

Viktoriia Babicheva

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Education

- 2013 DTU Fotonik, Technical University of Denmark, Denmark
 Ph.D., Photonics Engineering
 Thesis: “Ultra-Compact Plasmonic Waveguide Modulators”
- 2009 Department of General and Applied Physics, Moscow Institute of Physics and Technology
 Problems of Physics and Astrophysics Division in Lebedev Physical Institute headed by V.L. Ginzburg
M.S. cum laude, GPA 4.92 out of 5.00, Applied Mathematics and Physics
 Thesis: “Nanophotonics and Nanoplasmonics in Metal Structures”
- 2007 Department of General and Applied Physics, Moscow Institute of Physics and Technology
 Problems of Physics and Astrophysics Division in Lebedev Physical Institute headed by V.L. Ginzburg
B.S. cum laude, GPA 4.91 out of 5.00, Applied Mathematics and Physics
 Thesis: “FDTD Method for the Near Field Microscopy”

Research Experience

- June 2019 – present Assistant Professor
 Department of Electrical and Computer Engineering
 secondary appointment: Department of Physics and Astronomy
 University of New Mexico, NM
- Nov 2017 – July 2019 Postdoctoral Researcher, College of Optical Sciences, University of Arizona, AZ
 Project: “Ultrafast extreme nonlinear optics & light-matter coupling on nanoscales”
 Team of Prof. Jerry Moloney
- Feb 2015 – June 2017 Postdoctoral Researcher, Center for Nano-Optics, Georgia State University, GA
 Project: “Optical processes in active, random, and nanostructured systems”
 Team of Profs. Mark Stockman and Yohannes Abate
- June 2014 – Dec 2014 Visiting Scientist at Birck Nanotechnology Center, Purdue University, IN
 Project “Plasmonic waveguides clad by hyperbolic metamaterials”
 Team of Prof. Vladimir Shalaev
- Nov 2013 – May 2014 Visiting Researcher at DTU Fotonik, Technical University of Denmark
 Project: “Photoconductive metamaterials for photodetectors and solar cells”
 Group of Prof. Andrei Lavrinenko
- Feb 2013 – Aug 2013 Visiting Scientist at Birck Nanotechnology Center, Purdue University, IN
 Project “Plasmonic waveguides and modulators based on titanium nitrides”
 Team of Prof. Vladimir Shalaev
- Oct 2010 – Oct 2013 Ph.D. student at DTU Fotonik, Technical University of Denmark, Denmark
 Project: “Ultra-compact plasmonic waveguide modulators”
 Advisors: Prof. Andrei Lavrinenko and Prof. Alexandra Boltasseva
 Committee: Profs. Anatoly Zayats, Sergey Bozhevolnyi, Morten Willatzen

- July 2010 – Sept 2010 Visiting Scientist at Zuse Institute Berlin, Berlin, Germany
Project “Plasmonic resonance in composite materials,” Advisor: Dr. Sven Burger
- July 2009 – June 2010 Research Assistant at Moscow Institute of Physics and Technology, Russia
Project “Surface plasmon polaritons in periodic and multilayer nanostructures”
Advisor: Prof. Yury Lozovik

Grants, Awards, and Scholarships

- 2019 U.S. Department of Energy (DOE), BES Materials Sciences and Engineering Division (ID: DE-SC0019753): support for MRS Symposium EP12, Emerging Materials for Plasmonics, Metamaterials and Metasurfaces (\$5,000)
- 2016 Postdoctoral Fellow Travel Award from AVS Electronic Materials & Photonics Division (EMPD) for participation in the 2016 AVS 63rd International Symposium, Nashville, TN (\$500)
- 2014 Research travel grant, Kaj og Hermilla Ostenfeld’s Found (~ \$6,000)
- 2013 Research travel grant, Otto Mønsted’s Found (~ \$3,000)
- 2013 Research travel grant, Thomas B. Thrige’s Found (~ \$1,800)
- 2012 SPIE Scholarship in Optics and Photonics: for potential long-range contributions to optical science and engineering (\$3,000)
- 2012 Conference travel grant, Otto Mønsted’s Found (~ \$800)
- 2012, 2013 Conference travel grants, Oticon Found (~ \$650 and \$800)
- 2010 DTU Fotonik Scholarship for individual Ph.D. project (3-year funding)
- 2010 Research grant for doctoral candidates and young academics and scientist, German Academic Exchange Service (DAAD), 3 months at Zuse Institute Berlin (~ \$4,500)
- 2009 Best Student Scientific Work (the highest award), National Contest of Student Scientific Works on Nanotechnology and Metamaterials, Ministry of Education and Science of the Russian Federation
- 2009 Research grant (individual), NK-346P-09, Ministry of Education and Science of the Russian Federation, Moscow State Institute of Radiotechnics, Electronics, and Automatics – Technical University (~ \$2,000)
- 2008 – 2009 Scholarship, Educational and Scientific Center of Lebedev Physical Institute of RAS
- 2005 – 2009 Scholarship, Academic Committee of Moscow Institute of Physics and Technology

Teaching

- Fall 2019 Asst. Prof., ECE 564 Guided Wave Optics, University of New Mexico
- Fall 2014 Tutorial on CST Microwave Studio (15-20 participants), Purdue University
- Fall 2012, Fall 2011 Teaching Assistant, DTU course #33321 Nano-2: Nanosystems Engineering
- Fall 2007 – Spring 2009 Instructor, General Physics Division, MIPT, labs of eight-student groups
- Fall 2008, 2007 Mechanics
- Spring 2009, 2008 Thermodynamics and Molecular Physics
- 2006 – 2008 Private tutor in Physics, Mathematics, and Informatics for high-school and undergraduate students

Reviewing Grants for Agencies

Croatian Science Foundation (Scientific area: Natural Sciences, Scientific field: Physics)

Editorial Service

MRS Advances, **Principal Editor**, 2015 - present

JOSA B (OSA, IF: 2.048), **Guest Editor**, 12/2018 - 08/2019

Feature Issue "Collective Effects and Coupling Phenomena in Resonant Optical Metasurfaces" ([weblink](#))

Symmetry (MDPI, IF: 1.256), **Guest Editor** (invited), 09/2018 - 12/2019

Special Issue "Symmetry in Nano-optics and Nanophotonics" ([weblink](#))

Symposium Organizer: Materials Research Society (MRS) Meetings

2020 MRS Spring Meeting, Phoenix, AZ

Symposium EL03 "Novel Approaches and Material Platforms for Enhanced Light–Matter Interaction, Plasmonics and Metasurfaces," ([weblink](#))

Organizers: S. Neretina, **V. Babicheva**, H. Lee, C. Ricci

2019 MRS Spring Meeting, Phoenix, AZ

Symposium EP12 "Emerging Materials for Plasmonics, Metamaterials, and Metasurfaces," ([weblink](#))

Organizers: **V. Babicheva** (*Lead organizer*), M. Leite, P.J. Schuck, K.-P. Chen

2018 MRS Fall Meeting, Boston, MA

Symposium EP04 "Novel Photonic and Plasmonic Materials Enabling New Functionalities," ([weblink](#))

Organizers: J. Munday, A. Alu, **V. Babicheva**, K.-P. Chen

2018 MRS Spring Meeting, Phoenix, AZ

Symposium NM09 "Novel Approaches and Material Platforms for Plasmonics and Metamaterials," ([weblink](#))

Organizers: **V. Babicheva** (*Lead organizer*), A. Boltasseva, I. Staude, J. Caldwell

2017 MRS Fall Meeting, Boston, MA

Symposium EM3 "Novel Materials and Architectures for Plasmonics: From the Ultraviolet to the Terahertz," ([weblink](#))

