

Alexandra Boltasseva
Professor of Electrical and Computer Engineering and Materials Engineering
Birck Nanotechnology Center and Purdue Quantum Science and Engineering Institute
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Summary:

Prof. Boltasseva's team specializes in nanophotonics, plasmonics, optical metamaterials, nanofabrication and optical materials. The central theme of Boltasseva's research is to find new ways for realization of nanophotonic devices - from material growth to advanced designs and demonstrations. Prof. Boltasseva's team aims at developing new platforms to unlock properties of nanophotonic structures in previously unavailable designs and wavelength regimes and to enable new generations of low-loss, tunable, reconfigurable, semiconductor-compatible devices for applications in on-chip circuitry, information processing, data recording/storage, sensing, medical imaging and therapy, energy conversion and quantum information technology.

Education and Training:

1999 B.S. Applied Physics & Mathematics, Moscow Institute of Physics and Technology, Russia (summa cum laude) (Dr. A. Bogatov)
2000 M.S. Applied Physics & Mathematics, Moscow Institute of Physics and Technology, Russia (summa cum laude) (Dr. A. Bogatov)
2004 Ph.D. Electrical Engineering, Research Center COM, Technical University of Denmark, Denmark (Prof. S. Bozhevolnyi)

Professional Career:

Ron and Dotty Garvin Tonjes Professor of ECE	08/2020 – present
Professor, Materials Engineering, courtesy appointment, Purdue University	10/2018 – present
Professor of ECE, Purdue University	08/2016 – present
Associate Prof. (tenured) of ECE, Purdue University	08/2013 – 07/2016
Adjunct Associate Professor, DTU Fotonik, Technical University of Denmark	10/2011 – present
Assistant Prof. (tenure track) at ECE, Purdue University	09/2008 - 08/2013
Guest Prof. at SAOT, Universität Erlangen-Nürnberg, Germany	11/2009 - 12/2012
Associate Prof. (tenured) at DTU Fotonik, Technical University of Denmark	07/2008 - 08/2010
Assistant Professor at COM•DTU, Technical University of Denmark	2007 – 2008
Post. Doc. at COM•DTU, Technical University of Denmark	2005 – 2007
Research Scientist at Alight Technologies A/S, Denmark	2004 – 2005
Research Assistant (Ph.D. candidate) at Micro Managed Photons A/S, Denmark	2002 – 2004
Research Assistant (M.S. candidate) at P. N. Lebedev Physical Institute of the Russian Academy of Sciences, Moscow, Russia	1998 – 2000

Professional Recognitions, Honors, Appointments and Awards:

2020 **Fellow of National Academy of Inventors (NAI)**
2020 Ron and Dotty Garvin Tonjes Named Professor of ECE, Purdue University
2020 **Fellow of the IEEE** - the Institute of Electrical and Electronics Engineers
2019 Inaugural Discovery Park Fellow, Purdue University
2018 **Blavatnik National Award** for Young Scientists in Physical Sciences and Engineering Finalist
2017 **Fellow of the SPIE** - International Society for Optical Engineers
2016 **Editor-in-Chief**, Optical Society of America (OSA)'s Optical Materials Express (2016 - present)
2015 National Academy of Engineering (NAE) U.S. Frontiers of Engineering (FOE) Symposium Invited Speaker, September 9-11, 2015, National Academies' Beckman Center in Irvine, California, USA
2015 **Fellow of the OSA** - Optical Society of America

- 2014 Selected to Purdue Innovator Hall of Fame, Purdue Research Foundation, Purdue University
- 2014 Inaugural "DANIELA PUCCI" prize at NanoPlasm Conference, June 16-20, 2014, Cetraro, Italy
- 2014 Elected to **MRS Board of Directors** - Materials Research Society (two-year term 2014-2016)
- 2014 University **Faculty Scholar**, College of Engineering, Purdue University (*awarded to faculty "on an accelerated path toward academic distinction" with additional funding for research*)
- 2013 **Materials Research Society (MRS) Outstanding Young Investigator Award** (*awarded annually to one young scientist for "interdisciplinary scientific work in materials research and "exceptional promise as a developing leader in the materials area"*)
- 2013 **Institute of Electrical and Electronics Engineers (IEEE) Photonics Society Young Investigator Award** (*awarded annually to an individual who has made outstanding technical contributions to photonics prior to his or her 35th birthday*)
- 2012 National Academy of Engineering (NAE) U.S. Frontiers of Engineering (FOE) Symposium participant, September 13-15, 2012, GM Technical Center, Warren, Michigan, USA (*invitation-only symposium gathering 78 outstanding engineers under the age of 45*)
- 2012 Purdue College of Engineering **Early Career Research Award** (*for 'early excellence with clear potential for future preeminence in research'*)
- 2011 **MIT Technology Review TR35 Award** (*Technology Review magazine published by MIT 'honors 35 innovators under 35 each year whose work promises to change the world'*)
- 2010 The Acorn Award: Seed for Success, Purdue (*PI and co-PIs garnering \$1 million or more in research grants, with Prof. Shalaev and Prof. Narimanov*)
- 2009 Erlangen Graduate School in Advanced Optical Technologies (SAOT) **Young Researcher Award in Advanced Optical Technologies**, Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany (*awarded annually to an outstanding young scientist in the field of optics and photonics', prize money EUR 100,000 to be used freely for establishing collaborative activities and research links to SAOT*)
- 2009 Chicago Alumni New Faculty Award, Purdue faculty start-up package
- 2008 **Young Researcher Participant, 58th Meeting of Nobel Prize Winners in Physics**, Council for the Lindau Nobel Laureate Meetings, Lindau, Germany (*Nomination by the Danish Research Council, chosen in closed competition among young scientists worldwide, 1 out of total 2 participants from Denmark*)
- 2008 **"Ung Eliteforskerpris": Young Elite-Researcher Award** from the Danish Councils for Independent Research, Denmark (*awarded annually to only 20 scientists across all disciplines, including liberal arts*)
- 2006 "UBVAs forfatterlegat": Danish Confederation of Professional Associations prize for PhD dissertation
- 2004 **"Talent Project" grant** from the Danish Technical Research Council, Denmark (*independent postdoc grant to establish own activities*)
- 1999 Lenin's scholarship for academic excellence, Russia (*the highest award for academic excellence*)
- 1996-1999 Moscow Institute of Physics and Technology scholarships for academic excellence, Russia
- 1993,1994 Winner of High-School Physics Olympics of Chuvash Republic, Russia
- 1993 Honor Award for the best experimental work at All-Russian Physics Olympics, Russia (1993)

Research Grants and Contracts Received:

- [1] Principal Investigator (**PI**), Surface Plasmon Polariton Optics Using Advanced Nanotechnology, Danish Technical Research Council (FTP) grant #26-04-0268, \$300,000, 2005-2007
- [2] **PI**, On-Chip Nano-Imaging Using Superlens (NanoMIUS), Danish Research Council for Technology and Production Sciences (FTP) grant #274-07-0057, \$900,000, 2009-2011
- [3] **PI**, Improved Plasmonic Materials for Nanophotonics, Purdue Research Foundation (PRF) grant, \$16,750, 2009-2010
- [4] **PI**, Searching for Better Plasmonic Materials, Army Research Office (ARO), grant #W911NF-09-1-0516, \$50,000, 09/15/2009 – 06/14/2010
- [5] co-PI (PI: D. Smith, DukeU), Transformation Optical Metamaterials, Army Research Office (ARO) Multidisciplinary University Research Initiative (MURI), grant #56154-PH-MUR (W911NF-09-1-0539), Boltasseva's part \$0.6M, 09/28/2009 – 01/27/2014
- [6] **PI**, School in Advanced Optical Technologies (SAOT) Young Researcher Award in Advanced Optical Technologies, Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany, total funds ~\$145,000, 2009-2012
- [7] **PI**, Glancing Angle Deposition System for Transformation-Optics Devices, Defense University Research Instrumentation program (DURIP), Army Research Office (ARO), grant #57566-PHRIP (W911NF-10-1-0380), \$150,000, 08/10/2010-09/09/2011

- [8] co-PI (PI: N. Engheta, UPenn) Large-Area 3D Optical Metamaterials with Tunability and Low Loss, Office of Naval Research (ONR) Multidisciplinary University Research Initiative (MURI), grant #N00014-10-1-0942, Boltasseva's part \$0.9M, 08/01/2010-07/31/2015
- [9] **PI**, Unlocking new physics with improved plasmonic materials, Army Research Office (ARO), grant #57981-PH (W911NF-11-1-0359), \$400,000, 08/01/2011-07/30/2014
- [10] Co-PI, (PI: T. Norris, University of Michigan), Center for Photonic and Multiscale Nanomaterials (C-PHOM), NSF grant DMR-1120923, Materials Research Science and Engineering Center (MRSEC), Boltasseva's part 100k/year, 09/15/2011-08/31/2018
- [11] **PI**, Office of the Vice President for Research (OVPR) Laboratory Equipment Program, Purdue University, grant #206391, proposal #13055326, \$50,000, 01/05/2012-31/12/2013
- [12] co-PI (PI: V. Shalaev, Purdue), Flat Photonics with Metasurfaces, Army Research Office (ARO), grant #106619, total \$1M; Boltasseva's part \$0.5M (\$100,000/year), 07/01/2013-06/30/2017
- [13] Co-PI, (PI: M. Stockman, Georgia State University), Office of Naval Research (ONR) Multidisciplinary University Research Initiative (MURI), Novel Nonlinear Optical Processes in Active, Random, and Nanostructured Systems, Boltasseva's part \$180,000/year, 10/01/2013-08/31/2020
- [14] **PI**, Air Force Office of Scientific Research (AFOSR), CMOS-Compatible Plasmonics for Hybrid Nanophotonic Circuits, total \$600,000, 06/01/2014 - 05/31/2017
- [15] **PI**, Air Force Office of Scientific Research (AFOSR) equipment grant, Tunable Femtosecond Laser System for Advanced Linear and Nonlinear Investigation of Novel Alternative Plasmonic Materials and Devices, \$318,623.00, 06/01/2015 - 05/31/2017
- [16] Co-PI, (PI: F. Capasso, Harvard), Air Force Office of Scientific Research (AFOSR) MURI, Active Metasurfaces for Advanced Wavefront Engineering and Waveguiding, Boltasseva's part \$160K/year, 07/01/2014 - 06/30/2019
- [17] **PI**, National Science Foundation, Enabling High-Temperature Photonics with Plasmonic Ceramics, Total \$500,000, 09/01/2015-08/31/2018
- [18] **PI**, Office of the Vice President for Research (OVPR) Laboratory Equipment Program, Purdue University, \$37,349.35, 12/16/2015-06/01/2016
- [19] Co-PI, (PI: V. Shalaev, Purdue), Office of Naval Research (ONR) DURIP, Time-Resolved Fluorescence Spectroscopy with Nanoscale Manipulation Capability for Novel On-Chip Nanophotonic Quantum Devices, \$278,000, 07/15/2016-07/14/2017
- [20] Co-PI, (PI: E. Marinero, Purdue), Office of Naval Research (ONR), Merging Spintronics and Nanophotonics: The Confluence of Spin, Photons, Plasmons and Charge for Novel Hybrid Photonics and Nano-electronic Device, Total \$300,000, 09/01/2016-08/31/2018
- [21] **PI**, Sandia National Laboratory, Near Infrared Nanophotonics through Dynamic Control Carrier Density in Conducting Ceramics, \$55,000/year, 11/2016-10/2019
- [22] **PI**, Air Force Office of Scientific Research (AFOSR), Hot-Electrons Generation in New Plasmonic Materials for Integrated On-Chip Devices, total \$750,000, 04/27/2017 - 04/26/2020
- [23] **PI**, Office of Naval Research (ONR), Defense University Research Instrumentation program (DURIP), Optical Characterization System for Novel On-Chip Nanoscale Light Sources, Total \$170,000, 06/01/2017-05/31/2018
- [24] co-PI (PI: V. Shalaev), Air Force Office of Scientific Research (AFOSR), Space-Time Photonic Metamaterials: From Design and Materials to Device Concepts, total \$795,000; Boltasseva's budget \$125,000/year, 11/15/2017-11/14/2021
- [25] **PI**, Basic Energy Sciences (BES), U.S. DOE Office of Science, Control of light-matter interaction with epsilon-near-zero homogeneous alternative plasmonic materials, total \$1,309,000, 07/01/2017-06/30/2020
- [26] Co-PI (PI: Y. Chen, Purdue), Purdue University, Big Idea Challenge Research Grant, Photonics Technologies for Bio Security, Food Safety and other Health Applications, Boltasseva's budget 30k, 04/01/2017-03/31/2019
- [27] Co-PI, Office of Naval Research (ONR) DURIP, Versatile Sputtering Tool for New Optical Materials for High-Temperature Plasmonics, Robust On-chip Nanophotonics, and Quantum Devices, \$456,000, 07/15/2018-07/14/2019
- [28] Co-PI, (PI: E. Marinero, Purdue), Office of Naval Research (ONR), Topology and Magneto-Photonics: Novel Platform for Advanced Metasurface and Magnonic Devices, Total \$450,000, 08/01/2018-07/31/2021
- [29] Co-PI (PI: V. Shalaev, Purdue) Office of Naval Research (ONR) DURIP, Advanced Pulsed Laser Deposition for Ultrafast, Tunable Metal and Magneto Oxide Nanophotonic Devices, \$162,150, 7/1/2019-6/30/2020

