznetsova, S. M., Zhukovsky, S., Kivshar, Y. S. & Lavrinenko, A. 2015 In : Scientific Reports. 5, 9 p., 13535
Publication: Research - peer-review › Journal article – Annual report year: 2015
Hyperbolic metamaterials beyond simple multilayers
Publication: Research - peer-review › Journal article – Annual report year: 2014

Bismuth ferrite as low-loss switchable material for plasmonic waveguide modulator
Publication: Research - peer-review › Journal article – Annual report year: 2014

Bismuth Ferrite for Active Control of Surface Plasmon Polariton Modes
Publication: Research - peer-review › Article in proceedings – Annual report year: 2014

Bulk photovoltaic effect in photoconductive metamaterials based on cone-shaped nanoparticles
Publication: Research - peer-review › Article in proceedings – Annual report year: 2014

CMOS Compatible Ultra-Compact Modulator
Publication: Research - peer-review › Article in proceedings – Annual report year: 2014

Direct Characterization of Plasmonic Slot Waveguides and Nanocouplers
Publication: Research - peer-review › Journal article – Annual report year: 2014

Electron photoemission in plasmonic nanoparticle arrays: analysis of collective resonances and embedding effects
Publication: Research - peer-review › Journal article – Annual report year: 2014

Enhanced Electron Photoemission by Collective Lattice Resonances in Plasmonic Nanoparticle-Array Photodetectors and Solar Cells
Publication: Research - peer-review › Journal article – Annual report year: 2014

Existence conditions for bulk large-wavevector waves in metal-dielectric and graphene-dielectric multilayer hyperbolic metamaterials
Publication: Research - peer-review › Article in proceedings – Annual report year: 2014

From surface to volume plasmons in hyperbolic metamaterials: General existence conditions for bulk high-k waves in metal-dielectric and graphene-dielectric multilayers.
Publication: Research - peer-review › Journal article – Annual report year: 2014

Giant Photogalvanic Effect in Noncentrosymmetric Plasmonic Nanoparticles
Publication: Research - peer-review › Journal article – Annual report year: 2014
Multi-Periodic Photonic Hyper-Crystals: Volume Plasmon Polaritons and the Purcell Effect
Publication: Research - peer-review › Article in proceedings – Annual report year: 2014

Nanoplasmonic solution for nonlinear optics
Publication: Research - peer-review › Conference abstract in proceedings – Annual report year: 2014

Numerical Methods in Photonics
Publication: Research - peer-review › Book – Annual report year: 2015

Photoconductive metamaterials with giant plasmonic photogalvanic effect
Publication: Research - peer-review › Article in proceedings – Annual report year: 2014

Photo-driven Super Absorber as an Active Metamaterial with a Tunable Molecular-Plasmonic Coupling
Publication: Research - peer-review › Journal article – Annual report year: 2014

Photon absorption and photocurrent in solar cells below semiconductor bandgap due to electron photoemission from plasmonic nanoantennas
Publication: Research - peer-review › Journal article – Annual report year: 2012

Photonic-band-gap engineering for volume plasmon polaritons in multiscale multilayer hyperbolic metamaterials
Publication: Research - peer-review › Journal article – Annual report year: 2014

Plasmonic Antennas Nanocoupler for Telecom Range: Simulation, Fabrication and Near-Field Characterization
Publication: Research - peer-review › Article in proceedings – Annual report year: 2014

Plasmonic Modulator Using CMOS Compatible Material Platform
Publication: Research - peer-review › Article in proceedings – Annual report year: 2014

Plasmonic Nanocone Arrays as Photoconductive and Photovoltaic Metamaterials
Publication: Research - peer-review › Article in proceedings – Annual report year: 2014

Populating the Large-Wavevector Realm: Bloch Volume Plasmon Polaritons in Hyperbolic and Extremely Anisotropic Metamaterials

Publication: Research - peer-review › Article in proceedings – Annual report year: 2014

Rough metal and dielectric layers make an even better hyperbolic metamaterial absorber

Publication: Research - peer-review › Journal article – Annual report year: 2014

Scattering of Light and Pulling Optical Forces for Hyperbolic-Metamaterial Spheres

Publication: Research - peer-review › Article in proceedings – Annual report year: 2014