Organizers: S. Law, **V. Babicheva**, S. Boriskina, F. Neubrech

2017 MRS Spring Meeting, Phoenix, AZ

Symposium ED10 "Materials for Plasmonics and Metamaterials: Novel Approaches & Practical Applications," ([weblink](#))

Organizers: **V. Babicheva** (*Lead organizer*), A. Boltasseva, P. Ginzburg, H. Giessen

2015 MRS Fall Meeting, Boston, MA

Symposium GG "Emerging Materials and Platforms for Optoelectronics,"

Organizers: V. Sorger, **V. Babicheva**, S. Fathpour, J. Hu

Committee Member

2020 Program committee member on CLEO Pacific Rim (Conference on Lasers and Electro-Optics)

Symposium S2: Frontiers of Theoretical Optics and Photonics ([weblink](#))

2018, 2017 Program committee member on CLEO (Conference on Lasers and Electro-Optics)

Subcommittee FS3: Metamaterials and Complex Media ([weblink](#))

Judge for Poster Session at the Scientific Computing Day, Georgia State University, Fall 2016

Judge at the annual GPSC Student Showcase (GPSC - Graduate and Professional Student Council), University of Arizona, February 13, 2019

Membership in Professional Societies

Materials Research Society (MRS), since 2016
Applied Computational Electromagnetics Society (ACES), 2019
American Vacuum Society (AVS), Early Career Member, 2016 – 2017
Optical Society of America (OSA): Recent Graduate Member, 2014 – 2017;
Student Chapter Member, 2012 – 2014
European Physical Society, Student Member, 2012
Moscow Physical Society, 2010 – 2011
SPIE, Student Member and Women in Optics technical group member, 2009 – 2014

Membership in Organizations

Women in Optics, University of Arizona
Women in Physics (Vice President 2016-2017), Georgia State University
Inclusive STEM, Georgia State University

Skills

Software

- Finite Difference Time Domain Method (Sim3D_Max, MEEP, Lumerical)
- Finite Element Method (CST Microwave Studio, JCMwave, COMSOL)
- Rigorous Coupled-Wave Analysis (PhotonicsSHA-2D)
- Matlab, Maple, Mathematica, Mathcad; OlimpIOs

Cluster Machine Experience

- ASMC cluster machines at College of Optical Sciences, University of Arizona, AZ
- Cluster of Center for Nano-Optics, Georgia State University, GA
- Joint Supercomputer Center JSCC of Russian Academy of Sciences, Russia
- Supercomputer MIPT-60 of Moscow Institute of Physics and Technology, Russia
- Parma Computing System of Landau Institute for Theoretical Physics, Russia

Cleanroom Nanofabrication and Characterization

- Optical lithography, metal deposition, plasma-enhanced chemical vapor deposition, spin coating
Scanning electron microscope (SEM), atomic force microscope (AFM), ellipsometry

Projects at User Facilities (Collaborative Research)

“Room temperature infrared spaser (nanolaser),”
Oak Ridge National Lab, Center for Nanophase Materials Sciences, 2016-2017.

“Low-threshold plasmonic nanolaser,”
Brookhaven National Laboratory, Center for Functional Nanomaterials, 2016-2017.

“Huygens' metasurfaces with directional scattering and lattice resonances,”
Oak Ridge National Lab, Center for Nanophase Materials Sciences, 2016.

Reviewer Activity (48 Journals and one book, [Publons profile link](#) with review summary)

OSA: Optica, Optics Express, Optics Lett., JOSA B, Chinese Optics Lett., Optical Materials Express, Applied Optics;

ACS: Nano Letters, ACS Photonics, Journal of Physical Chemistry C;

NPG: Nature Communications, Scientific Reports, npj 2D Materials and Applications;

IEEE: Photonics Technology Letters, Photonics Journal, J. Quantum Electronics, J. Lightwave Technology;

Other: Laser and Photonics Reviews, Nanophotonics, Solid State Communications, MRS Advances, J. Optics, Optics Communications, Materials Today Energy, Solar Energy, Materials, Applied Science, Symmetry, Nanotechnology, Optical and Quantum Electronics, Photonics Lett. of Poland, Solid-State Electronics, IET Optoelectronics, IET Microwaves, Antennas, and Propagation, Computer Methods in Applied Mechanics and Engineering, J. Applied Physics, Superlattices and Microstructures, J. Electronic Materials, Optical Materials, and others

Pre-publication peer review of one book (11 chapters) for Bentham Science Publishers

Student Service

2012	Secretary of SPIE Student Chapter, Technical University of Denmark
2007 – 2009	Judge for Physicists Tournament, Moscow Institute of Physics and Technology
2006 – 2009	Secretary of the admissions committee, Moscow Institute of Physics and Technology
2005 – 2009	Member of organizing committee and judge of National School Olympiads of the Russian Federation

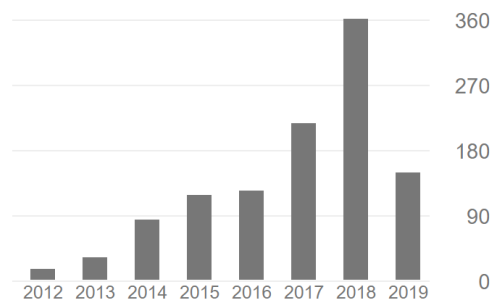
Links and Profiles

Website	https://nanometa.unm.edu/
Google Scholar	http://goo.gl/Pxtnyv
ORCID ID	http://orcid.org/0000-0002-0789-5738
ResearcherID	http://www.researcherid.com/rid/C-7234-2013
Publons	https://publons.com/a/490385/
Ph.D. thesis	http://goo.gl/yff0Wh
Linkedin	http://www.linkedin.com/pub/viktoriia-babicheva/24/a17/161
Loop	http://loop.frontiersin.org/people/318963/overview

Publication List



	All	Since 2014
Citations	1114	1052
h-index	20	20
i10-index	31	30



[Google Scholar profile link](#)

Book Chapters

Y. Abate, **V.E. Babicheva**, V.S. Yakovlev, and N. Dietz, "Towards Understanding and Control of Nanoscale Phase Segregation in Indium-Gallium-Nitride Alloys," pp. 183-207, Chapter 6 in "III-Nitride Materials, Devices, and Nano-Structures," 424 p., Ed: Zhe Chuan Feng, World Scientific Publishing, 2017.

Peer-Reviewed Journal Articles

2019

50. **V.E. Babicheva** and J.V. Moloney, "Lattice Zenneck modes on subwavelength antennas," *Laser & Photonics Reviews* 13, 1800267 (2019). [IF: 8.529]

49. **V.E. Babicheva** and J.V. Moloney, "Lattice resonances in transdimensional WS_2 nanoantenna arrays," *Appl. Sci.* 9, 2005 (2019). [*invited paper*; IF: 1.689]

48. **V.E. Babicheva** and A.B. Evlyukhin, "Analytical model of resonant electromagnetic dipole-quadrupole coupling in nanoparticle arrays," *Phys. Rev. B* 99, 195444 (2019). [IF: 3.813]

47. **V.E. Babicheva**, "Multipole Resonances in Transdimensional Lattices of Plasmonic and Silicon Nanoparticles," *MRS Advances* 4, 713-722 (2019). [IF: N/A]

46. P.D. Terekhov, **V.E. Babicheva**, K. Baryshnikova, A. Shalin, A. Karabchevsky, A. B. Evlyukhin, "Multipole analysis of dielectric metasurfaces composed of nonspherical nanoparticles and lattice invisibility effect," *Phys. Rev. B* 99, 045424 (2019). [IF: 3.813]

2018

45. **V. E. Babicheva** and J. V. Moloney, "Lattice effect influence on the electric and magnetic dipole resonance overlap in a disk array," *Nanophotonics* 7(10), 1663-1668 (2018). [*invited paper*; IF: 6.014]

44. **V.E. Babicheva**, "Lattice effect in Mie-resonant dielectric nanoparticle array under the oblique light incidence," *MRS Communications* 8, 1455-1462 (2018). [*invited paper*; IF: 3.010]

43. **V.E. Babicheva**, A.B. Evlyukhin, "Resonant suppression of light transmission in high-refractive-index nanoparticle metasurfaces," *Optics Letters* 43, 5186-5189 (2018). [IF: 3.589]

42. **V.E. Babicheva**, A.B. Evlyukhin, "Interplay and coupling of electric and magnetic multipole resonances in plasmonic nanoparticle lattices," *MRS Communications* 8, 712-717 (2018). [*invited Prospective*; IF: 3.010]
Highlighted in *Materials360 Newsletters* 18(13), 2018.