- [30] **PI**, Office of Naval Research (ONR), Extreme Nonlinear Optics with Low-Index Materials, total \$300,000, 01/01/2020 -12/31/2021
- [31] **PI**, Air Force Office of Scientific Research (AFOSR), Trans-Dimensional Photonics: From Evolution of Material Properties to Exploring, total: \$800K, 01/01/2020 -12/31/2023
- [32] co-PI, (PI: V. Shalaev, Purdue), Office of Naval Research (ONR) DURIP, Ultra-high Vacuum Tool for Growth of Hybrid Magnetic and Plasmonic/Photonic Materials for Novel Magnetophotonic Devices and Quantum Information, \$968,275; 02/01/2020-01/31/2021
- [33] **PI**, Breakthrough Prize Foundation, Exploring Materials and Nanophotonic Structures for LightSail: From Temperature-Dependent Properties to Global Design Optimization, total \$150,000; 11/1/2019-10/31/2021
- [34] **PI**, Basic Energy Sciences (BES), U.S. DOE Office of Science, Opening New Frontiers of Near-Zero-Index (NZI) Optics: from Photonic Time Crystals to Non-Reciprocity and Novel Localization Regimes, renewal; total \$1,403,000, 07/01/2020-06/30/2023
- [35] Co-PI (PI: V. Shalaev, Purdue), National Science Foundation, Quantum MetaQuantum: Hybrid Plasmonic-Photonic Meta-Structures for Quantum Information Systems, total \$420,000; 09/15/2020-08/31/2023
- [36] **PI**, National Science Foundation, Machine-Learning-Optimized Refractory Metasurfaces for Thermophotovoltaic Energy Conversion, \$450,000; 09/15/2020-08/31/2023
- [37] Co-PI (PI: M. Khajavikhan, University of Southern California), Air Force Office of Scientific Research (AFOSR) Multidisciplinary University Research Initiative (MURI), Novel Light-Matter Interactions in Topologically Non-Trivial Weyl Semimetal Structures and Systems, Total \$2,483,750; Boltasseva part \$200,000; 09/15/2020-09/14/2025
- [38] Co-PI, (PI: V. Shalaev, Purdue University), Office of Naval Research (ONR) Multidisciplinary University Research Initiative (MURI) renewal, Novel Materials and Approaches for Nanolasing, Total \$4,826,764, Boltasseva part \$400,000/year; 09/01/2020-09/30/2023
- [39] Co-PI (Purdue PI: Y. Chen), the U.S. Department of Energy (DOE) Office of Science National Quantum Information Science Research Center, the Quantum Science Center (QSC), Total \$11,066,000; Purdue \$1.466M (Y1), \$2.4M (Y2-Y5); Boltasseva part \$250,000/year, 10/01/2020-09/30/2025

Professional Activities and Affiliations:

Professional Society activities and memberships:

National Academy of Inventors (NAI), **Fellow** (2020)
 The Institute of Electrical and Electronics Engineers **IEEE, Fellow** (2020)
 International Society for Optical Engineers **SPIE, Fellow** (2017)
 Materials Research Society, MRS Congressional Visits Day participant, United States Congress, Washington DC
 Optical Society of America **OSA, Fellow** (2015)
 Elected member of the Materials Research Society, **MRS Board of Directors** (2014-2017)
 Senior member, IEEE, Institute of Electrical and Electronics Engineers (2015)
 Materials Research Society, **MRS Congressional Visits** Day participant, United States Congress, Washington, DC (October 2014)
 Optical Society of America OSA Student chapter advisor (2014-present), Purdue
 SPIE, International Society for Optical Engineers Student chapter advisor (2014-present), Purdue
 Purdue Performance Collaborative faculty advisor (2017-present)
 Member of the Advisory Network, Optical Society of America OSA (since 2011)
 Member, Optical Society of America OSA (since 2009), senior member (since 2011)
 Member, SPIE, International Society for Optical Engineers (since 2008), senior member (since 2015)
 Materials Research Society, MRS member (since 2005)
 Member Danish Optical Society, DOPS (2007-2009)
 Member, Network for Women in Physics in Denmark, KIF (2005-2010)
 Member, Nordic Network for Women in Physics, NorWiP (2005-2010)

Editorial:

Optical Materials Express
Optical Materials Express
MRS Communications

Editor-in-Chief (01/2016 - present)
 Guest Editor, focus issue "Plasmonics" (2015)
 Guest Editor, focus issue "Frontiers in Photonics, Plasmonics and Metamaterials" (2015)

Optics Letters	Topical Editor (03/2011 - 03/2014) (04/2014 – 12/2015)
ACS Photonics	Member of the Editorial Board (2015-2016)
Advanced Optical Materials	Editorial advisory board member (2014-2016)
Scientific Reports (Nature Publishing Group)	Editorial Board member, Topical Editor (2014-2016)
EDP (publisher of European Physics Journal and EPL)	Editorial Board member (2013-2016)
Advances in OptoElectronics	Guest Editor, special issue, Modern Trends in Metamaterial Applications (2012)
Advanced Electromagnetics	Editor and editorial board member (ISSN 2119-0275) (2011-2012)
Journal of Optics	Topical Editor, Nanophotonics and Plasmonics (2011-2012)
Materials	Guest Editor, special issue on Next Wave of Metamaterials (ISSN 1996-1944) (2010-2011)
Journal of Optics	Deputy Topical Editor, Nanophotonics and Plasmonics (2009-2010)

Activities as Referee/Jury:

Referee for Journal of Optical Society of America B, Optics Letters, Nature Photonics, Metamaterials, Materials, Nano Letters, Science, Nature Physics, Optics Express, Journal of Lightwave Technology, Optics Communications, IEEE Journal of Quantum Electronics, IEEE Photonics Technology Letters, IEEE Antennas and Wireless Propagation Letters, Microelectronic Engineering

Reviewer: Congress on Advanced Electromagnetic Materials in Microwaves and Optics: Metamaterials (2008, 2010, 2011, 2012, 2013, 2015, 2016, 2017, 2018)

Referee for Funding Agencies: USA: National Science Foundation NSF, Divisions ECCS and EPM (Electronic and Photonic Materials), Division of Materials Research (DMR); Army Research Office; U. S. Department of Energy DOE Office of Basic Energy Sciences (BES), DOE Early Career program

International: General Research Fund Hong Kong; Swiss National Science Foundation; U.S.-Israel Binational Science Foundation; European Commission programs; Science Foundation Ireland, Dublin; Estonian Science Foundation, ETH Zurich Research Commission; Israel Science Foundation; DFG/German Research Foundation;

International expert panels (on-site):

- President of Ireland Future Research Leaders Programme, **Science Foundation Ireland**, Dublin, Ireland (February 2017)
- *Helmholtz Association* evaluation panel, Germany - review of the **Karlsruhe Institute of Technology (KIT)** in the field of “Key Technologies – Material”, Karlsruhe, Germany (December 2017)

Awards Committees/Advisory Boards:

- *RUSNANOPRIZE* evaluation committee, International nanotechnology prize, RUSNANO, Russia (2014) – *Member and Nominator*
- 2015 Prize for Research into the **Science of Light** Jury committee, Quantum Electronics and Optics Division (QEOD), European Physical Society (EPS) (2014) – *Member* (8 members in total)
- **“Japan Prize”** (awarded to one scientist in each field, approx. US\$450,000) - *Official Nominator* http://www.japanprize.jp/en_ (2015, 2016)
- Marie Curie Co-funding of Regional, National and International Programmes (COFUND) program MULTIPLY (2017-2018) Selection & Evaluation Committee – *Member*
- **2018 Nick Holonyak Jr. Award** Committee, Optical Society of America (OSA) (2018-2020) – *Member* (5 members in total)
- European VISORSURF: A Hardware Platform for Software-driven Functional Metasurfaces program (2017-2021) – *Advisory Board Member*
- Technical University of Denmark, Department of Nanotechnology (2019) – *External Member of the search committee*
- **2019 Nick Holonyak Jr. Award Committee Chair** (Past Chair for the 2020 Committee) (03/2019-02/2021)
- **Quantum Economic Development Consortium (QED-C)**, member of the Workforce Committee (2019-present)
- EU TOCHA program on “Dissipationless topological channels for information transfer and quantum metrology”, Scientific Advisory Board Member (2019-2022)
- **Novo Nordisk Foundation**, Denmark, member of the Natural and Technical Sciences committee (2020-2024)

Conference Committees:

1. International Conference on Materials for Advanced Technologies, ICMAT 2009, Singapore, June 28-July 3, 2009 – Member of the program committee
2. Conference on Lasers and Electro-Optics and Conference on Quantum Electronics and Laser Science CLEO/QELS 2009, Baltimore, Maryland, USA, May 31-June 5, 2009 – Member of the QELS technical subcommittee “Fundamentals of Metamaterials”
3. CLEO/QELS 2010, San Jose, California, USA, May 16-21, 2010 – Member of the QELS-03 “Metamaterials and Complex Media” technical subcommittee
4. International Conference on Coherent and Nonlinear Optics (ICONO-2010), Kazan, Russia, August 23-27, 2010 – Member of program subcommittee on “Physics of Metamaterials, Periodic and Random Media”
5. International Conference on Fiber Optics and Photonics, “PHOTONICS – 2010,” Guwahati, India, December 11 – 15, 2010 - Member of the International Advisory Committee
6. Electronic Materials Conference 2011, Santa Barbara, CA, USA, June 22-24, 2011 – Member of the organizing committee
7. CLEO/QELS 2012 – Member of the QELS “Metamaterials and Complex Media” technical subcommittee
8. International Workshop “Novel Ideas in Optics: From Advanced Materials to Revolutionary Applications,” West Lafayette, IN, USA, May 31-June 2, 2012 – Member of the organizing committee
9. CLEO/Europe 2013 – Member of the “Micro and Nano Photonics” subcommittee
10. International Conference on Coherent and Nonlinear Optics and Conference on Lasers, Applications, and Technologies ICONO/LAT 2013, Moscow, Russia, June 18-22, 2013 – **co-chair** of the ICONO subcommittee on “Nano-Optics and Plasmonics”
11. International Conference on Materials for Advanced Technologies, ICMAT 2013, Singapore, June 30-July 5, 2013 – **co-chair** of the symposium on “Plasmonics and Metamaterials”
12. SPIE Optics and Photonics, San Diego, California, USA, August 25-29, 2013 – member of the program committee on “Metamaterials”
13. 2013 IEEE Photonics Conference, September 8-12, 2013 – member of the Photonic Materials and Metamaterials Subcommittee
14. 8th International Congress on Advanced Electromagnetic Materials in Microwaves and Optics: Metamaterials 2014, Copenhagen, Denmark, August 25-28, 2014 - member of the Technical Program Committee
15. SPIE Optics and Photonics, San Diego, CA, USA, August 17-21, 2014 - members of the Program Committee of the “Metamaterials, Metadevices, and Metasystems” conference
16. 2014 IEEE Photonics Conference, San Diego, California USA, October 12-16, 2014 – member of the Photonic Materials and Metamaterials Subcommittee, *special event organizer: **panel discussion*** on Metamaterials
17. 5th International Topical Meeting on Nanophotonics and Metamaterials (NANOMETA-2015), Seefeld, Tirol, Austria, 5-8 January, 2015 – member of Technical Programme Committee
18. CLEO/Europe and European Quantum Electronics Conference (EQEC) 2015, Munich, Germany, June 21 - 25, 2015 – member of the sub-committee “Micro- and Nano-Photonics”
19. SPIE Optics and Photonics, San Diego, CA, USA, August 5-12, 2015 – members of the Program Committee of the “Metamaterials, Metadevices, and Metasystems” conference
20. 2015 MRS Fall Meeting, November 29 - December 4, 2015, Boston, Massachusetts, USA – member of the organizing committee
21. 9th International Congress on Advanced Electromagnetic Materials in Microwaves and Optics: Metamaterials 2015, September 7-12, 2015, Oxford, UK – member of the Technical Program Committee
22. Novel Optical Materials and Applications (NOMA), Advanced Photonics Congress, OSA, 27 June – 1 July, 2015, Boston, MA, USA – member of the program committee
23. New Materials for Photonics, Integrated Photonics Research (IPR), Silicon and Nano Photonics OSA topical meeting, 27 June – 1 July, 2015, Boston, MA, USA – subcommittee member
24. 2015 IEEE Photonics Conference, 28th Annual Conference of the IEEE Photonics Society, Hyatt Regency Reston, Reston, Virginia USA, October 4-8, 2015 – subcommittee member
25. IEEE Photonics Society meeting, 2015 - Nanophotonics subcommittee member
26. New Materials for Photonics, Integrated Photonics Research (IPR), Silicon and Nano Photonics OSA topical meeting, 2016 – subcommittee member
27. "Novel Optical Materials and Applications Conference", OSA Advanced Photonics Congress, Vancouver, Canada, July 18-20, 2016 – Program Committee member
28. The European Optical Society Bi-Annual Meeting, Adlershof, Berlin, September 26-30, 2016 – scientific committee member of "Trends in resonant nanophotonics"

29. IEEE Photonics Conference (IPC), 2016, Hawaii and 2017, Orlando – Nanophotonics (NANO) committee member
30. 2017 MRS Spring meeting - symposium organizer
31. CLEO/Europe-EQEC 2017 - program committee member
32. Integrated Optics: Devices, Materials, and Technologies XXI, SPIE Photonics West, January 20-27, 2017 - program committee member.
33. PR 2017 - Integrated High-precision Photonics, New Orleans, Louisiana, USA, 24 - 28 July 2017 – program committee member
34. Advanced Solid-State Lasers (ASSL), Nagoya, Japan, 1 October – 5 October 2017 – program committee member
35. SPIE Photonics West Integrated Optics Conference 2018 – committee member
36. 2018 MRS Spring Meeting – symposium organizer
37. SPIE Photonics Europe, April 2018, Strasbourg, France – committee member
38. IEEE RAPID Conference, Miramar Beach, FL, USA, 22-24 August 2018 – session organizer, opening address
39. OSA Nonlinear Photonics conference, Zurich, Switzerland, 02 - 05 July 2018 – member of the technical program subcommittee on the topic “Nonlinear Nanophotonics, Plasmonics, and Metamaterials”
40. European Optical Society Annual Meeting (EOSAM), Delft, Netherlands, 8-12 October 2018 – member of the Scientific Committee
41. Metamaterials 2018, the 12th International Congress on Engineered Material Platforms for Novel Wave Phenomena, Finland August 27--September 1, 2018 – member of Technical Program Committee (TPC)
42. Advanced Solid-State Lasers (ASSL) 2018 – Material Committee Member
43. SPIE Photonics West Integrated Optics Conference 2019 – committee member
44. IEEE RAPID Conference, Miramar Beach, FL, USA, 19-21 August 2019 – session organizer
45. SPIE Optics and Photonics, San Diego, California, USA, 2019 – member of the program committee on “Metamaterials”
46. Advanced Solid-State Lasers (ASSL) 2019, Vienna, Austria, 29 September 2019 – 03 October 2019, – Material Committee Member
47. Photonics in Switching and Computing (PSC), part of OSA Advanced Photonics Congress, Montréal, Canada, July 12-16, 2020 - technical program committee member for "Photonics in computing systems and deep learning applications" (virtual conference)
48. Annual meeting of the European Optical Society (EOSAM), Porto, Portugal, September 7-11, 2020 – Scientific Committee of the TOM 5 “Metamaterials, Plasmonics and Resonant Nanophotonics”
49. Nonlinear Photonics (NP) 2020, OSA conference, part of the Advanced Photonics Congress 2020, July 13-16 2020, Montreal, Canada - subcommittee member on "Nonlinear conservative systems and interactions in photonic structures"
50. SPIE Optics and Photonics, San Diego, California, USA, August 2020 – member of the program committee on “Metamaterials” (virtual conference)
51. IEEE RAPID Conference, Miramar Beach, FL, USA, 18-20 August 2020 – session organizer, session chair (virtual conference)
52. The 51th Winter Colloquium on the Physics of Quantum Electronics (PQE), Snowbird, Utah, USA, January 5-9, 2021 – **PLENARY** talk, session organizer (postponed to 2022)
53. Technical Programme Committee of Nanometa-2021

Conferences with Session Chairing/Presiding Invitations:

1. 2006 SPIE Optics and Photonics, Plasmonics: Nanoimaging, Nanofabrication, and Their Applications II, San Diego, California, USA, August 13-17, 2006
2. CLEO/QELS and PhAST 2007, Baltimore, Maryland, USA, May 6-11, 2007
3. 33rd International Conference on Micro- and Nano-Engineering MNE07, Copenhagen, Denmark, September 23-26, 2007 - **Plenary session chair**
4. 2nd European Topical Meeting on Nanophotonics and Metamaterials (NANOMETA 2009) Seefeld, Austria, January 5-8, 2009
5. CLEO/IQEC 2009, Baltimore, Maryland, USA, May 31-June 5, 2009
6. International Conference on Materials for Advanced Technologies, ICMAT 2009, Singapore, June 28 - July 3, 2009
7. SPIE Optics and Photonics: Plasmonics, San Diego, California, USA, August 2-6, 2009
8. SPIE Photonics Europe, Brussels, Belgium, April 12 – 16, 2010
9. SPIE Optics and Photonics, San Diego, California, USA, August 21-25, 2011

10. Physics of Quantum Electronics, Snowbird, Utah, USA, January 2-7, 2012
11. CLEO/QELS 2012, San Jose, CA, USA, May 6-11, 2012
12. OSA meeting, Integrated Photonics Research (IPR), Colorado Springs, Colorado, USA, June 17-22, 2012
13. 6th Congress on Advanced Electromagnetic Materials in Microwaves and Optics: Metamaterials 2012, St. Petersburg, Russia, September 17-22, 2012
14. 4th International Topical Meeting on Nanophotonics and Metamaterials (NANOMETA 2013), Seefeld, Austria, January 2-6, 2013
15. CLEO/QELS 2013, San Jose, CA, USA, June 9-14, 2013 – session chair
16. 7th International Congress on Advanced Electromagnetic Materials in Microwaves and Optics – Metamaterials 2013, Bordeaux, France, September 16-21, 2013
17. SPIE Optics and Photonics, San Diego, California, USA, August 16-21, 2014
18. 8th International Congress on Advanced Electromagnetic Materials in Microwaves and Optics – Metamaterials 2014, Copenhagen, Denmark, August 25-28, 2014
19. 5th International Topical Meeting on Nanophotonics and Metamaterial Conference (NANOMETA 2015), Seefeld (Tirol), Austria, 5-8 January, 2015 – **Breakthrough session chair**
20. Summer school on Complex Photonics, International School of Physics "Enrico Fermi", Como lake, Italy, July 12-18, 2015 – lectures chairing and discussion leader
21. 2015 OSA Frontiers in Optics/Laser Science Conference, San Jose, CA, October 18-22, 2015 – session chair
22. CLEO/QELS 2016, San Jose, CA, USA, June 5-10 – session chair
23. 2016 Gordon Research Conference on Nanophotonics and Plasmonics, Sunday River Resort, Newry, Maine, USA, July 9-14, 2016 – Discussion leader
24. CLEO/QELS 2017, San Jose, CA, USA, May 14-18, 2017 – session chair
25. The 8th International Conference on Surface Plasmon Photonics (SPP8), Taipei, Taiwan, May 22-26, 2017 – session chair
26. 13th Meditterrenian Workshop and Topical Meeting “Novel Optical Materials and Applications” NOMA2017, June 4-10, 2017 – session chair
27. SPIE Optics and Photonics, San Diego, California, USA, August 6-11, 2017 – session chair
28. Nanoplasm, Cetraro, Italy, June 10-16, 2018 – **Plenary session chair**
29. META 2018, the 8th International Conference on Metamaterials, Photonic Crystals and Plasmonics, Costa Diadema, June 24 - July 1, 2018 – session chair
30. IEEE RAPID Conference, Miramar Beach, FL, USA, 22-24 August 2018 – session chair, opening address
31. Novel Concepts in Photonics Research 2019 conference, Ein Gedi, Israel, February 10 – 15, 2019 – session chair
32. 14th Meditterrenian Workshop and Topical Meeting “Novel Optical Materials and Applications” NOMA2019, Cetraro, Italy, June 2-9, 2019 – session chair
33. “Topological Photonics and Beyond,” Tianjin, China, June 30 - July 3, 2019 – session chair
34. SPIE Optics and Photonics, San Diego, California, USA, August 11-16, 2019 – session chair
35. IEEE RAPID Conference, Miramar Beach, FL, USA, 19-21 August 2019 – session chair
36. The 13th International Congress on Artificial Materials for Novel Wave Phenomena (Metamaterials), Rome, Italy, September 16-21, 2019 – session chair
37. IEEE RAPID Conference, Miramar Beach, FL, USA, 18-20 August 2020 – session chair (virtual)

Committee Activities at Purdue:

- Birck Nanotechnology Center Internal Advisory Committee (2009)
- Birck Policy and Procedure Committee (2009)
- Graduate Admission Committee (2009-present)
- ECE Curriculum Committee (2010-2013)
- ECE Graduate Curriculum Committee (2013-2016)
- Search committee for faculty for Atomic and Molecular Optics area, Physics Department, member (2014)
- Search committee for faculty for “Quantum Photonics” Preeminent team, member (2014-2016)
- Search committee for faculty for Turner Professor of Engineering School of Materials Engineering and Electrical and Computer Engineering, member (2014-2015)
- Search committee for Chief Scientist & Executive Director of Discovery Park, member (2014-2015)
- Discovery Park Internal Strategy Advisory Board** member (2016-present)
- Engineering Advisory Council** member (Senior faculty representative) (2016-2019)
- Birck Nanotechnology Faculty Leadership Council** member (2017-present)
- Head of Search** committee for the Head of Bindley bioscience Center (2017-2018)
- Search committee for CSE faculty, ECE, member (2018-2019)