Simulation, Fabrication and Near-Field Characterization of Nanoantenna Couplers for Telecom Range

Publication: Research - peer-review › Article in proceedings – Annual report year: 2014

Super-resolution near field imaging device
Andryieuski, A., Malureanu, R. & Lavrinenko, A. 2014

Publication: Research › Patent – Annual report year: 2014

Surface and volume photoemission of hot electrons from plasmonic nanoantennas

Publication: Research - peer-review › Article in proceedings – Annual report year: 2014

Terahertz/infrared waveguide modulators using graphene metamaterials
Khromova, I., Andryieuski, A. & Lavrinenko, A. 2014

Publication: Research - peer-review › Conference abstract for conference – Annual report year: 2014

Ultrasensitive terahertz/infrared waveguide modulators based on multilayer graphene metamaterials

Publication: Research - peer-review › Journal article – Annual report year: 2014

Ultrasensitive Terahertz Waveguide Modulators Using Multilayer Graphene Metamaterials

Publication: Research - peer-review › Article in proceedings – Annual report year: 2014

A plasmonic modulator based on metal-insulator-metal waveguide with barium titanate core
Babicheva, V. & Lavrinenko, A. 2013 In : Photonics Letters of Poland. 5, 2, p. 57-59

Publication: Research - peer-review › Journal article – Annual report year: 2013

Coherence matrix of plasmonic beams
Novitsky, A. & Lavrinenko, A. 2013 In : Photonics Letters of Poland. 5, 2, p. 66-68

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Collective Resonances in Hexagonal Array of Plasmonic Nanoparticles

Publication: Research - peer-review › Article in proceedings – Annual report year: 2013
Modeling and understanding of effects of randomness in arrays of resonant meta-atoms
Publication: Research - peer-review › Article in proceedings – Annual report year: 2013

New Nanoplasmonic Photovoltaics Based on Enhanced Photoemission from Plasmonic Nanoantennas
Publication: Research - peer-review › Article in proceedings – Annual report year: 2013

Optical Filters Based on Fractal and Aperiodic Multilayers
Publication: Research - peer-review › Book chapter – Annual report year: 2013

Optically active Babinet planar metamaterial film for terahertz polarization manipulation
Publication: Research - peer-review › Journal article – Annual report year: 2013

Optimization design of optical waveguide control by nanoslit-enhanced THz field
Novitsky, A., Malureanu, R., Zalkovskij, M., Jepsen, P. U. & Lavrinenko, A. 2013 In : Photonics and Nanostructures. 11, 4, p. 310-322
Publication: Research - peer-review › Journal article – Annual report year: 2013

Plasmonic Dimer Metamaterials and Metasurfaces for Polarization Control of Terahertz and Optical Waves
Publication: Research - peer-review › Article in proceedings – Annual report year: 2013

Plasmonic finite-thickness metal-semiconductor-metal waveguide as ultra-compact modulator
Babicheva, V., Malureanu, R. & Lavrinenko, A. 2013 In : Photonics and Nanostructures. 11, 4, p. 323-334
Publication: Research - peer-review › Journal article – Annual report year: 2014

Plasmonic modulator based on thin metal-semiconductor-metal waveguide with gain core
Publication: Research - peer-review › Conference article – Annual report year: 2013

Plasmonics
Publication: Research - peer-review › Journal article – Annual report year: 2014

Plasmonics light modulators
Babicheva, V., Malureanu, R. & Lavrinenko, A. 2013
Publication: Research - peer-review › Conference abstract for conference – Annual report year: 2013

Single and Coupled Nanobeam Cavities
Publication: Research - peer-review › Book chapter – Annual report year: 2013

Slot-dimer babinet metamaterials as polarization shapers for terahertz waves
Terahertz cross-phase modulation of an optical mode
Publication: Research - peer-review › Article in proceedings – Annual report year: 2014

Terahertz-induced Kerr effect in amorphous chalcogenide glasses
Publication: Research - peer-review › Article in proceedings – Annual report year: 2013

Terahertz wave manipulation with metamaterials based on metal and graphene
Publication: Research - peer-review › Conference abstract in proceedings – Annual report year: 2013