41. **V.E. Babicheva**, "Lattice Kerker effect in the array of hexagonal boron nitride antennas," *MRS Advances* 3, 2783-2788 (2018). [IF: N/A]

40. **V.E. Babicheva**, S. Gamage, L. Zhen, S.B. Cronin, V.S. Yakovlev, Y. Abate, "Near-field Surface Waves in Few-Layer MoS_2 ," *ACS Photonics* 5, 2106 (2018). [IF: 6.756]

39. **V.E. Babicheva** and A.B. Evlyukhin, "Metasurfaces with electric quadrupole and magnetic dipole resonant coupling," ACS Photonics 5, 2022 (2018). [IF: 6.756]
38. C.Y. Yang, J.H. Yang, Z.Y. Yang, Z.X. Zhou, M.G. Sun, **V.E. Babicheva**, K.P. Chen, "Nonradiating Silicon Nanoantenna Metasurfaces as Narrow-band Absorbers," ACS Photonics 5, 2596 (2018). [IF: 6.756]
37. **V.E. Babicheva**, "Directional scattering by the hyperbolic-medium antennas and silicon particles," MRS Advances 3, 1913 (2018). [IF: N/A]

2017

36. **V.E. Babicheva** and A.B. Evlyukhin, "Resonant Lattice Kerker Effect in Metasurfaces with Electric and Magnetic Optical Responses," Laser & Photonics Reviews 11, 1700132 (2017). [IF: 8.434]
35. **V.E. Babicheva**, "Long-range propagation of plasmon and phonon polaritons in hyperbolic-metamaterial waveguides," Journal of Optics 19, 124013 (2017). [*invited paper* in SI Emerging Leaders; IF: 1.741]
34. **V.E. Babicheva**, S. Gamage, M.I. Stockman, and Y. Abate, "Near-field edge fringes at sharp material boundaries," Optics Express 25, 23935-23944 (2017). [IF: 3.307]
33. **V.E. Babicheva**, M.I. Petrov, K. Baryshnikova, P.A. Belov, "Reflection compensation mediated by electric and magnetic resonances of all-dielectric metasurfaces [Invited]," Journal of the Optical Society of America B (JOSA B) 34, D18-D28 (2017). [*invited paper* in SI Photonic Metadevices; IF: 1.731]

2016

32. A. Boulesbaa, **V.E. Babicheva**, K. Wang, I.I. Kravchenko, M.-W. Lin, M. Mahjouri-Samani, C. Jacob, A.A. Purezky, K. Xiao, I. Ivanov, C.M. Rouleau, D.B. Geohegan, "Ultrafast Dynamics of Metal Plasmons Induced by 2D Semiconductor Excitons in Hybrid Nanostructure Arrays," ACS Photonics 3, 2389 (2016). [IF: 5.404]
31. Y. Abate, D. Seidlitz, A. Fali, S. Gamage, **V. Babicheva**, V. Yakovlev, M. Stockman, R. Collazo, D. Alden, N. Dietz, "Nanoscopy of Phase Separation in InxGa1-xN Alloys," ACS Applied Materials & Interfaces 8, 23160-23166 (2016). [IF: 7.145]
30. Y. Abate, S. Gamage, L. Zhen, S.B. Cronin, H. Wang, **V. Babicheva**, M.H. Javani, M.I. Stockman, "Nanoscopy reveals metallic black phosphorus," Light: Science & Applications 5, e16162 (2016). [IF: 14.603]
29. K.V. Baryshnikova, M.I. Petrov, **V.E. Babicheva**, P.A. Belov, "Plasmonic and silicon spherical nanoparticle antireflective coatings," Scientific Reports 6, 22136 (2016). [IF: 5.078]
28. A.V. Chebykin, **V.E. Babicheva**, I.V. Iorsh, A.A. Orlov, P.A. Belov, and S.V. Zhukovsky, "Enhancement of the Purcell factor in multiperiodic hyperboliclike metamaterials," Phys. Rev. A 93, 033855 (2016). [IF: 2.991]

2015

27. S.V. Zhukovsky, I.E. Protsenko, R. Sh. Ikhsanov, I.V. Smetanin, **V.E. Babicheva**, A.V. Uskov, "Transition absorption as a mechanism of surface photoelectron emission from metals," Physica Status Solidi (RRL)-Rapid Research Letters 9, 570-574 (2015). [IF: 2.343]
26. **V.E. Babicheva**, M.Y. Shalaginov, S. Ishii, A. Boltasseva, and A.V. Kildishev, "Long-range plasmonic waveguides with hyperbolic cladding," Optics Express 23, 31109-31119 (2015). [IF: 3.525]

25. **V.E. Babicheva**, A. Boltasseva, A.V. Lavrinenko, "[Transparent conducting oxides for electro-optical plasmonic modulators](#)," *Nanophotonics* 4, 165-185 (2015). [*invited Review* in SI Emerging Materials for Nanophotonics; top 10 most downloaded papers of 2015; IF: 5.689]
24. **V.E. Babicheva**, M.Y. Shalaginov, S. Ishii, A. Boltasseva, and A.V. Kildishev, "[Finite-width plasmonic waveguides with hyperbolic multilayer cladding](#)," *Opt. Express* 23, 9681-9689 (2015). [IF: 3.525]
23. **V.E. Babicheva**, R.Sh. Ikhsanov, S.V. Zhukovsky, I.E. Protsenko, I.V. Smetanin, and A.V. Uskov, "[Hot electron photoemission from plasmonic nanostructures: Role of surface photoelectric effect and transition absorption](#)," *ACS Photonics* 2, 1039-1048 (2015). [IF: 5.404]
22. R.Sh. Ikhsanov, **V.E. Babicheva**, I.E. Protsenko, A.V. Uskov, M.E. Guzhva, "[Bulk photoemission from metal films and nanoparticles](#)," *Quantum Electronics* 45, 50-58 (2015). [IF: 0.886]