Search committee for Head of Department of ECE, member (2018-2019)
150th Anniversary cross-cutting committee, member (2018-2019)
Big Idea Challenge organizer, as part of Discovery Park Fellow activities
Purdue Galleries Advisory council (2019-present)

Other:

- **Workforce Development Lead**, the U.S. Department of Energy (DOE) Office of Science National Quantum Information Science Research Center, the Quantum Science Center (QSC) (10/01/2020 - present)
- Member of the Steering Committee of the Russian-speaking Academic Science Association (RASA)
- Member of the organizing committee for workshop of Russian and former Soviet Union scientists “On the way to Nanotechnological Revolution,” France, October 5-11, 2008

Recognitions, Honors, and Awards Received by Students:

- 2020 **SVC Foundation Scholarship**, Society of Vacuum Coaters (\$5,000) (Xiaohui Xu)
- 2019 **Society of Vacuum Coaters Foundation (SVC Foundation) travel scholarship** (Sarah Choudhury)
- 2019 2019 SPIE Optics and Photonics Education Scholarship (Soham Saha)
- 2019 2019 COE **Outstanding Graduate Student Research Award**, College of Engineering, Purdue University (Krishnakali Chaudhuri)
- 2018 **Outstanding Poster Presentation Award**, OSA Optical Material Studies Technical Group, CLEO 2018 (Shaimaa Azzam)
- 2018 Best Poster Award in **Gordon Research Conference** on Lasers in Micro, Nano and Bio Systems (Shaimaa Azzam)
- 2018 **Society of Vacuum Coaters Foundation (the SVC Foundation) scholarship**, the Bernard Henry Fund of SVCF (Deesha Shah)
- 2018 **SPIE Optics and Photonics Education Scholarship** (Oksana Makarova)
- 2018 Purdue Office of Undergraduate Research Scholarship (Oksana Makarova)
- 2018 University of Waterloo travel grant, Undergraduate School on Experimental Quantum Information Processing (Oksana Makarova)
- 2017 **Chorafas Foundation Award for Outstanding PhD Dissertation** (Justus Ndukaife)
- 2017 **Society of Vacuum Coaters Foundation (the SVC Foundation) scholarship**, the Bernard Henry Fund of SVCF (Soham Saha)
- 2016 Elected **Gordon Research Seminars** co-chair, GRS 2018 (Justus Ndukaife)
- 2016 **Gordon Research Conference** Emerging Topic Talk (Selected One out of all participants), GRC on Plasmonics and Nanophotonic, 2016 (Justus Ndukaife)
- 2016 Selected to give an invited talk at the 2016 **Gordon Research Seminar** (GRS) on Plasmonics and Nanophotonics (Justus Ndukaife)
- 2016 **Outstanding Graduate Student Research Award**, College of Engineering, Purdue University (Justus Ndukaife)
- 2015 **'Best Poster'** award for “Hybrid Electrothermoplasmonic Nanotweezer,” NSF student poster competition, ASME 2015 International Mechanical Engineering Congress, Houston, Texas, USA, November 17-19, 2015 (Justus Ndukaife)
- 2015 Symposium Chair Assistant, MRS Fall meeting (Justus Ndukaife)
- 2015 SPIE Active Photonics **Best Student Paper Award**, SPIE Optics and Photonics conference, August 9-13, 2015, San Diego, CA, USA (Nathaniel Kinsey)
- 2015 Engineering Travel Grant to attend 2015 IEEE Photonics Society Summer Topicals meeting, College of Engineering, Purdue University (Nathaniel Kinsey)
- 2015 **Outstanding Graduate Student Research Award**, College of Engineering, Purdue University (Nathaniel Kinsey)
- 2015 Symposium Chair Assistant, MRS Spring meeting, Session Chair for Symposium V: Resonant Optics - Fundamentals and Applications (Jongbum Kim)
- 2015 **Bilsland Fellowship**, Purdue University graduate school (Nathaniel Kinsey)
- 2014 **Golden Torch Award** by the National Society of Black Engineers (Justus Ndukaife)
- 2014 SPIE travel grant, SPIE Optics and Photonics, San Diego, CA, August 16-21, 2014 (Naresh Emani)
- 2013 **IEEE** Photonics Society (IPS) **2013 Graduate Student Fellowship** (Gururaj Naik)
- 2013 **Outstanding Graduate Student Research Award**, College of Engineering, Purdue University (Gururaj Naik)

Media Interviews and Other Coverage:

1. "8 Forskerhistorier 2006", Danish Research Council for Technology and Production Sciences report (2006) (*highlighting 8 granted research projects every year*)
2. "Superlinse kan spare medicinforbrug", **Ingeniøren** (2007) (*major Danish engineering Newspaper*)
3. Danish Agency for Science, Technology and Innovation press-release (2007) (*highlighting only 2 research projects out of all granted in 2007 in Denmark*)
4. Articles in major Danish newspapers: "Spåkonen og superlinsen", Politiken; "Forgylt nanoforsker udvikler superlenser", Børsen; "Forskerkarrieren har mest at byde på", **Ingeniøren** (2008)
5. "Nobelprisvindere forventer flere store gennembrud i fysik", Danish scientific news media **Videnskab.dk** on Lindau Nobel meeting and Danish participants (07-21-2008)
6. In "News and Highlights", **Laser & Photonics Reviews** 3, 4, A31-A32 (2009)
7. P. West, S. Ishii, G. Naik, N. Emani and A. Boltasseva, "Identifying low-loss plasmonic materials", SPIE Newsroom (2010-10-10), DOI: 10.1117/2.1201009.003167; Featured article on **MaterialsViews.com** (10-21-2010)
8. Numerous Science blogs: sciencedaily.com, scienceblog.com, nextbigfuture.com and others (2011) (*on Science Perspective paper on New Plasmonic Materials*)
9. A. Boltasseva and H. Atwater, "New materials could turn near-fantastic devices like invisibility cloaks and hyperlenses into reality", **2Physics** (02-27-2011)
10. R. Won, "In search of new materials", in News and Views, **Nature Photonics** 5, 139-140 (2011), DOI: 10.1038/nphoton.2011.30
11. M. May, "Magnifying biology with metamaterials", **BioOptics World** (11-10-2011)
12. G. Naik and A. Boltasseva, "Plasmonics and metamaterials: looking beyond gold and silver", **SPIE Newsroom** (2012-01-30), DOI:10.1117/2.1201201.004077
13. "Researchers Discover a New Path for Light Through Metal: Novel Plasmonic Material May Merge Photonic and Electronic Technologies", **OSA press-release** (03-27-2012) and numerous science blogs (03-2012) (*on Optical Materials Express 2, 478-489 (2012) paper*)
14. K. Krieger, "Metamaterials step into the light", **IEEE Spectrum** (04-2012) (*on Invited talk at APS March meeting 2012*)
15. G. Naik and A. Boltasseva, "Near-infrared metamaterials go beyond metals", **2Physics** (06-2012)
16. IEEE Photonics Society News featuring 2013 Young Investigator Award recipient: Alexandra Boltasseva, **IEEE Photonics Society News journal** (02-2013)
17. Interview on **MRS TV** 2013 Spring Meeting in connection with the 2013 Outstanding Young Investigator Award, http://www.websedge.com/videos/mrs_tv_2013_spring_meeting (04-2013)
18. S. Karlin, "Alexandra Boltasseva: A Rising Star – Creating new materials to manipulate light," profile contribution, **IEEE Photonics Spectrum** (6 December 2013)
19. N. Kinsey, M. Ferrera, V. Shalaev, A. Boltasseva, "A platform for practical plasmonics," **SPIE Newsroom** (2014-05-08), DOI: 10.1117/2.1201404.005462
20. **Wiles Magazine's** annual **Hot List of female engineers** featuring Alexandra Boltasseva (August 21, 2014)
21. Alexandra Boltasseva, Garbi Schmidt, Vi er for ringe til at fastholde højtuddannede udlændinge i landet, Politiken, 2014
22. Featured in **SPIE Women in Optics** Planner, 18-months calendar-planner distributed in more than 25 countries (2015)
23. Y. Tsuboi, "Plasmonic optical tweezers: A long arm and a tight grip," News and Views, Nature Nanotechnology 11, 5-6 (November 02, 2015) (*on our Nature Nanotechnology paper on electrothermoplasmonic nanotweezer*)
24. "Where now for plasmonics?" Nature Nanotechnology 11, 1 (2016) (*on our Faraday Discussions paper "Plasmonics on the slope of enlightenment: the role of transition metal nitrides"*)
25. Alexandra Boltasseva interview featured on **OSA 100** stories, http://www.osa.org/en-us/100/osa_stories/
26. "Catching and controlling light rays," Fireside chat, Discovery Park Open House and Convergence Conference, September 23, 2016
27. Alexandra Boltasseva, "Discovering new plasmonic materials," Interview, 9 January 2017, **SPIE Newsroom**. DOI: 10.1117/2.3201701.02 1.
28. "Complex Refractory Plasmonic Designs," by Advanced Science News (April 16, 2017) on our work published in Advanced Optical Materials <http://www.advancedsciencenews.com/complex-refractory-plasmonic-designs/>
29. Interview with International Business Times, "Beyond Graphene: New Nanomaterials For Solar Energy, Computers, Curing Cancer And A Lot More," by Himanshu Goenka, <http://www.ibtimes.com/beyond-graphene-new-nanomaterials-solar-energy-computers-curing-cancer-lot-more-2565725> (July 14, 2017)
30. "Faces of Photonics" social media campaign by **SPIE** www.instagram.com/explore/tags/facesofphotonics/ (August 2017)

31. Purdue-in-the-know TED talk, Purdue Homecoming (September 2017)
32. A. Boltasseva, J. Hu, New Journal prize to recognize the best paper from an emerging researcher, *Optical Materials Express* 8 (6), 1695-1695 (June 1, 2018)
33. **2018 Blavatnik Science Symposium**, The New York Academy of Science (July 16-17, 2018) LIVE interview <https://www.facebook.com/blavatnikawards/videos/1087987621355886/>
34. Featured in The New York Academy of Sciences (NYAS) **Ask Me Anything** (AMA) online program (October 2018)
35. Interview for **Materials Zone** | Distributed Scientific Research: www.materials.zone https://www.youtube.com/watch?time_continue=6&v=cUKhY_HoMAM
36. "Single NV centers produce 30 million photons per second at room temperature," **Optics and Photonics News** (December 2018)
37. A. Boltasseva, "Overcoming Doubts with Help from Advisors and Role Models," The New York Academy of Sciences NYAS.org, published February 01, 2019
38. A. Boltasseva, "Machine-Learning-Assisted Photonics," The New York Academy of Sciences webinar, May 22, 2020

Invited Seminars:

- Optical Society of America, Webinar, January 27, 2021
- Mid-infrared Discussions (MIDI), a weekly webinar series, University of Southampton, November 5, 2020 - Prof. S. De Liberato and Prof. S. Maier
- The New York Academy of Sciences webinar, October 6-7, 2020 (online)
- University of Oklahoma, October 19, 2019 – Prof. T. Diaz de la Rubia
- Joing Quantum Seminar, Harvard University, November 20, 2019 – Prof. E. Hu and Prof. M. Lukin
- Indiana University Purdue University Indianapolis (IUPUI), November 15, 2019 – Prof. Chair A. D. Gavrin
- Case Western University, October 31, 2019 – Prof. G. Strangi
- Stanford, May 2019 – Prof. J. Fan
- Materials Science Seminar, MIT, April 2019
- GE Global Research, June 2018 – Dr. L. Tsakalakos
- The 2nd George Stegeman Symposium, College of Optics and Photonics/CREOL, March 12-13, 2018, Orlando, Florida – Profs D. Christodoulides, R. Stegeman, D. Hagan
- The Princeton Institute for the Science and Technology of Materials (PRISM) and the Princeton Center for Complex Materials (PCCM) Seminar Series, Princeton University (February 2018) – Prof. N. de Leon
- Northwestern University (February 2018) – Profs. N. Stern, A. Tchekhovskoy
- University of Maryland (February 2018) – Prof. M. Leite
- Argonne National Laboratory, Center for Nanoscale Materials (January 2018) – Dr. G. Wiederrecht
- Siberian Federal University, Institute of Physics, Russia (July 2017) – Prof. A. Vyunishhev
- Hebrew University, Jerusalem, Israel (June 2017) – Prof. U. Levy
- DTU Nanotech, Technical University of Denmark, invited seminar (April 2017) – Prof. A. Kristensen
- Collaborative Research Center "Hybrid Inorganic/Organic Systems for Opto-Electronics (HIOS)" invited seminar, Berlin (January 2017) – Prof. O. Benson
- Technical University of Denmark, Center for Nanostructured Graphene, Denmark (May 2016) – Prof. A. N. Mortensen
- ICFO, The Institute of Photonic Sciences, Barcelona, Spain (May 2016) – Prof. J. Garcia de Abajo & F. Koppens
- Niels Bohr Institute, University of Copenhagen, Denmark (March 2016) – Prof. P. Lodahl
- Heriot-Watt University, Scotland, UK (March 2016) – Prof. M. Ferrera
- Technical University of Denmark, DTU Fotonik, Denmark (March 2016) – Prof. A. Lavrinenko
- University of Southampton, Optoelectronics Research Centre retreat (March 2016) – Prof. N. Zheludev
- Joint Quantum Sciences Seminar, Harvard Quantum Optics Center (HQOC) and Institute for Theoretical Atomic Molecular and Optical Physics (ITAMP), Harvard-Smithsonian Center for Astrophysics (February 2016) – Prof. M. Lukin
- Data Storage Institute, A*STAR, Singapore (December 2015) – Prof. A. Kuznetsov
- National University of Singapore (December 2015) – Prof. V. Venkatesan
- University of Southern Denmark (June 2015) – Prof. S. Bozhevolnyi
- Applied Physics Department, Yale University (January 2015) – Prof. H. Cao
- Institute for Nanoscale Science and Engineering, Vanderbilt University (January 2015) – Prof. R. F. Haglund
- Indiana University-Purdue University Indianapolis (January 2015) – Prof. G. Vemuri

- Kazan Federal University, Russia (June 2014) – Prof. S. Kharintsev
- Krasnoyarsk Institute of Physics, Russia (June 2014) – Prof. V. Zyryanov
- UCLA (June 2014) – Prof. M. Jarrahi
- Northwestern University (April 2014) – Prof. K. Aydin
- Technion-Israel Institute of Technology, Haifa, Israel (October 2013) – Prof. M. Segev
- University of California, Berkeley, CA, USA (June 2013) – Prof. X. Zhang
- Kirensky Institute of Physics, Krasnoyarsk, Russia (February 2013) – Prof. V. Zyryanov
- Moscow Institute of Physics and Technology, Moscow, Russia (February 2013) – Dr. Y. Alasheev
- Russian Quantum Center, Moscow, Russia (February 2013) – Dr. A. Akimov
- Lebedev Physical Institute, Russian Academy of Sciences, Moscow, Russia (February 2013) – Dr. A. Akimov
- Geballe Laboratory for Advanced Materials, Stanford student OSA/SPIE chapter, Stanford University (February 2013) – Prof. M. Brongersma, Mr. F. Afshinmanesh
- ECE Silicon Valley Symposium, School of Electrical and Computer Engineering, Purdue (February 2013) – Prof. and Head of ECE, V. Balakrishnan
- ECE Advisory Board Meeting, School of Electrical and Computer Engineering, Purdue (October 2012) – Prof. and Head of ECE, V. Balakrishnan
- Technical University of Denmark, Denmark (April 2012) - Prof. A. Lavrinenko
- Condensed Matter Seminar, Physics Department, Purdue University (March 2012) - Prof. Y. Chen
- Instrument Technology Research Center and National Taiwan University, Taiwan (December 2010) - Prof. Din Ping Tsai
- Imenau University, Institute of Micro and Nanotechnology, Germany (June 2010) – Prof. Thomas Klar
- Harvard University, Applied Physics Colloquium, USA (March 2010) – Prof. Eric Mazur
- Moscow Institute of Physics and Technology, Moscow, Russia (October 2009) – Prof. Vladimir Lebedev, Prof. Mikhail Trunin
- Institut für Physik, Humboldt-Universität zu Berlin, Berlin, Germany (May 2009) – Prof. Dr. Oliver Benson
- SAOT Erlangen Graduate School in Advanced Optical Technology, Erlangen, Germany (November 2008) – Prof. Dr. Alfred Leipertz
- Institute of Optics, Information and Photonics (Max Planck Research Group), University of Erlangen-Nuremberg, Germany (June 2008) – Prof. Dr. Gerd Leuchs
- Tyndall Photonics Seminar, Cork, Ireland (April 2008) - Dr. Tomasz J. Ochalski
- Nano•DTU, DTU, Denmark (November 2007) – Prof. Jesper Mørk
- Ecole Supérieur de Physique et de Chimie Industrielles, Paris, France (July 2007) – Dr. Samuel Gresillon
- University of Iceland, Reykjavík, Iceland (November 2006) – Prof. Kristjan Leosson
- Max-Planck Institute for Polymer Research, Mainz, Germany (June 2005) – Prof. Dr. Wolfgang Knoll

Conferences with Invited Talks and Invited Lectures:

- 2021 Metamaterials Congress, New York, USA, August 2-7, 2021 - **PLENARY** Talk
- 2021 SPIE Optics & Photonics symposium, San Diego, USA, August 2-5, 2021 – Invited talk
- The 6th International Conference on Quantum Technologies (ICQT-2021), Moscow, Russia, July 2021 – Invited talk
- META 2020/2021, the 11th International Conference on Metamaterials, Photonic Crystals and Plasmonics, Warsaw, Poland, July 20-23, 2021 – Invited talk - postponed from 2020 to 2021
- MRS Spring meeting 2021 – Invited talk
- SPIE Photonics West, San Francisco, CA, March 6-11, 2021 – Invited talk
- The 51th Winter Colloquium on the Physics of Quantum Electronics (PQE), Snowbird, Utah, USA, January 5-9, 2021 – **PLENARY** talk, session organizer - postponed to 2022
- Russian American Science Association (RASA-America) and RASA Global conference, December 5-6, 2020 – Invited talk (online)
- The 67th Annual AVS International Symposium and Exhibition (AVS 67), Denver, CO, October 25-30, 2020 – Invited talk - postponed to 2021
- Asia Communications and Photonics Communications (ACP 2020), October 24-27, 2020, Beijing, China – Invited talk (online)
- The 14th International Congress on Artificial Materials for Novel Wave Phenomena, New York, USA, September 28 - October 1, 2020 – Invited Talk (online)
- International Summer School on Nonlinear Optics, August 25-27, 2020, Novosibirsk State University, Novosibirsk – Invited lecture (online)

- IEEE RAPID Conference, Miramar Beach, FL, USA, 10-12 August 2020 – **PLENARY** talk (online)
- Metamaterials 3.0 workshop, Cetraro, Calabria, Italy, August 27-29, 2020 – Invited Talk - postponed to 2021
- NanoPlasm, Cetraro, Italy, June 14-19, 2020 – Invited talk - postponed to 2021
- Photonics North 2020, May 26-28, 2020, Niagara Falls – **KEYNOTE** talk (online conference)
- MRS Spring meeting, Phoenix, AZ, USA, April 13-17, 2020 – Invited talk (online conference, Fall 2020)
- Optical Society of America (OSA) Incubator on Flat Optics: Recent Advances and Future Opportunities, February 26-28, 2020 – Invited talk
- The 50th Winter Colloquium on the Physics of Quantum Electronics (PQE), Snowbird, Utah, USA, January 6-11, 2020 – Invited talk
- The International Symposium on Plasmonics and Nanophotonics iSPN, Japan, November 11-14, 2019 – **KEYNOTE** talk
- USA-Middle East Science symposium, New York City, USA, November 4-6, 2019 – Invited talk
- Northrop Grumman University Research Symposium, Anaheim, CA, USA, October 23-24, 2019 – Invited talk
- Corning Optics Summit, Corning, NY, USA, October 21, 2019 – Invited talk
- The 13th International Congress on Artificial Materials for Novel Wave Phenomena, Rome, Italy, September 16-21, 2019 – Invited Talk
- IEEE RAPID Conference, Miramar Beach, FL, USA, 19-21 August 2019 – Invited talk, Opening Address
- SPIE Optics & Photonics symposium, San Diego, USA, August 11-15, 2019 – Invited Talk
- SPIE Optics & Photonics symposium, San Diego, USA, August 11-15, 2019 – **KEYNOTE** Talk
- "Novel Optical Materials and Applications" (NOMA) Conference, OSA Advanced Photonics Congress, San Francisco, CA, from 29 July – 1 August, 2019 – **TUTORIAL**
- "Novel Optical Materials and Applications" (NOMA) Conference, OSA Advanced Photonics Congress, San Francisco, CA, from 29 July – 1 August, 2019 – Invited Talk
- The 10th International Conference on Metamaterials, Photonic Crystals and Plasmonics (META 2019), Lissboa, Portugal, July 23-26, 2019 – **PLENARY** talk
- The 5th International Conference on Quantum Technologies (ICQT-2019), Moscow, Russia, July 15-19, 2019 – Invited talk
- "Topological Photonics and Beyond," Tianjin, China, June 30 - July 3, 2019 – Invited talk
- Second International Workshop "Tailor-Made Multiscale Material Systems," Hamburg, Germany, June 19-21, 2019 – Invited talk
- Artificial Intelligence in Nanophotonics workshop, International Work-Conference on Artificial Neural Networks (IWANN2019), Gran Canaria, Canary Islands, Spain, June 12-14, 2019 – Invited talk
- 14th Mediterrenian Workshop and Topical Meeting "Novel Optical Materials and Applications" NOMA2019, Cetraro, Italy, June 2-9, 2019 – Invited Talk
- The 9th International Conference on Surface Plasmon Photonics (SPP9), Copenhagen, Denmark, May 26-31, 2019 – Invited talk
- Electronic Materials Symposium, Stanford University, May 10th 2019 – Invited talk
- Faraday Discussion meeting, the Royal Society of Chemistry, Burlington House, Piccadilly, London, UK, 18-20 February, 2019 – Invited talk
- SPIE Photonics West, San Fransisco, CA, USA, February 2-7, 2019 – two Invited Talks
- The 49th Winter Colloquium on the Physics of Quantum Electronics (PQE), Snowbird, Utah, USA, January 6-11, 2019 – **PLENARY** talk
- 2018 MRS Fall Meeting, Boston, MA, USA, November 25-30, 2018 – Invited talk
- Micro and Nano engineering conference MNE 2018, Copenhagen, Denmark, September 25-27, 2018 - **PLENARY** talk
- OSA Frontiers in Optics & Laser Science, Washington DC, 16 - 20 September 2018 – Invited talk
- Photon 2018, Birmingham, United Kingdom, September 1-5, 2018 - **PLENARY** talk
- 12th International Congress on Engineered Material Platforms for Novel Wave Phenomena (Metamaterials 2018), Espoo, Finland, August 27-30, 2018 – invited talk
- IEEE RAPID Conference, Miramar Beach, FL, USA, 22-24 August 2018 – Opening Address
- 2018 SPIE Optics and Photonics, Plasmonics : Design, Materials, Fabrication, Characterization, and Applications XVI, San Diego, CA, USA, August 19-23, 2018 – **KEYNOTE** talk
- 2018 SPIE Optics and Photonics, Active Photonic Platforms X conference, San Diego, CA, USA, August 19-23, 2018 – **KEYNOTE** talk
- Gordon Research Conference on Plasmonics & Nanophotonics, Sunday River, Newry, Maine, USA, July 8-13 2018 – Invited talk