Towards CMOS-compatible nanophotonics: Ultra-compact modulators using alternative plasmonic materials
Publication: Research - peer-review › Journal article – Annual report year: 2013

Towards CMOS-compatible nanophotonics: Ultra-compact modulators using alternative plasmonic materials
Publication: Research › Ph.D. thesis – Annual report year: 2013

A new mechanism to design transparent electrodes: THz realizations
Publication: Research - peer-review › Article in proceedings – Annual report year: 2012

A new method for obtaining transparent electrodes
Publication: Research - peer-review › Journal article – Annual report year: 2012

Anisotropic anti-rod dimer metamaterial film for terahertz polarization manipulation
Publication: Research - peer-review › Article in proceedings – Annual report year: 2012

Bloch-mode analysis for effective parameters restoration
Publication: Research - peer-review › Conference abstract in proceedings – Annual report year: 2012
Bloch-mode analysis for retrieving effective parameters of metamaterials
Publication: Research - peer-review › Journal article – Annual report year: 2012

Capacity analysis for high-speed terahertz wireless communications
Publication: Research - peer-review › Article in proceedings – Annual report year: 2012

Compact dipole nanoantenna coupler to plasmonic slot waveguide.
Andryieuski, A., Malureanu, R., Biagi, G., Holmgaard, T. & Lavrinenko, A. 2012 In : Optics Letters. 37, 6, p. 1124-1126
Publication: Research - peer-review › Journal article – Annual report year: 2012

Coupled plasmon-exciton induced transparency and slow light in plexcitonic metamaterials
Publication: Research - peer-review › Journal article – Annual report year: 2012

Fabrication activity for nanophotonics
Publication: Research - peer-review › Paper – Annual report year: 2012

Fabrication and characterization of terahertz anisotropic anti-rod dimer planar metamaterials
Publication: Research - peer-review › Article in proceedings – Annual report year: 2012

Field approach in the transformation optics concept
Publication: Research - peer-review › Journal article – Annual report year: 2012

Finite-thickness metal-semiconductor-metal waveguide as plasmonic modulator
Publication: Research - peer-review › Article in proceedings – Annual report year: 2012

Graphene hyperlens for terahertz radiation
Publication: Research - peer-review › Article in proceedings – Annual report year: 2012

Graphene hyperlens for terahertz radiation
Publication: Research - peer-review › Conference abstract in proceedings – Annual report year: 2012

Graphene hyperlens for terahertz radiation
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Graphene hyperlens for terahertz radiation
Publication: Research - peer-review › Journal article – Annual report year: 2012

Graphene wire medium: Homogenization and application
Publication: Research - peer-review › Conference abstract in proceedings – Annual report year: 2012
Improving plasmonic waveguides coupling efficiency using nanoantennas
Publication: Research - peer-review › Article in proceedings – Annual report year: 2012

Infrared nanoantenna couplers for plasmonic slot waveguide
Andryieuski, A., Malureanu, R. & Lavrinenko, A. 2012
Publication: Research - peer-review › Paper – Annual report year: 2012

Light modulation abilities of nanostructures
Publication: Research - peer-review › Conference abstract in proceedings – Annual report year: 2012

Material-Independent and Size-Independent Tractor Beams for Dipole Objects
Publication: Research - peer-review › Journal article – Annual report year: 2012

Metamaterials modelling, fabrication and characterisation techniques
Publication: Research - peer-review › Paper – Annual report year: 2012

Metamaterials modelling, fabrication, and characterisation techniques
Publication: Research - peer-review › Conference article – Annual report year: 2013

Nanocouplers for Infrared and Visible Light
Publication: Research - peer-review › Journal article – Annual report year: 2012

Non-resonant terahertz field enhancement in periodically arranged nanoslits
Publication: Research - peer-review › Journal article – Annual report year: 2012

Optical characterisation of nanostructures using a discretised forward model
Publication: Research - peer-review › Conference abstract in proceedings – Annual report year: 2013

Optical waveguide mode control by nanoslit-enhanced terahertz field
Publication: Research - peer-review › Journal article – Annual report year: 2012

Passive THz metamaterials
Publication: Research - peer-review › Article in proceedings – Annual report year: 2012