2014

21. **V.E. Babicheva**, S.V. Zhukovsky, A.V. Lavrinenko, "[Bismuth ferrite as low-loss switchable material for plasmonic waveguide modulator](#)," *Optics Express* 22, 28890-28897 (2014). [IF: 3.525]
20. S.V. Zhukovsky, **V.E. Babicheva**, A.B. Evlyukhin, I.E. Protsenko, A.V. Lavrinenko, A.V. Uskov, "[Giant photogalvanic effect in noncentrosymmetric plasmonic nanoparticles](#)," *Phys. Rev. X* 4, 031038 (2014). [IF: 9.043]
19. S.V. Zhukovsky, A. Orlov, **V.E. Babicheva**, A.V. Lavrinenko, J. E. Sipe, "[Photonic-band-gap engineering for volume plasmon polaritons in multiscale multilayer hyperbolic metamaterials](#)," *Phys. Rev. A* 90, 013801 (2014). [IF: 2.991]
- Highlighted in [SPIE Newsroom, Nanotechnology, October 2014, doi: 10.1117/2.1201410.005626](#)
18. A.A. Orlov, A.K. Krylova, S.V. Zhukovsky, **V.E. Babicheva**, P.A. Belov, "[Multi-periodicity in plasmonic multilayers: general description and diversity of topologies](#)," *Phys. Rev. A* 90, 013812 (2014). [IF: 2.991]
17. A.A. Orlov, E.A. Yankovskaya, S.V. Zhukovsky, **V.E. Babicheva**, I.V. Iorsh, and P.A. Belov, "[Retrieval of Effective Parameters of Subwavelength Periodic Photonic Structures](#)," *Crystals* 4, 417-426 (2014). [IF: 2.075]
16. S. Ishii, M. Y. Shalaginov, **V.E. Babicheva**, A. Boltasseva, and A.V. Kildishev, "[Plasmonic waveguides clad by hyperbolic metamaterials](#)," *Optics Letters* 39, 4663-4666 (2014). [IF: 3.179]
15. N. Kinsey, M. Ferrera, G.V. Naik, **V.E. Babicheva**, V.M. Shalaev, A. Boltasseva, "[Experimental demonstration of titanium nitride plasmonic interconnects](#)," *Optics Express* 22, 12238-12247 (2014). [IF: 3.525]
14. S.V. Zhukovsky, **V.E. Babicheva**, A.V. Uskov, I.E. Protsenko, A.V. Lavrinenko, "[Electron photoemission in plasmonic nanoparticle arrays: analysis of collective resonances and embedding effects](#)," *Applied Physics A* 116, 929-940 (2014). [IF: 1.694]
13. A.V. Uskov, I.E. Protsenko, R.Sh. Ikhsanov, **V.E. Babicheva**, S.V. Zhukovsky, A.V. Lavrinenko, E.P. O'Reilly, H. Xu, "[Internal photoemission from plasmonic nanoparticles: Comparison between surface and volume photoelectric effects](#)," *Nanoscale* 6, 4716-4727 (2014). [IF: 7.394]
12. S.V. Zhukovsky, **V.E. Babicheva**, A.V. Uskov, I.E. Protsenko, A.V. Lavrinenko, "[Enhanced electron photoemission by collective lattice resonances in plasmonic nanoparticle-array photodetectors and solar cells](#)," *Plasmonics* 9, 283-289 (2014). [IF: 2.738]

2013 - 2009

11. **V.E. Babicheva**, N. Kinsey, G.V. Naik, M. Ferrera, A.V. Lavrinenko, V.M. Shalaev, A. Boltasseva, “Towards CMOS-compatible nanophotonics: Ultra-compact modulators using alternative plasmonic materials,” *Optics Express* 21, 27326-27337 (2013). [IF: 3.525]

Highlighted in *SPIE Newsroom, Optoelectronics & Communications*, May 2014, doi: 10.1117/2.1201404.005462
10. **V.E. Babicheva**, R. Malureanu, A.V. Lavrinenko, “Plasmonic finite-thickness metal-semiconductor-metal waveguide as ultra-compact modulator,” *Photonics and Nanostructures - Fundamentals and Applications* 11, 323–334 (2013). [#22 in the most cited PNFA articles published since 2012 as of 02/11/2017, IF: 1.350]
9. **V.E. Babicheva**, A.V. Lavrinenko, “Plasmonic modulator based on metal-insulator-metal waveguide with barium titanate core,” *Photonics Letters of Poland* 5, 57-59 (2013). [IF: N/A]
8. **V.E. Babicheva**, I.V. Kulkova, R. Malureanu, K. Yvind, A.V. Lavrinenko, “Plasmonic modulator based on gain-assisted metal-semiconductor-metal waveguide,” *Photonics and Nanostructures - Fundamentals and Applications* 10, 389-399 (2012). [#4 in the most cited PNFA articles published since 2012 as of 02/11/2017, IF: 1.350]
7. **V.E. Babicheva**, A.V. Lavrinenko, “Plasmonic modulator optimized by patterning of active layer and tuning permittivity,” *Optics Communications* 285, 5500–5507 (2012). [IF: 1.542]
6. **V.E. Babicheva**, S.S. Vergeles, P.E. Vorobev, S. Burger, “Localized surface plasmon modes in a system of two interacting metallic cylinders,” *JOSA B* 29, 1263-1269 (2012). [IF: 2.210]
5. **V.E. Babicheva**, Y.E. Lozovik, “Anomalous transmission of electromagnetic wave through periodic arrays of subwavelength slits arranged on thin metal films,” *Optics and Spectroscopy* 110, 119-123 (2011). [IF: 0.673]
4. **V.E. Babicheva**, Y.E. Lozovik, “Role of surface plasmon polaritons in anomalous transmission of an electromagnetic wave through two arrays with subwavelength slits,” *Physics of the Solid State* 53, 804-809 (2011). [IF: 0.782]
3. **V.E. Babicheva**, Y.E. Lozovik, “Light passage through a film with subwavelength slits,” *Bulletin of the Lebedev Physics Institute* 37, 309-310 (2010). [IF: 0.149]
2. **V.E. Babicheva**, Y.E. Lozovik, “Extraordinary transmission of electromagnetic waves in photonic nanostructures,” *Nanomaterials and Nanostructures* 1, 11-18 (2010). [IF: N/A]
1. **V.E. Babicheva**, Y.E. Lozovik, “Role of propagating slit mode in enhanced transmission through slit arrays in metallic films,” *Optical and Quantum Electronics* 41, 299-313 (2009). [IF: 0.657]

Invited Talks, Seminars, and Conferences

Invited Talks and Seminars

39. (confirmed) "Multipole resonances in transdimensional van der Waals antenna lattices" invited talk at MRS Fall Meeting, Emerging Material Platforms and Approaches for Plasmonics, Metamaterials and Metasurfaces, Boston, MA, December 2019
38. (confirmed) "van der Waals metasurfaces based on hyperbolic-medium antennas" invited talk at SPIE Optics + Photonics, Nanoscience + Engineering, Active Photonic Platforms XI, San Diego, CA, August 2019
37. (confirmed) Donostia International Physics Center, Spain (July 2019) " Dr. A. Nikitin "van der Waals Transdimensional Lattices for Nanophotonic Devices"
36. (confirmed) "van der Waals Metasurfaces and Transdimensional Photonic Lattices" invited talk at 10th International Conference on Metamaterials, Photonic Crystals and Plasmonics (META 2019), Advanced Passive and Active Metasurfaces, Lisbon, Portugal, July 2019
35. University of Miami (April 2019) " Prof. Sung Kim "Multipole Resonances in Transdimensional hBN Arrays"
34. "Plasmonic Resonances and Light Generation in Nanoparticle Dimers" invited talk at International Applied Computational Electromagnetics Society (ACES) Symposium, Advanced Time Domain Solvers for Multiphysics Modeling in Photonics, Miami, FL, April 2019
33. University of Nevada Las Vegas (March 2019) " Prof. D. Shelton "Transition Metal Dichalcogenide Nanoparticle Lattices with Mie Resonances"
32. University of Michigan - Dearborn (March 2019) " Prof. Ya Sha Yi "Novel Material Platforms and Transdimensional Lattices for Metaphotonic Devices"
31. Wichita State University (February 2019) " Prof. H. Hamdeh "Transdimensional Photonic Lattice and van der Waals Meta-Optics"
30. Oklahoma State University (February 2019) " Prof. A. Rosenberger "van der Waals Meta-Optics"
29. Wake Forest University (February 2019) " Prof. D. Kim-Shapiro "Transdimensional Lattices for Metaphotonic Devices"
28. University of New Mexico (January 2019) " Prof. Payman Zarkesh-Ha "Novel Material Platforms for Metaphotonic Lattices and Devices"
27. Tulane University (January 2019) " Prof. D. Talbayev "Towards Metaphotonic Devices: Novel Material Platforms for Metasurfaces"
26. Stanford University (May 2018) " Prof. J. Dionne "Emerging Material Platforms and Approaches for Metamaterials and Metasurfaces"
25. Queens College, CUNY (April 2018) " Prof. A. Lisyansky "All-Dielectric Nanostructures, Metamaterials, and Metasurfaces"
24. University of California at Riverside (March 2018) " Prof. A. Balandin "Lattice-Induced Kerker Effect in All-Dielectric Nanoparticle Arrays"
23. University of California at Davis (February 2018) " Prof. S. J. B. Yoo "Nanoscopy of Layered Materials, Metasurfaces, and Metaphotonic Devices"
22. University of Nebraska - Lincoln (February 2018) " Prof. F. Choobineh