- META 2018, the 8th International Conference on Metamaterials, Photonic Crystals and Plasmonics, Costa Diadema, June 24 - July 1, 2018 – Invited talk, **KEYNOTE** talk
- Nanoplasm, Cetraro, Italy, June 10-16, 2018 – **PLENARY** talk
- “Waves in Complex Photonics Media: Fundamentals and Device Applications,” Anacapri, Island of Capri, Italy, June 4-7, 2018 – Invited talk
- Photonics West 2018, San Francisco, CA, USA, January 27 – February 1, 2018 – Invited talk
- Winter Colloquium on the Physics of Quantum Electronics (PQE), Snowbird, Utah, USA, January 7-12, 2018 – Invited talk
- 2017 MRS Fall meeting, Boston, MA, USA, November 26-December 1, 2017 – Invited talk
- American Vacuum Society (AVS) meeting, Tampa, FL, USA, October 2017 – Invited talk
- 11th International Congress on Engineered Material Platforms for Novel Wave Phenomena (METAMATERIALS'2017), Marseille, France, August 28–31, 2017 – Invited talk
- 2017 International Optical MEMS and Nanophotonics (OMN), Santa Fe, New Mexico, August 13-17, 2017 – Invited talk
- SPIE Optics and Photonics, San Diego, August 6-10, 2017 – 2 Invited talks
- Laser Physics Workshop (LPHYS'17), Kazan, Russia, July 17- 21, 2017 – Invited talk
- 4th International Conference on Quantum Technologies (ICQT-2017), Moscow, Russia, July 12-16, 2017 – Invited talk
- Photonics North 2017, Ottawa, Canada, June 6-8, 2017 – Invited talk
- 13th Meditterrenian Workshop and Topical Meeting “Novel Optical Materials and Applications” NOMA2017, June 4-10, 2017 – Invited talk
- The 8th International Conference on Surface Plasmon Photonics (SPP8), Taipei, Taiwan, May 22-26, 2017 – Invited talk
- 2017 Conference on Lasers and Electro-Optics (CLEO:2017), San Jose, CA, USA, May 14-19, 2017 – Invited talk
- American Chemical Society (ACS) Spring meeting, San Francisco, CA, USA, April 2-6, 2017 – Invited talk
- SPIE Photonics West, San Francisco, CA, USA, January 28 – February 2, 2017 – Invited talk
- 6th International Topical Meeting on Nanophotonics and Metamaterial Conference (NANOMETA 2017), Seefeld (Tirol), Austria, 4-7 January, 2017 – Invited talk
- Materials Research Society MRS Fall meeting, Boston, MA, USA, November 28-December 2, 2016 – Invited talk
- SPIE Optics and Photonics, San Diego, August 28-September 1, 2016 – **PLENARY** talk, 2 Invited talks
- META'16, the 7th International Conference on Metamaterials, Photonic Crystals and Plasmonics, Malaga, Spain, July 25-28, 2016 – Invited talk
- OSA Integrated Photonics Research conference, July 18-20, 2016, Vancouver (Canada) – Invited talk
- 13th International Conference on Nanosciences & Nanotechnologies – NN16, Thessaloniki, Greece, 5-8 July 2016 – **KEYNOTE** talk
- The International Symposium on Nano-Optics and Plasmonics, Hengyang, China, June 27-29, 2016 – Invited talk
- Nanoplasm conference, Cetraro, Italy, June 13-17, 2016 – Invited talk
- SPIE Photonics Europe, in Brussels, April 4-7, 2016 – 2 Invited talks
- 2016 MRS Spring meeting Phoenix, AZ, USA, March 28 – April 1, 2016 – Invited talk
- Winter Colloquium on the Physics of Quantum Electronics (PQE), Snowbird, Utah, USA, January 3-8, 2016 – Invited talk
- 2015 MRS Fall Meeting, November 29 - December 4, 2015, Boston, Massachusetts, USA – Invited talk
- Frontiers in Optics, San Jose, CA, USA, October 18-22, 2015 – Invited talk
- CECAM workshop on Computational plasmonics: an ab initio and multiscale perspective workshop, Lausanne, Switzerland, November 2-4, 2015 – Invited talk
- 2015 OSA Frontiers in Optics/Laser Science Conference, San Jose, CA, October 18-22, 2015 – Invited talk
- **National Academy of Engineering (NAE) U.S. Frontiers of Engineering (FOE) Symposium**, September 9-11, 2015, National Academies' Beckman Center in Irvine, California, USA – Invited speaker
- 9th International Congress on Advanced Electromagnetic Materials in Microwaves and Optics: Metamaterials 2015, Oxford, UK, September 7-12, 2015 – Invited talk
- SPIE Optics and Photonics Congress, Active Photonic Materials VII conference, San Diego, CA, USA, 9-13 August 2015 – Invited talk
- SPIE Optics and Photonics Congress, Plasmonics: Metallic Nanostructures and Their Optical Properties conference, San Diego, CA, USA, 9-13 August 2015 – Invited talk

- SPIE Optics and Photonics Congress, Metamaterials, Metadevices, and Metasystems conference, San Diego, CA, USA, 9-13 August 2015 – Invited talk
- META'15, the 6th International Conference on Metamaterials, Photonic Crystals and Plasmonics, City College of New York, New York City, NY, USA, August 4-7, 2015 – **KEYNOTE** talk
- 2015 IEEE Photonics Society Summer Topicals, "On-chip Optical Interconnects", July 13-15, 2015, British Colonial Hilton, Nassau, Bahamas – Invited talk
- Course on Complex Photonics, International School of Physics "Enrico Fermi", Como lake, Italy, July 12-18, 2015 – Invited lecturer
- Progress in Electromagnetics Research Symposium PIERS 2015, Special Session "SC3: Optical Properties of Resonant Dielectric and Plasmonic Nanostructures", Prague, Czech Republic, July 06-09, 2015 – Invited talk
- Progress in Electromagnetics Research Symposium PIERS 2015, Session " "Planar Optics based on Metasurfaces," Prague, Czech Republic, July 06-09, 2015 – Invited talk
- ETOPIIM 10, June 21 - 26, 2015, Neveh Ilan, Israel - Invited talk
- SPP7, Jerusalem, Israel, May 31 - June 5, 2015 – Invited talk
- E-MRS 2015 Spring Meeting, Lille, France, May 11-15, 2015 – Invited talk - cancelled
- 5th International Topical Meeting on Nanophotonics and Metamaterial Conference (NANOMETA 2015), Seefeld (Tirol), Austria, 5-8 January, 2015 – Invited talk, breakthrough session chair
- 8th International Congress on Advanced Electromagnetic Materials in Microwaves and Optics: Metamaterials 2014, Copenhagen, Denmark, August 25-28, 2014 – invited talk, sessions chair
- SPIE Optics and Photonics, Active Photonic Materials VI conference, San Diego, California, USA, August 17-21, 2014 – 3 Invited talks on different topics, session chair
- 2014 IEEE Summer Topical Meeting, "Functional Meta- and Two-Dimensional materials (FMTM)" symposium, Delta Montréal, Montreal, Canada, July 14-16, 2014 – Invited talk, *panel discussion* on Metamaterials
- 2014 Gordon Research Conference on Plasmonics, Sunday River Resort, Newry, Maine, USA, July 6-11, 2014 – Invited talk
- Nanoplasm 2014: "New frontiers in Plasmonics and Nano-optics," Cetraro, Italy, June 16-20, 2014 – Invited talk
- MRS Spring Meeting, San Francisco, California, USA, April 21-25, 2014 – Invited talk
- SPIE Photonics Europe, Brussels, Belgium, April 14-17, 2014 – Invited talk
- Workshop on Optical Plasmonic Materials, OSA Research in Optical Sciences Congress, Berlin, Germany, March 19 March, 2014 – Invited talk
- SPIE Photonics West, San Francisco, California, United States, February 1-6, 2014 – Invited talk
- The 44th Winter Colloquium on the Physics of Quantum Electronics (PQE), Snowbird, Utah, USA, January 5-9, 2014 – Invited talk
- 7th International Congress on Advanced Electromagnetic Materials in Microwaves and Optics – Metamaterials 2013, Bordeaux, France, September 16-21, 2013 – Invited talk, session chair
- Summer School on Plasmonics, University of Toronto, Toronto, Canada, August 26-30, 2013 – Invited lecturer
- Fundamental optical processes in semiconductors (FOPS)-2013, Kodiak Island, Alaska, USA, August 12-16, 2013 - Invited talk
- Frontiers of Nonlinear Physics (FNP'13), Nizhny Novgorod, Russia, July 28-August 2, 2013 – Invited talk
- International Conference on Materials for Advanced Technologies, ICMAT 2013, Singapore, June 30 - July 5, 2013 - Invited talk, co-chair of the symposium on "Plasmonics and Metamaterials"
- Materials Research Society (MRS) Spring meeting, San Francisco, CA, USA, April 1-5, 2013 - MRS Outstanding Young Investigator Award talk
- Meta'13, the 4th International Conference on Metamaterials, Photonic Crystals, and Plasmonics, Sharjah, UAE, March 18-22, 2013 – **KEYNOTE** talk
- SPIE Photonics West, San Francisco, CA, USA, February 2-7, 2013 – Invited talk
- 6th International Congress on Advanced Electromagnetic Materials in Microwaves and Optics: Metamaterials 2012, St. Petersburg, Russia, September 17-22, 2012 - **PLENARY** Talk
- SPIE Optics & Photonics, San Diego, California, USA, August 12-16, 2012 - Invited talk
- International School of Quantum Electronics, 52nd Course on Advances in Nanophotonics, Erice, Sicily, Italy, July 17-29, 2012 - Invited lecturer
- OSA meeting, Integrated Photonics Research (IPR), Colorado Springs, Colorado, USA, June 17-22, 2012 - Invited talk
- Gordon Conference on Plasmonics, Colby College, Waterville, Maine, USA, June 10-15, 2012 - Invited talk
- META'12, Paris, France, April 19-22, 2012 - Invited talk, Session chair