Plasmonic modulator based on finite-thickness metal-semiconductor-metal waveguide with gain core
Publication: Research - peer-review › Paper – Annual report year: 2012
Plasmonic modulator based on gain-assisted metal-semiconductor-metal waveguide
Publication: Research - peer-review › Journal article – Annual report year: 2012

Plasmonic modulator optimized by patterning of active layer and tuning permittivity
Publication: Research - peer-review › Journal article – Annual report year: 2012

Plasmonic solutions for coupling and modulation
Publication: Research - peer-review › Paper – Annual report year: 2012

Reflectors and resonators for high-k bulk Bloch plasmonic waves in multilayer hyperbolic metamaterials
Publication: Research - peer-review › Article in proceedings – Annual report year: 2012

Subwavelength terahertz imaging with graphene hyperlens
Publication: Research - peer-review › Conference abstract in proceedings – Annual report year: 2012

Surface plasmon polariton modulator with optimized active layer
Publication: Research - peer-review › Conference article – Annual report year: 2012

Terahertz field enhancement to the MV/cm regime in a tapered parallel plate waveguide
Iwaszczuk, K., Andryieuski, A., Lavrinenko, A., Zhang, X-C. & Jepsen, P. U. 2012 In : Optics Express. 20, 8, p. 8344-8355
Publication: Research - peer-review › Journal article – Annual report year: 2012

THz and infrared metamaterial polarization converter with tunable ellipticity
Publication: Research - peer-review › Article in proceedings – Annual report year: 2012

Ultrabroadband terahertz spectroscopy of chalcogenide glasses
Publication: Research - peer-review › Journal article – Annual report year: 2012

Ultrabroadband THz spectroscopic investigation of As2S3
Publication: Research - peer-review › Article in proceedings – Annual report year: 2012

Bloch-mode analysis for retrieval of effective metamaterial parameters
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Publication: Research - peer-review › Poster – Annual report year: 2011

Comparative Study of FDTD-Adopted Numerical Algorithms for Kerr Nonlinearities
Publication: Research - peer-review › Journal article – Annual report year: 2011
Efficient and broadband nanoantenna coupler to plasmonic slot waveguide
Publication: Research - peer-review › Conference abstract for conference – Annual report year: 2011

Enhanced broadband optical transmission in metallized woodpiles
Publication: Research - peer-review › Journal article – Annual report year: 2010

Enhancement of light-matter interactions in photonic crystal structures with quantum dots
Publication: Research - peer-review › Article in proceedings – Annual report year: 2011

Fabrication and characterization of woodpile structures
Publication: Research - peer-review › Conference article – Annual report year: 2011

finite-Difference Frequency-Domain Method in Nanophotonics
Publication: Research › Ph.D. thesis – Annual report year: 2011

Impedance Conjugate Matching of Plasmonic Nanoantenna in Optical Nanocircuits
Publication: Research - peer-review › Article in proceedings – Annual report year: 2011

Increased electron photoemission from plasmonic nanoparticles and photoemission enhanced solar cells
Publication: Research - peer-review › Article in proceedings – Annual report year: 2011

Microscopic model of the THz field enhancement in a metal nanoslit
Publication: Research - peer-review › Journal article – Annual report year: 2011

Modelling of Nanophotonic Resonators with the Finite-Difference Frequency-Domain Method
Publication: Research - peer-review › Journal article – Annual report year: 2011

Modelling, fabrication and characterisation of THz fractal meta-materials
Publication: Research - peer-review › Conference abstract in proceedings – Annual report year: 2011

Negative Index Materials and Plasmonic Antennas Based Nanocouplers
Publication: Research › Ph.D. thesis – Annual report year: 2011

New Circular Fractal Sensors for Near-infrared Wavelengths
Publication: Research - peer-review › Conference abstract in proceedings – Annual report year: 2011
New fractal structures for frequencies close to the visible range
Publication: Research - peer-review › Article in proceedings – Annual report year: 2011

Non-invasive method of field imaging in parallel plate waveguides
Publication: Research - peer-review › Article in proceedings – Annual report year: 2011

Non-invasive terahertz field imaging inside parallel plate waveguides
Publication: Research - peer-review › Journal article – Annual report year: 2011