- “Metasurfaces and Metaphotonic Devices with All-Dielectric Nanostructures”
21. University of Arizona (January 2018) " Prof. J. Moloney
“All-Dielectric Nanostructures for Directional Scattering and Enhanced Absorption”
 20. University of Delaware (January 2018) " Prof. M. Doty
“Novel Material Platforms for Metasurfaces and Metaphotonic Devices”
 19. MIT (November 2017) " Prof. J. Hu
“Kerker Effect with Collective Multipole Resonances in Nanoparticle Lattices”
 18. Texas A&M University (April 2017) " Prof. R. Harris
“Metasurfaces and Metaphotonic Devices with Novel Material Platforms”
 17. University of Colorado - Boulder (March 2017) " Prof. W. Park
“Nanoscopy of Metasurfaces and Metaphotonic Devices”
 16. Hofstra University (March 2017) " Prof. G. Levine
“Near-Field Characterization of Metasurfaces”
 15. Alabama A&M University (March 2017) " Prof. A. Sharma
“Near-Field Techniques and Material Platforms for Metasurfaces”
 14. University of Arkansas (February 2017) " Prof. H. Churchill
“Towards Metaphotonic Devices: Near-Field Nanoscopy and Novel Material Platforms for Metasurfaces”
 13. University of Rochester (January 2017) " Prof. N. Vamivakas
“Novel Material Platforms for Metasurfaces and Metaphotonic Devices”
 12. University of Texas at San Antonio (January 2017) " Prof. A. Ayon
“Unconventional Materials for Metamaterials and Metasurfaces”
 11. University of Notre Dame (December 2016) " Prof. J. Furdyna
“Novel Approaches and Material Platforms for Metamaterials and Metasurfaces”
 10. Jackson State University (November 2016) " Prof. T. Shahbazyan
“All-Dielectric Metamaterials and Metasurfaces”
 9. St. John’s University (November 2016) " Prof. M. Sadoqi
"Novel Approaches and Material Platforms for Metamaterials and Metasurfaces"
 8. Vanderbilt University (November 2016) " Prof. J. Valentine
"Directional scattering in all-Dielectric metasurfaces"
 7. National Institute for Materials Science (NIMS), Tsukuba, Japan (September 2016) " Dr. Satoshi Ishii
"Huygens’ metasurfaces: Substrate-mediated directional scattering and lattice resonances"
 6. Technion-Israel Institute of Technology, Haifa, Israel (June 2015) " Prof. M. Orenstein
"Ultra-compact plasmonic waveguide modulators"
 5. University of Utah (September 2014) " Prof. B. Sensale-Rodriguez
"Plasmonics for ultra-compact waveguide modulators and enhanced hot-electron photoemission"
 4. ["Photoemission of Hot Electrons from Plasmonic Nanoantennas," invited talk at the Days on Diffraction–2014, St. Petersburg, Russia, May 2014.](#)
 3. Aalto University, Finland (February 2014) " Prof. C. Simovskii
"Nanophotonic interconnects and plasmonic solutions for photonic waveguide modulators"
 2. ITMO University, St. Petersburg, Russia (December 2013) " Prof. P. Belov
"Plasmonic enhancement of photoelectron emission"

1. University of Illinois Urbana-Champaign (August 2013) " Prof. D. Wasserman
"Plasmonic solutions for nanophotonic interconnects and enhancement of photoelectron emission"

Panel Discussions

"Seven Keys to Finding and Obtaining the Right Postdoc," Graduate College, University of Arizona, Tucson, AZ, August 2018. [Link to video](#)

"Reducing Time to Doctoral Degree," Graduate College Seminar Series, University of Arizona, Tucson, AZ, April 2018.

"Supporting women in STEM across all career stages," 2018 Launching Your Career Symposium, University of Arizona, Tucson, AZ, March 2018.

"Career path, the challenges that have been faced on a way, and related success stories," STEM Conference at Georgia State University, Atlanta, GA, November 2016.

Career Highlights

Dr. Viktoriia Babicheva - Optical Sciences, University of Arizona Postdoctoral Association - Spotlight, June 2018, <http://uapostdocs.weebly.com/spotlight/archives/06-2018>

Viktoriia Babicheva "Challenging academic career: knowledge, initiative, mobility, and flexibility" in "Women in Photonics - Solving Societal Problem" DTU Fotonik, Department of Photonics Engineering, Technical University of Denmark, 2014.

Conference Presentations [presenting author is underlined]

2019

94. (confirmed) V.E. Babicheva, "van der Waals metasurfaces based on hyperbolic-medium antennas," **SPIE Optics + Photonics**, Nanoscience + Engineering, Active Photonic Platforms XI, San Diego, CA, 2019 (invited).
93. (confirmed) V.E. Babicheva, "Transdimensional photonic lattices with Mie-resonant nanoantennas," **SPIE Optics + Photonics**, Nanoscience + Engineering, Metamaterials, Metadevices, and Metasystems 2019, San Diego, CA, 2019 (oral).
92. (confirmed) V.E. Babicheva, "Multipole resonances in transdimensional van der Waals antenna lattices," **2019 MRS Fall Meeting**, Emerging Material Platforms and Approaches for Plasmonics, Metamaterials and Metasurfaces, Boston, MA, 2019 (invited).
91. (confirmed) V.E. Babicheva, "van der Waals Metasurfaces and Transdimensional Photonic Lattices" 10th International Conference on Metamaterials, Photonic Crystals and Plasmonics (**META 2019**), Advanced Passive and Active Metasurfaces, Lisbon, Portugal, 2019 (invited).
90. V.E. Babicheva, J. Nehls, J.V. Moloney, "Plasmonic resonances and light generation in nanoparticle dimers," International Applied Computational Electromagnetics Society (**ACES**) Symposium, Advanced Time Domain Solvers for Multiphysics Modeling in Photonics, Miami, FL, 2019 (invited).
Proceedings <http://ieeexplore.ieee.org/document/8713022/> #31
89. V.E. Babicheva, "Phonon-Polariton Resonances in Hexagonal Boron Nitride Metasurfaces," International Applied Computational Electromagnetics Society (**ACES**) Symposium, Recent Advancements in the Modeling, Design and Application of Metasurfaces, Miami, FL, 2019 (oral).
Proceedings <http://ieeexplore.ieee.org/document/8713107/> #30

86. V. Babicheva, J. Nehls, J.V. Moloney, "Localized Surface Plasmon Modes and Spasing in Nanoparticle Dimer," **2019 MRS Spring Meeting & Exhibition**, Phoenix, AZ, 2019 (oral).
87. P. Terekhov, K. Baryshnikova, V. Babicheva, A. Shalin, A. Karabchevsky, A. Evlyukhin, "Transmission and reflection features of all-dielectrics metasurfaces with electric and magnetic resonances" **SPIE Photonics West OPTO**, #PW19O-OE116-11, conference on High Contrast Metastructures VII, San Francisco, CA, 2019 (oral).