- International Workshop on Electromagnetic Metamaterials (IWEM-V), Albuquerque, New Mexico, USA, March 26-27, 2012 - Invited talk
- APS Meeting, Boston, MA, USA February 27- March 2, 2012 - Invited talk
- Physics of Quantum Electronics, Snowbird, Utah, USA, January 2-7, 2012
- 5th International Congress on Advanced Electromagnetic Materials in Microwaves and Optics: Metamaterials 2011, Barcelona, Spain, October 10-15, 2011 - Invited talk
- SPIE Optics and Photonics, San Diego, California, USA, August 21-25, 2011 - Invited talk
- Nanometa conference, Seefeld, Austria, January 3-7, 2011 - Invited talk
- 4th International Congress on Advanced Electromagnetic Materials in Microwaves and Optics: Metamaterials 2010, Karlsruhe, Germany, September 13-18, 2010 - Invited talk
- International Conference on Coherent and Nonlinear Optics (ICONO-2010), Kazan, Russia, August 23-27, 2010 - Member of program subcommittee, Invited talk
- SPIE Optics and Photonics: Plasmonics, San Diego, California, USA, August 1-5, 2010 - 2 invited talks
- 4th International Conference "Frontiers of Nonlinear Physics," Nizhny Novgorod, Russia, July 13-20, 2010 - Invited talk
- 19th International Laser Physics Workshop (LPHYS'10), Foz do Iguacu, Brazil, July 5 - 9, 2010 - Invited talk
- CIMTEC 2010, 12th International Conference on Modern Materials and Technologies, Symposium FM on Electromagnetic Metamaterials, Montecatini Terme, Tuscany, Italy, June 6-18, 2010 - Invited talk
- META'10, International Conference on Metamaterials, Photonic crystals and Plasmonics, "THz and Optical Plasmonic Waveguides and Antennas" session, Cairo, Egypt, February 22-25, 2010 - Invited talk
- Winter Colloquium on the Physics of Quantum Electronics (PQE), Snowbird, Utah, USA, January 3-7, 2010 - Invited talk
- 2009 Fall MRS Symposium, Boston, MA, USA, November 30 - December 4, 2009 - Invited talk
- 3rd International Congress on Advanced Electromagnetic Materials in Microwaves and Optics: Metamaterials 2009, London, UK, August 30-September 4, 2009 - Invited talk
- SPIE Optics and Photonics: Plasmonics, San Diego, California, USA, August 2-6, 2009 - Invited talk, Session chair
- International Laser Physics Workshop (LPHYS'09), Barcelona, Spain, July 13 - 17, 2009 - Invited talk
- International Conference on Materials for Advanced Technologies, ICMAT 2009, Singapore, June 28 - July 3, 2009 - Invited talk, Session chair, Member of the program committee
- Annual Meeting of Network for Women in Physics (Denmark, Sweden), Lyngby, Denmark, June 15, 2009 - Invited talk
- Metamorphose PhD school on "Fabrication and optical properties of nanostructured metamaterials," Rethymnon, Crete, Greece, June 12-13, 2009 - Invited lecturer
- ETOPIIM 8, Crete, Greece, June 7-12, 2009 - Invited talk
- 2009 MRS Spring Meeting, San Francisco, California, USA, April 13-17, 2009 - Invited talk
- 2009 IEEE/LEOS Winter Topical Meetings, Innsbruck, Austria, January 12 - 14, 2009 - Invited talk
- 2nd European Topical Meeting on Nanophotonics and Metamaterials (NANOMETA 2009), Seefeld, Austria, January 5-8, 2009 - Invited talk, Session chair
- 2nd Congress on Advanced Electromagnetic Materials in Microwaves and Optics: Metamaterials 2008, Pamplona, Spain, September 21-26, 2008 - Invited talk
- Photon08, Heriot-Watt University Campus, Edinburgh, UK, August 25-28, 2008 - Invited talk
- SPIE Optics and Photonics: Plasmonics, San Diego, California, USA, August 10-14, 2008 - Invited talk
- XIII International Conference "Laser Optics'2008," St. Petersburg, Russia, June 23 - 28, 2008 - Invited talk
- META'08 - the NATO Advanced Research Workshop: Metamaterials for Secure Information and Communication Technologies, Marrakesh, Morocco, May 7-10, 2008 - Invited talk
- Women in Photonics (WiP) School on Photonic Metamaterials, Paris, France, April 13-17, 2008 - Invited lecturer
- SPIE Photonics Europe, Strasbourg, France, April 7-11, 2008 - Invited talk
- SPIE Optics and Photonics: Photonic Metamaterials, San Diego, California, USA, August 26-30, 2007 - Invited talk
- 16th International Laser Physics Workshop, León, Mexico, August 20-24, 2007 - Invited talk
- International Conference on Coherent and Nonlinear Optics (ICONO 2007), Minsk, Belarus, May 28-June 1, 2007 - Invited talk
- CLEO/QELS and PhAST 2007, Baltimore, Maryland, USA, May 6-11, 2007 - Invited talk, Session chair
- 2006 SPIE Optics and Photonics, Plasmonics: Nanoimaging, Nanofabrication, and Their Applications II, San Diego, California, USA, August 13-17, 2006 - Invited talk, Session chair

Issued and Pending Patents and Patent Applications:

- G. Naik, B. Saha, T. D. Sands, A. Boltasseva, V. M. Shalaev, TIN/(AL,SC)N metal/dielectric superlattices for metamaterial applications in the visible range, provisional number 61/711,548, PCT/US2013/064057
- V. M. Shalaev, A. V. Kildishev, A. Boltasseva, N. Kinsey, M. Brongersma, Systems and Methods for the Advanced Control of Waveguiding Properties using Metasurfaces, provisional number 61/863,010
- V. M. Shalaev, A. V. Kildishev, A. Boltasseva, N. Kinsey, Methods to Enhance the Efficiency of Semiconductor Based Light Sources Using Metasurfaces, provisional number 61/862,999
- V. M. Shalaev, A. V. Kildishev, A. Boltasseva, N. Kinsey, Methods for Enhancing the Efficiency of Solar Cells using Metasurfaces, provisional number 61/862,995
- V. M. Shalaev, A. V. Kildishev, A. Boltasseva, G. V. Naik, U. Guler, W. Li, Ceramic Absorber, provisional number 61/876,241&61/934,786, PCT/US2014/04123
- V. M. Shalaev, A. V. Kildishev, A. Boltasseva, G. V. Naik, U. Guler, Titanium Nitride Plasmonic Nanoparticles for Clinical Therapeutic Applications, provisional number 61/831,218&61/883,764&61/934,758, PCT/US2014/039304
- V. M. Shalaev, A. Boltasseva, M. Brongersma, A. V. Kildishev, N. Kinsey, Solar-cell efficiency enhancement using metasurfaces, US Patent Application 20150040978 (Filed: August 7, 2014; Publication date: February 12, 2015)
- V. M. Shalaev, A. V. Kildishev, A. Boltasseva, G. V. Naik, U. Guler, D. Stocks, Near Field Transducer for Heat Assisted Magnetic Recording, **US Patent** 9343088 (Filed: May 19, 2014; Date of Patent: May 17, 2016)
- U. Guler, A. Kildishev, V. M. Shalaev, A. Boltasseva, G. Naik, Refractory Plasmonic Metamaterials Absorber and Emitter for Energy Harvesting, US Patent Application 20150288318, number 14/402343 (Filed: June 6, 2014; Publication date: October 8, 2015)
- S. T. Wereley, A. A. Nnanna, A. Boltasseva, J. C. Ndukaife, A. Mishra, Hybrid Device for On-Chip Concentration, Manipulation, Sorting and Sensing of Particles on A Plasmonic Substrate, **US Patent** 9443632 (Filed: June 6, 2015; Date of Patent: September 13, 2016)
- U. Guler, A. V. Kildishev, G. V. Naik, A. Boltasseva, V. M. Shalaev, Titanium Nitride Plasmonic Nanoparticles for Clinical Therapeutic Applications, Application number 14/896493, US Application number 20160120978 (Filed: May 23, 2014; Publication date: May 5, 2016)
- J. C. Ndukaife, A. Boltasseva, A. A. Nnanna, S. T. Wereley, A. Kildishev, V. M. Shalaev, System and method for manipulation of particles, **US Patent** 9778400 (Filed: June 15, 2016; Date of Patent: October 3, 2017)
- G. V. Naik, B. Saha, T. D. Sands, V. Shalaev, A. Boltasseva, Titanium nitride based metamaterial, **US patent** 9784888 (Filed: October 9, 2013; Date of Patent: October 10, 2017)
- U. Guler, A. Naldoni, A. Kildishev, A. Boltasseva, V. M. Shalaev, Plasmonic metal nitride and transparent conductive oxide nanostructures for plasmon assisted catalysis, US Patent Application 15/639,923, 2018/20180003865 (Filed: June 30, 2017; Publication date: January 4, 2018)
- A. Shaltout, S. Choudhury, A. V. Kildishev, A. Boltasseva, V. M. Shalaev, System for producing ultra-thin color phase hologram with metasurfaces, **US Patent** 9952557 (Filed: May 11, 2016; Date of Patent: April 24, 2018)
- A. Shaltout, S Choudhury, AV Kildishev, A Boltasseva, VM Shalaev, Ultra-thin color phase hologram with metasurfaces, US Patent Application 15/957,229 / 20180246467 (Filed: April 19, 2018; Publication date: August 30, 2018)
- J. C. Ndukaife, A. V. Kildishev, A. Nnanna, A. Boltasseva, Multi-site particle sensing system 15/174,990, **US Patent** 10436780 (Filed: June 6, 2016; Date of Patent: October 8, 2019)
- A. Dutta, V. M. Shalaev, A. Boltasseva, E. E. Marinero-Caceres, Surface-plasmon opto-magnetic field enhancement for all-optical magnetization switching, US Patent Application number 16399917/20190331598 (Filed: April 30, 2019; Publication date: October 31, 2019)
- A.V. Kildishev, U. Guler, K. Chaudhury, S. Azzam, E.E. Marinero, H. Reddy, A. Boltasseva, V.M. Shalaev, Metamaterial Device and Method of Making the Same, US Patent Application number 16411038/20180329115 (Filed: May 14, 2018; Publication date: November 15, 2018)
- J. C. Ndukaife, A. Boltasseva, A. G. Agwu Nnanna “System and method for sensing and trapping nanoparticles with plasmonic nanopores” **US Patent** 10508981 (Filed: January 15, 2019; Date of Patent: December 17, 2019)
- A. V. Kildishev, D. Wang, Z. A. Kudyshev, M. Song, A. Boltasseva, V. M. Shalaev, Tunable Plasmonic Color Device and Method of Making the Same, US Patent Application 20190353830 (Filed: May 13, 2019; Publication date: November 21, 2019)
- A. Naldoni, Z. A. Kudyshev, L. Mascaretti, S. P. Sarmah, S. Rej, J. P. Froning, O. Tomanec, j. Eun Yoo, D. Wang, S. Kment, T. Montini, P. Fornasiero, V. M. Shalaev, P. Schmuki, A. Boltasseva, R. Zbořil, Solar

Thermoplasmonic Nanofurnaces and Method for Making and Using Same, U.S. Provisional Application No. 62/843,058, filed on May 5, 2019

2019-NYGA-68517 Laser-induced Color Printing on Nanostructured Plasmonic Films, OPTICAL DEVICE, METHOD OF USING THE SAME, AND METHOD OF MAKING THE SAME

A. Dutta, V. M. Shalaev, A. Boltasseva, E. E. Marinero-Caceres, All-optical write/read scheme for magnetic nanostructures, U.S. Provisional Application No. 16990754, filed on November 26, 2020

Publication Summary:

Summary: 8 invited book chapters, **195** research papers in refereed journals. **Citations** (here and below according to *Google Scholar*): over **22,000** total citations, five papers with over 1000 citations, h-index **69**. According to Web of Science (WoS), 14 papers are **“Highly Cited in the Field”**, of which 10 are in the field of *physics* and 4 are in *materials science*. **NOTE:** *Papers marked as Highly Cited in the Field by (WoS) “are the top one percent in each of the 22 subject areas per year. Highly Cited Papers are considered to be indicators of scientific excellence and top performance and can be used to benchmark research performance against field baselines worldwide”* (from <http://ipscience-help.thomsonreuters.com/inCites2Live/indicatorsGroup/aboutHandbook/usingCitationIndicatorsWisely/highlyCitedPapers.html>) *To be selected as highly cited, the paper should receive enough citations to place it in the top 1% of the related broader academic field (ex. Physics/Material Science)*

Book Chapters:

[8] K. Chaudhuri, Z. Wang, M. Alhabeab, K. Maleski, Y. Gogotsi, V. Shalaev, A. Boltasseva, “Optical Properties of MXenes, Cahppter 17 in Eds: B. Anasori, Y. Gogotsi, “2D Metal Carbides and Nitrides (MXenes),” Springer Nature Switzerland AG 2019, 327-346, https://doi.org/10.1007/978-3-030-19026-2_17

[7] M. Y. Shalaginov, R. Chandrasekar, S. Bogdanov, Z. Wang, X. Meng, O. A. Makarova, A. Lagutchev, A. V. Kildishev, A. Boltasseva, V. M. Shalaev, "Hyperbolic Metamaterials for Single-Photon Sources and Nanolasers", chapter in the book "Quantum Plasmonics"; Eds: S. I. Bozhevolnyi, L. Martin-Moreno, F. J. Garcia-Vidal, Springer International Publishing, pp. 97-120 (2017)