Observation of tunneling of slow and fast electromagnetic modes in coupled periodic waveguides
Ha, S., Sukhorukov, A. A., Lavrinenko, A., Shadrivov, I. V., Powell, D. A. & Kivshar, Y. S. 2011 In: Applied Physics Letters. 98, 6, p. 061909
Publication: Research - peer-review › Journal article – Annual report year: 2011

Paired modes of heterostructure cavities
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Plasmonic nanoantenna based coupler for telecom range
Publication: Research - peer-review › Article in proceedings – Annual report year: 2011

Review of the results of the COST MP0702 exercise on the sensitivity of metal-dielectric layered flat lens to fabrication inaccuracies
Publication: Research - peer-review › Article in proceedings – Annual report year: 2011

Surface Plasmon Polariton Modulator with Periodic Patterning of Indium Tin Oxide Layers
Publication: Research - peer-review › Conference article – Annual report year: 2011

Terahertz field imaging inside tapered parallel plate waveguides
Publication: Research - peer-review › Poster – Annual report year: 2011

Topology Optimization of Nanophotonic Devices
Publication: Research › Ph.D. thesis – Annual report year: 2011

Transmission and Reflection Spectroscopy of Terahertz Fractal Metamaterials
Malureanu, R., Cooke, D., Jepsen, P. U. & Lavrinenko, A. 2011
Publication: Research - peer-review › Poster – Annual report year: 2011
Two-Dimensional Fractal Metamaterials for Applications in THz
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Project

**Quantum Photonics in Nanostructured Media**
Ivinskaya, A., Lavrinenko, A., Lodahl, P., Mørk, J., Lægsgaard, J., Busch, K. & Søndergaard, T.
01/04/2006 → 24/08/2011
Project: PhD

01/01/2006 → 31/12/2008
Project

**Activities:**

**The International Workshop on Theoretical and computational Nanophotonics 3**
Lavrinenko, A. (Participant)
3 Nov 2010 → 5 Nov 2010
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

**4th International Congress on Advanced Electromagnetic Materials in Microwaves and Optics**
Lavrinenko, A. (Participant)
13 Sep 2010 → 16 Sep 2010
Activity: Attending an event › Participating in or organising a conference

**International Congress on Advanced electromagnetic Magterials in Microwaves and Optics**
Lavrinenko, A. (Participant)
13 Sep 2010
Activity: Attending an event › Participating in or organising a conference

**Advanced Topics in Optoelectronics, Microelectronics and Nanotechnologies**
Lavrinenko, A. (Participant)
26 Aug 2010 → 29 Aug 2010
Activity: Attending an event › Participating in or organising a conference

**Photonics Europe**
Lavrinenko, A. (Speaker)
12 Apr 2010 → 16 Apr 2010
Activity: Talks and presentations › Conference presentations

**Photonics Europe: Coupling of cavities - the way to impose control over their modes**
Lavrinenko, A. (Speaker)
12 Apr 2010 → 16 Apr 2010
Activity: Talks and presentations › Conference presentations

**International Workshop on Optical Waveguide Theory and Numerical Modelling (OWTNM); 19**
Lavrinenko, A. (Speaker)
9 Apr 2010 → 10 Apr 2010
Activity: Talks and presentations › Conference presentations

**International Workshop on Photonic Nanomaterials (PhoNa-2010); 6** (Event)
Lavrinenko, A. (Reviewer)
24 Mar 2010 → 25 Mar 2010
Activity: Research › Peer review of manuscripts
Dansk Fysisk Selskab Årsmøde 2009
Lavrinenko, A. (Participant)
16 Jun 2009 → 18 Jun 2009
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

3D isotropic double negative material design for infrared
Lavrinenko, A. (Speaker)
3 Dec 2008 → 5 Dec 2008
Activity: Talks and presentations › Conference presentations

The First International Workshop on Theoretical and Computational nano-photonics TaCoNa-Photonics
Lavrinenko, A. (Participant)
3 Dec 2008 → 5 Dec 2008
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

Progress in photonic metamaterials based on artificial opals; I10/I-1: ICONO/LAT 2007
Lavrinenko, A. (Speaker)
28 May 2007 → 1 Jun 2007
Activity: Talks and presentations › Conference presentations