[SPIE Proceedings, vol. 10927, 109270I \(2019\), doi: 10.1117/12.2506973 #29](#)

2018

86. V.E. Babicheva and J.V. Moloney, "Lattice Resonances with Localized Zenneck Modes," **2018 MRS Fall Meeting & Exhibition**, Boston, MA, 2018 (oral).
85. C.-Y. Yang, J.-H. Yang, Z.-Y. Yang, Z.-X. Zhou, V. Babicheva, and K.-P. Chen, "Dielectric Metasurfaces with the Kerker Effect as Narrowband Absorbers in NIR," **2018 MRS Fall Meeting & Exhibition**, Boston, MA, 2018 (poster).
84. V. Babicheva, J.M. Nehls, C. Dineen, J.V. Moloney, "Electric and Magnetic Resonances in Metasurfaces," **ACMS30: Mathematical modeling and computational methods for multiscale problems in science and engineering**, Tucson, AZ, 2018 (poster).
83. C.Y. Yang, J.H. Yang, Z.Y. Yang, Z.X. Zhou, V.E. Babicheva, K.P. Chen, "Near Bandgap Absorption Enhancement of Dielectric Metasurfaces," 23rd Microoptics Conference (**MOC 2018**), Taipei, Taiwan, 2018.
82. J. Nehls, V. Babicheva, J. Liu, M. Brio, C. Dineen, J. Moloney, "Time-domain modeling of plasmonic hot spots and gap fields for nano-imaging," **SPIE Optics + Photonics**, Nanoscience + Engineering, Plasmonics: Design, Materials, Fabrication, Characterization, and Applications XVI, paper #OP18N-OP104-111, San Diego, CA, 2018 (poster).
81. C.Y. Yang, J.H. Yang, Z.Y. Yang, Z.X. Zhou, M.G. Sun, V.E. Babicheva, K.-P. Chen, "Absorption Enhancement of Dielectric Metasurfaces with the Kerker Effect," **SPIE Optics + Photonics**, Nanoscience + Engineering, Plasmonics: Design, Materials, Fabrication, Characterization, and Applications XVI, paper #OP18N-OP104-56, San Diego, CA, 2018 (invited).

[SPIE Proceedings, vol. 10722, 107221v \(2018\), doi: 10.1117/12.2320406 #28](#)

80. V. Babicheva, A.B. Evlyukhin, J.M. Nehls, C. Dineen, and J.V. Moloney, "Control of Electric and Magnetic Resonances in Nanoparticle Metasurfaces," Conference on Lasers and Electro-Optics (**CLEO**), San Jose, CA, 2018 (poster).

[Proceedings vol. JW2A, pp. JW2A.94 \(2018\) doi: 10.1364/CLEO_AT.2018.JW2A.94 #27](#)

79. V. Babicheva and A. Evlyukhin, "Kerker Effect with Collective Multipole Resonances in Nanoparticle Lattices," **2018 MRS Spring Meeting & Exhibition**, Phoenix, AZ, 2018 (oral).
78. Y. Abate, V. Babicheva, S. Gamage, S. Cronin, V. Yakovlev, "Near-field Surface Waves in Few-Layer MoS₂," **APS March Meeting 2018**, Los Angeles, CA, 2018 (oral).
77. V. Babicheva, P. Terekhov, and A. Evlyukhin, "Lattice Kerker effect in nanoparticle arrays with electric and magnetic dipole resonances," **SPIE Photonics West OPTO**, #PW18O-OE117-31, conference on High Contrast Metastructures VII, San Francisco, CA, 2018 (oral).

2017

76. V. Babicheva and A. Evlyukhin, "Control of Collective Electric and Magnetic Resonances in Nanoparticle Lattices," **2017 MRS Fall Meeting & Exhibition**, Boston, MA, 2017 (oral).
75. M. Petrov, V. Babicheva, K. Baryshnikova, and P. Belov, "Reflection compensation with all-dielectric metasurfaces," 2017 IEEE International Conference on Microwaves, Antennas, Communications and Electronic Systems, **IEEE COMCAS**, Tel Aviv, Israel, 2017 (invited).
- Proceedings doi: [10.1109/COMCAS.2017.8244855](https://doi.org/10.1109/COMCAS.2017.8244855) #26**
74. L. Hubbard, V. Babicheva, Y. Abate, V.T. Woods, N. Dietz, "Growth and characterization of GaN/GaN heterostructures on GaN substrate templates," **SPIE Optics + Photonics**, Optical Engineering + Applications, Solid State Lighting and LED-based Illumination Systems conference, paper # OP17O-OP220-27, San Diego, CA, 2017 (oral).
73. Y. Abate, A. Fali, V. Babicheva, N. Dietz, "High-Resolution Spectroscopy and Imaging of interfacial strain fields in InN/GaN and GaN/InN/GaN heterostructures," **SPIE Optics + Photonics**, Optical Engineering + Applications, Solid State Lighting and LED-based Illumination Systems conference, paper # OP17O-OP220-24, San Diego, CA, 2017 (oral).
72. D. Seidlitz, G.B. Cross, V. Babicheva, A. Hoffmann, Y. Abate, N. Dietz, "Growth and characterization of GaN/InN/GaN heterostructures on GaN substrate templates using migration-enhanced, plasma-assisted MOCVD," **SPIE Optics + Photonics**, Optical Engineering + Applications, Solid State Lighting and LED-based Illumination Systems conference, paper # OP17O-OP220-18, San Diego, CA, 2017 (oral).
71. V. Babicheva, V. Yakovlev, S. Gamage, M. Stockman, Y. Abate, "Near-Field Edge Fringes in Nanolayer Materials," **2017 MRS Spring Meeting & Exhibition**, Phoenix, AZ, 2017 (oral).
70. A. Boulesbaa, K. Wang, V.E. Babicheva, I.I. Kravchenko, M.-W. Lin, M. Mahjouri-Samani, M. Tian, A.A. Puretzky, I.N. Ivanov, C.M. Rouleau, B.G. Sumpter, D.B. Geohegan, "Ultrafast charge and energy exchanges at hybrid interfaces involving 2D semiconductors," **SPIE Photonics West LASE**, conference on Synthesis and Photonics of Nanoscale Materials XIV, San Francisco, CA, 2017 (oral).

SPIE Proceedings, vol. 10093, 1009308 (2017), doi: [10.1117/12.2253659](https://doi.org/10.1117/12.2253659). #25

2016

69. V. Babicheva, V. Yakovlev, S. Gamage, M. Stockman, Y. Abate, "Polarizability Mapping of Nanolayers Based on Near-Field Edge Fringes," **AVS 63rd International Symposium and Exhibition**, Nashville, TN, 2016 (oral). *Postdoctoral Fellow Travel Award from AVS Electronic Materials & Photonics Division (EMPD)*
68. Y. Abate, D. Seidlitz, A. Fali, S. Gamage, V. Babicheva, V. Yakovlev, M. Stockman, R. Collazo, D. Alden, N. Deitz, "Near-Field Spectroscopy and Imaging of Single Nanoparticles," **AVS 63rd International Symposium and Exhibition**, Nashville, TN, 2016 (invited).
67. S. Gamage, L. Zhen, V. Babicheva, M. Javani, V.S. Yakovlev, H. Wang, S.B. Cronin, Y. Abate, "Nanoscopy of Black Phosphorus Degradation," **AVS 63rd International Symposium and Exhibition**, Nashville, TN, 2016 (poster).
66. V.E. Babicheva, M.I. Petrov, K.V. Baryshnikova, P.A. Belov, "Antireflective properties and substrate-mediated directional scattering in dielectric Huygens' metasurfaces," **STEM conference** at Georgia State University, Atlanta, GA, 2016 (oral).
65. V. Babicheva, V. Yakovlev, S. Gamage, M. Stockman, Y. Abate, "Nanolayer polarizability mapping based on near-field edge fringes," **NFO-14: The 14th International Conference on Near-Field Optics, Nanophotonics and Related Techniques**, Hamamatsu, Japan, 2016 (poster).

64. Y. Abate, S. Gamage, Li Zhen, V. Babicheva, M.H. Javani, Han Wang, S.B. Cronin, and M.I. Stockman, "Nanoscopy Reveals Surface-metallic Black Phosphorus," **NFO-14: The 14th International Conference on Near-Field Optics, Nanophotonics and Related Techniques**, Hamamatsu, Japan, 2016 (oral).
63. V. Babicheva, V. Yakovlev, S. Gamage, M. Stockman, Y. Abate, "Near-field edge fringes in nanolayer polarizability mapping," **CNMS User Meeting 2016**, Oak Ridge, TN, 2016 (oral).
62. S. Ishii, V.E. Babicheva, M.Y. Shalaginov, A. Boltasseva, A.V. Kildishev, and E. Narimanov, "Sub-wavelength optics with hyperbolic metamaterials: waveguide, scattering and optical topological transition (tentative)" **18th ICTON 2016**, Trento, Italy, 2016 (invited).

[Proceedings Tu.D4.5, pp. 1-4, doi: 10.1109/ICTON.2016.7550461 #24](#)

61. V.E. Babicheva, M.I. Petrov, K.V. Baryshnikova, P.A. Belov, "Dielectric Huygens' metasurfaces: the role of high-index substrate," **METANANO-2016**, Anapa, Russia, 2016 (oral).
60. A.V. Uskov, I.E. Protsenko, I.V. Smetanin, R.Sh. Ikhsanov, V.E. Babicheva, S.V. Zhukovsky, and A.V. Lavrinenko, H. Xu, E.P. O'Reilly, "Photoemission of electrons from plasmonic nanoantennas," **METANANO-2016**, Anapa, Russia, 2016 (invited).
59. A.V. Chebykin, V.E. Babicheva, I. Iorsh, A. Orlov, P. Belov, S. Zhukovsky, "Purcell effect in multiperiodic multilayered metal-dielectric metamaterials," **META'16**, Torremolinos-Malaga, Spain, 2016 (oral).
58. V.E. Babicheva, M.I. Petrov, K.V. Baryshnikova, P.A. Belov, "Substrate-mediated antireflective properties of silicon nanoparticle array," **Days on Diffraction – 2016**, St. Petersburg, Russia, 2016 (oral).

[Proceedings pp. 46-51 \(2016\) doi: 10.1109/DD.2016.7756811 #23](#)

2015

57. V.E. Babicheva, A.V. Krasavin, and A.V. Zayats, "Plasmonic modulators based on bismuth ferrite for low-loss optical switching," **2015 MRS Fall Meeting & Exhibition**, Boston, MA, 2015 (oral).
56. M.I. Petrov, K.V. Baryshnikova, V.E. Babicheva, P.A. Belov, "Plasmonic and silicon nanoparticle coatings for thin-film photovoltaic applications," **Surface Plasmon Photonics (SPP7)**, Jerusalem, Israel, 2015 (poster).
55. V.E. Babicheva, A.B. Evlyukhin, S.V. Zhukovsky, "Collective Resonances of Plasmonic Nanoparticle Arrays Excited by Light with Polarization along Lattice Periodicity," **Surface Plasmon Photonics (SPP7)**, Jerusalem, Israel, 2015 (poster).
54. V.E. Babicheva, M.Y. Shalaginov, S. Ishii, A. Boltasseva, and A.V. Kildishev, "Multilayer cladding with hyperbolic dispersion for plasmonic waveguides," Conference on Lasers and Electro-Optics (**CLEO**), San Jose, CA, 2015 (oral).

[Proceedings vol. FM2C, pp. FM2C.7 \(2015\) doi:10.1364/CLEO_QELS.2015.FM2C.7 #22](#)

53. V.E. Babicheva, S.V. Zhukovsky, A.V. Lavrinenko, "Nanophotonic Modulator with Bismuth Ferrite as Low-loss Switchable Material," Conference on Lasers and Electro-Optics (**CLEO**), San Jose, CA, 2015 (poster).

[Proceedings vol. JTu5A, pp. JTu5A.72 \(2015\) doi:10.1364/CLEO_AT.2015.JTu5A.72 #21](#)

52. K.V. Baryshnikova, M.I. Petrov, V.E. Babicheva, P.A. Belov, "Plasmonic and all-dielectric nanoparticle anti-reflective coatings" **Days on Diffraction – 2015**, St. Petersburg, Russia, 2014 (poster).
51. R. Ikhsanov, A. Uskov, I. Protsenko, I. Smetanin, V. Babicheva, and S. Zhukovsky, "Hot electron photoemission from plasmonic nanoparticles and metal films: surface and volume photoeffects," The Third International Conference on Quantum Technologies (**ICQT**), Moscow, Russia, 2015 (poster).
50. A.V. Uskov, I.E. Protsenko, I.V. Smetanin, R.Sh. Ikhsanov, S.V. Zhukovsky, A.B. Evlyukhin, V.E. Babicheva, A.V. Lavrinenko, and M.E. Guzhva, "Hot electron photoemission from plasmonic nanoantennas:

photoelectric metamaterials and giant photogalvanic effect," **SPIE Optics + Optoelectronics**, Prague, Czech 2015 (oral).

49. V.E. Babicheva, A. Shaltout, M.Y. Shalaginov, S. Ishii, A. Boltasseva, and A.V. Kildishev, "Towards practical realization of plasmonic waveguides cladded by hyperbolic metamaterials," **SPIE Photonics West OPTO**, San Francisco, CA, 2015 (oral).

2014

48. M. Ferrera, N. Kinsey, M.Y. Shalaginov, G.V. Naik, V.E. Babicheva, C.T. DeVault, A.V. Kildishev, A. Boltasseva, V.M. Shalaev, "Recent progress in nanophotonics," **SPIE/COS Photonics Asia**, Beijing, China, 2014 (invited).

47. N. Kinsey, M. Ferrera, V. Babicheva, G. V. Naik, A. V. Kildishev, V. M. Shalaev, A. Boltasseva, "CMOS Integrated Plasmonics: Interconnects and Modulators," **SPIE Optics + Photonics**, Active Photonic Materials VI conference, paper # 9162-18, San Diego, CA, 2014 (invited).

46. A.A. Orlov, A.K. Krylova, S.V. Zhukovsky, V.E. Babicheva, P.A. Belov, "Optical phenomena in multi-periodic plasmonic multilayers," **SPIE Optics + Photonics**, Metamaterials, Metadevices, and Metasystems conference, paper # 9160-66, San Diego, CA, 2014 (oral).

45. V.E. Babicheva, S.V. Zhukovsky, A.B. Evlyukhin, I.E. Protsenko, A.V. Uskov, A.V. Lavrinenko, R.Sh. Ikhsanov, A.V. Lavrinenko, E.P. O'Reilly, H. Xu, and A.V. Uskov, "Photoconductivity and directional photoemission in plasmonic non-centrosymmetric nanoparticles," The 13th International Conference on Near-Field Optics, Nanophotonics and Related Techniques (**NFO 13**), Snowbird, UT, 2014 (oral).

44. V.E. Babicheva, A. Chebykin, A.A. Orlov, P. Belov, A.V. Lavrinenko, and S.V. Zhukovsky, "Purcell effect enhancement in plasmonic hyper-crystals," The 13th International Conference on Near-Field Optics, Nanophotonics and Related Techniques (**NFO 13**), Snowbird, UT, 2014 (poster).

43. N. Kinsey, J. Kim, L. Prokopeva, M. Ferrera, V. Babicheva, A. Dutta, S. Choudhury, A. Kildishev, V. Shalaev, and A. Boltasseva, "Practical Nanophotonics with Plasmonic Ceramics," 8th International Congress on Advanced Electromagnetic Materials in Microwaves and Optics (**Metamaterials**), Copenhagen, 2014 (invited).

42. A.V. Uskov, I.E. Protsenko, R.Sh. Ikhsanov, V.E. Babicheva, S.V. Zhukovsky, A.V. Lavrinenko, E.P. O'Reilly, H. Xu, "Hot electron photoemission from plasmonic nanoparticles: Role of transient absorption in surface mechanism," 8th International Congress on Advanced Electromagnetic Materials in Microwaves and Optics (**Metamaterials**), Copenhagen, 2014 (oral).

Proceedings pp. 31-33 (2014) doi: [10.1109/MetaMaterials.2014.6948547](https://doi.org/10.1109/MetaMaterials.2014.6948547) #20

41. V.E. Babicheva, S.V. Zhukovsky, A.V. Lavrinenko, "Bismuth ferrite for active control of surface plasmon polariton modes," 8th International Congress on Advanced Electromagnetic Materials in Microwaves and Optics (**Metamaterials**), Copenhagen, 2014 (poster).

Proceedings pp. 319-321 (2014) doi: [10.1109/MetaMaterials.2014.6948544](https://doi.org/10.1109/MetaMaterials.2014.6948544) #19

40. S.V. Zhukovsky, V.E. Babicheva, A.B. Evlyukhin, I.E. Protsenko, A.V. Uskov, A.V. Lavrinenko, "Plasmonic nanocone arrays as photoconductive and photovoltaic metamaterials," 8th International Congress on Advanced Electromagnetic Materials in Microwaves and Optics (**Metamaterials**), Copenhagen, 2014 (oral).

Proceedings pp. 307-309 (2014) doi: [10.1109/MetaMaterials.2014.6948540](https://doi.org/10.1109/MetaMaterials.2014.6948540) #18

39. A.A. Orlov, E.A. Yankovskaya, S.V. Zhukovsky, V.E. Babicheva, P.A. Belov, "Retrieving constitutive parameters of plasmonic multilayers from reflection and transmission coefficients," 8th International Congress on Advanced Electromagnetic Materials in Microwaves and Optics (**Metamaterials**), Copenhagen, 2014 (oral).

Proceedings pp. 391-393 (2014) doi: [10.1109/MetaMaterials.2014.6948571](https://doi.org/10.1109/MetaMaterials.2014.6948571) #17

38. S.V. Zhukovsky, V.E. Babicheva, A. Orlov, A. Andryieuski, J.E. Sipe, A.V. Lavrinenko, "Populating the large-wavevector realm: Bloch volume plasmon polaritons in hyperbolic and extremely anisotropic metamaterials," 8th International Congress on Advanced Electromagnetic Materials in Microwaves and Optics (**Metamaterials**), Copenhagen, 2014 (invited).

Proceedings pp. 304-306 (2014) doi: [10.1109/MetaMaterials.2014.6948539](https://doi.org/10.1109/MetaMaterials.2014.6948539) #16

37. A.A. Orlov, A.K. Krylova, S.V. Zhukovsky, V.E. Babicheva, P.A. Belov, "Multi-periodicity induces prominent optical phenomena in plasmonic multilayers," 8th International Congress on Advanced Electromagnetic Materials in Microwaves and Optics (**Metamaterials**), Copenhagen, 2014 (oral).

Proceedings pp. 388-390 (2014) doi: [10.1109/MetaMaterials.2014.6948570](https://doi.org/10.1109/MetaMaterials.2014.6948570) #15

36. V.E. Babicheva, N. Kinsey, G.V. Naik, M. Ferrera, A.V. Lavrinenko, V.M. Shalaev, A. Boltasseva, "Plasmonic modulator using CMOS-compatible material platform," 8th International Congress on Advanced Electromagnetic Materials in Microwaves and Optics (**Metamaterials**), Copenhagen, 2014 (oral).

Proceedings pp. 28-30 (2014) doi: [10.1109/MetaMaterials.2014.6948536](https://doi.org/10.1109/MetaMaterials.2014.6948536) #14

35. A.V. Uskov, I.E. Protsenko, R.Sh. Ikhsanov, V.E. Babicheva, S.V. Zhukovsky, A.V. Lavrinenko, E.P. O'Reilly, H. Xu, "Surface and volume photoeffects in Schottky photodetectors with plasmonic nanoantennas," The XII international conference on Nanostructured Materials (**NANO 2014**), Moscow, Russia, 2014 (oral).

34. A. Uskov, I. Protsenko, R. Ikhsanov, V. Babicheva, S. Zhukovsky, A. Lavrinenko, E. O'Reilly, and H. Xu, "Surface and Volume Photoemission of Hot Electrons from Plasmonic Nanoantennas," Conference on Lasers and Electro-Optics (**CLEO**), San Jose, CA, 2014 (oral).

Proceedings vol. FM1K, pp. FM1K.2 (2014) doi: [10.1364/CLEO_QELS.2014.FM1K.2](https://doi.org/10.1364/CLEO_QELS.2014.FM1K.2) #13

33. V. Babicheva, N. Kinsey, G. Naik, M. Ferrera, A. Lavrinenko, V.M. Shalaev, and A. Boltasseva, "CMOS Compatible Ultra-Compact Modulator," Conference on Lasers and Electro-Optics (**CLEO**), San Jose, CA, 2014 (oral).

Proceedings vol. FTu3K, pp. FTu3K.3 (2014) doi: [10.1364/CLEO_QELS.2014.FTu3K.3](https://doi.org/10.1364/CLEO_QELS.2014.FTu3K.3) #12

32. V. Babicheva, I. Iorsh, A. Orlov, P.A. Belov, A. Lavrinenko, A. Andryieuski, and S. Zhukovsky, "Multi-Periodic Photonic Hyper-Crystals: Volume Plasmon Polaritons and the Purcell Effect," Conference on Lasers and Electro-Optics (**CLEO**), San Jose, CA, 2014 (oral).

Proceedings vol. FTu2C, pp. FTu2C.3 (2014) doi: [10.1364/CLEO_QELS.2014.FTu2C.3](https://doi.org/10.1364/CLEO_QELS.2014.FTu2C.3) #11

31. S.V. Zhukovsky, A. Andryieuski, V.E. Babicheva, A.V. Lavrinenko, "Beyond the light line: Large-wavevector wave engineering in hyperbolic metamaterials," **Days on Diffraction** – 2014, St. Petersburg, Russia, 2014 (invited).

30. A.A. Orlov, E.A. Yankovskaya, S.V. Zhukovsky, V.E. Babicheva, P.A. Belov, "Characterization of zero-index plasmonic multilayers using retrieval of the constitutive parameters from S-parameters," **Days on Diffraction** – 2014, St. Petersburg, Russia, 2014 (oral).

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