[6] M. Y. Shalaginov, S. Bogdanov, V. V. Vorobyov, A. Lagutchev, A. V. Kildishev, A. V. Akimov, A. Boltasseva, V. M. Shalaev, “Enhancement of Single-Photon Sources with Metamaterials,” chapter 6, *From Atomic to Mesoscale: The Role of Quantum Coherence in Systems of Various Complexities*, eds. S. A. Malinovskaya and I. Novikova, World Scientific Publishing Co. PTE. LTD, ISBN-13: 978-9814678698, ISBN-10: 9814678694 pp. 123-148 (June 29 2015)

[5] J. Kim, G. V. Naik, N. Kinsey, A. Boltasseva, Alternative Plasmonic Materials, “Modern Plasmonics,” eds. A. A. Maradudin, J. R. Sambles, W. L. Barnes, Elsevier, Volume 4, Pages 189–221, doi:10.1016/B978-0-444-59526-3.00006-9, ISBN: 9780444595263 (2014)

[4] K. Leosson, M. C. Gather, P. G. Hermannsson, A. Boltasseva, Long-range surface plasmon polariton waveguides and devices, chapter in “Plasmonics and Plasmonic Metamaterials: Analysis and Applications,” Eds: G. Shvets and I. Tsukerman, World Scientific Publishing, Singapore, Hackensack, NJ, pp. 197-230 (2012)

[3] A. Boltasseva, Fabrication of optical metamaterials, chapter in “Tutorials in metamaterials,” Eds: M. A. Noginov and V. A. Podolskiy, Taylor & Francis Group, ISBN: (978)1420092189, pp. 29-58 (2011)

[2] A. Boltasseva, R. B. Nielsen, C. Jeppesen, A. Kristensen, R. Bakker, Z. Liu, H.-K. Yuan, A. V. Kildishev, and V. M. Shalaev, Fabricating plasmonic components for nano- and meta-photonics, chapter in “Metamaterials and Plasmonics: Fundamentals, Modelling, Applications,” NATO Science for Peace and Security Series – B: Physics and Biophysics; Eds: S. Zouhdi, A. Sihvola, A. P. Vinogradov, Springer, ISBN 978-1-4020-9406-4, pp. 209-222 (2009)

[1] A. Boltasseva and M. van der Poel, Brydninger, chapter in “Optiske Horisonter: en rejse på kommunikationsteknologiens vinger,” Eds: A. Bjarklev, J. Scheel, C. V. Smith, Technical University of Denmark, one2one A/S, ISBN 87-92062-01-6, pp. 11-25 (2007)

Serial Journal Articles:

[197] B. T. Diroll, S. Saha, V. M. Shalaev, A. Boltasseva, R. D. Schaller, “Broadband Ultrafast Dynamics of Refractory Metals: TiN and ZrN,” *Advanced Optical Materials*, in preparation (2020)

[196] S. I. Azzam, K. Chaudhuri, A. Lagutchev, Z. Jacob, Y. L. Kim, V. M. Shalaev, A. Boltasseva, A. V. Kildishev Single and Multi-Mode Directional Lasing from Arrays of Dielectric Nanoresonators, *Laser Photonics Reviews*, accepted (2021)

- [195] M. Song, D. Wang, Z. A. Kudyshev, Y. Xuan, Z. Wang, A. Boltasseva, V. M. Shalaev, A. V. Kildishev, "Enabling optical steganography, data storage, and encryption with plasmonic colors," *Laser Photonics Reviews*, accepted (2021)
- [194] Z. A. Kudyshev, V. M. Shalaev, A. Boltasseva, "Machine learning for integrated quantum photonics," *ASC Photonics* <https://doi.org/10.1021/acsp Photonics.0c00960> (published online 12/24/2020)
- [193] A. H. Chu, B. Beauchamp, D. Shah, A. Boltasseva, V. M. Shalaev, E. E. Marinero, "Hybrid magneto photonic material structure for plasmon assisted magnetic switching," *Optical Materials Express* 10 (12), 3107-3118, (December 1, 2020)
- [192] S. Saha, A. Dutta, C. DeVault, B. T. Diroll, R. D. Schaller, Z. Kudyshev, X. Xu, A. Kildishev, V. M. Shalaev, A. Boltasseva, "Extraordinarily Large Permittivity Modulation in Zinc Oxide for Dynamic Nanophotonics," *Materials Today* (published online 11/24/2020)
- [191] Z. A. Kudyshev, A. V. Kildishev, V. M. Shalaev, and A. Boltasseva, "Machine learning-assisted global optimization of photonic devices," *Nanophotonics* (2020) (published online October 28, 2020)
- [190] W. Ma, Z. Liu, Z. A. Kudyshev, A. Boltasseva, W. Cai, Y. Liu, "Deep learning for the design of photonic structures," *Nature Photonics*, 1-14 (2020) published online October 5, 2020
- [189] C.-C. Chiang, S. I. Bogdanov, O. A. Makarova, X. Xu, S. Saha, D. Shah, D. Wang, A. S. Lagutchev, A.V. Kildishev, A. Boltasseva, V. M. Shalaev, "Chip-compatible quantum plasmonic launcher," *Advanced Optical Materials* 8 (20) 2000889 (October 2020)
- [187] K. C. Maurya, V. M. Shalaev, A. Boltasseva, B. Saha, "Reduced Optical Losses in Refractory Plasmonic Titanium Nitride Thin Films Deposited with Molecular Beam Epitaxy," *Optical Materials Express* 10 (10) 2679-2692 (October 1, 2020)
- [186] Z. A. Kudyshev, S. I. Bogdanov, T. Isacson, A. V. Kildishev, A. Boltasseva, V. M. Shalaev, "Rapid Classification of Quantum Sources Enabled by Machine Learning," *Advanced Quantum Technologies* 3 (10) 2000067 (October 2020)
- [185] S. N. Chowdhury, P. Nyga, Z. A. Kudyshev, E. G. Bravo, A. S. Lagutchev, A. V. Kildishev, V. M. Shalaev, A. Boltasseva, "Lithography-free plasmonic color printing with femtosecond laser on semicontinuous silver films," *ACS Photonics* (published online September 8, 2020)
- [184] Z. Wang, S. I. Azzam, X. Meng, M. Alhabeab, K. Chaudhuri, K. Maleski, Y. L. Kim, A. V. Kildishev, V. M. Shalaev, Y. Gogotsi, A. Boltasseva, "Dynamically controlled random lasing with colloidal titanium carbide MXene," *Optical Materials Express* 10 (9) 2304-2321 (September 1, 2020)
- [183] M. Y. Shalaginov, S. I. Bogdanov, A. S. Lagutchev, A. V. Kildishev, A. Boltasseva, V. M. Shalaev, "On-Chip Single-Layer Integration of Diamond Spins with Microwave and Plasmonic Channels," *ACS Photonics* 7 (8) 2018-2026 (July 20, 2020)
- [182] Z. A. Kudyshev, A. V. Kildishev, V. M. Shalaev, and A. Boltasseva, "Machine-Learning-Assisted Metasurface Design for High-Efficiency Thermal Emitter Optimization," *Applied Physics Reviews* 7(2) 021407 (2020) (*APR Featured Article*)
- [181] H. Reddy, K. Wang, Z. Kudyshev, L. Zhu, S. Yan, A. Vezzoli, S. J. Higgins, V. Gavini, A. Boltasseva, P. Reddy, V. M. Shalaev, E. Meyhofer, "Determining plasmonic hot-carrier energy distributions via single-molecule transport measurements," *Science* DOI: 10.1126/science.abb3457 (published online June 4, 2020)
- [180] M. Gioti, I. Arvanitidis, D. Christofilos, K. Chaudhuri, T. Zorba, G. Abadias, D. Gall, V. Shalaev, A. Boltasseva, P. Patsalas, "Plasmonic and Phononic Properties of Epitaxial Conductive Transition Metal Nitrides," *Journal of Optics* (published in "Accepted manuscripts" on May 29, 2020)
- [179] S.I. Bogdanov, O.A. Makarova, X. Xu, A.S. Lagutchev, D. Shah, A.S. Baburin, I.A. Ryzhikov, I.A. Rodionov, S.I. Bozhevolnyi, A.V. Kildishev, A. Boltasseva, V.M. Shalaev and J. B. Khurgin, "Ultrafast quantum photonics enabled by coupling plasmonic nanocavities to strongly radiative antennas," *Optica* 7(5) 463-469 (May 20, 2020)
- [178] X. Xu, A. Dutta, J. Khurgin, A. Wei, V. M. Shalaev, A. Boltasseva, "Plasmonic Photosensitizers: TiN@TiO₂ Core-Shell Nanoparticles as Plasmon-Enhanced Photosensitizers: The Role of Hot Electron Injection," *Laser & Photonics Reviews* 14(5) 1900376 (May 2020)
- [177] Al. Naldoni, Z. A. Kudyshev, L. Mascaretti, S. P. Sarmah, S. Rej, J. P. Froning, O. Tomanec, J. E. Yoo, D. Wang, S. Kment, T. Montini, P. Fornasiero, V. M. Shalaev, P. Schmuki, A. Boltasseva, R. Zbořil, "Solar thermoplasmonic nanofurnace for high temperature heterogeneous catalysis," *Nano Letters* 20(5) 3663-3672 (April 22, 2020)

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Conference Presentations, Abstracts and Other Contributions:

(*) Invited **(P)** Plenary **(K)** Keynote **(T)** Tutorial

- [] **(P)** The 51th Winter Colloquium on the Physics of Quantum Electronics (PQE), Snowbird, Utah, USA, January 5-9, 2021 – postponed to 2022
- [] (*) A. Boltasseva, "Machine-Learning-Assisted Photonics," The 67th Annual AVS International Symposium and Exhibition (AVS 67), Denver, CO, October 25-30, 2020 – moved to 2021
- [] (*) A. Boltasseva, "TBA," Metamaterials 3.0 workshop, Cetraro, Italy, August 27-29, 2020 – moved to 2021
- [] (*) A. Boltasseva, "TBA," META 2020, the 11th International Conference on Metamaterials, Photonic Crystals and Plasmonics, Warsaw, Poland, July 20-23, 2020 – moved to 2021
- [] (*) A. Boltasseva, "TBA," NanoPlasm, Cetraro, Italy, June 12-19, 2020 – moved to June 2021

- [426] (*) A. Boltasseva, "Machine learning for photonic design and quantum measurements," "Photonic and Phononic Properties of Engineered Nanostructures" conference, Optoelectronics 2021 Symposium, SPIE Photonics West, San Francisco, CA, March 6-11, 2021 (online)
- [425] (*) S. Saha, D. Shah, V. Shalaev, A. Boltasseva, "Plasmonic Material Platforms for Tunable Nanophotonic Devices," MRS Spring meeting, Phoenix, AZ, USA, April 13-17, 2020 - moved to MRS Fall meeting 2020 (online)
- [424] (*) A. Boltasseva, "Machine-Learning-Assisted Photonics," Asia Communications and Photonics Communications (ACP 2020), October 24-27, 2020, Beijing, China (online)
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- [420] **(P)** "Machine-Learning-Assisted Photonics," IEEE RAPID Conference, Miramar Beach, FL, USA, 10-12 August 2020 (online conference)
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- [31] (*) A. Boltasseva, K. Leosson, S. I. Bozhevolnyi, T. Søndergaard, K. B. Jørgensen, R. H. Pedersen, A. Kristensen, "Metal strips and wires as plasmonic waveguides for integrated-optics components," CLEO/QELS and PhAST 2007, QThG1, Baltimore, Maryland, USA, May 6-11, 2007
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- [23] (*) A. Boltasseva and S. I. Bozhevolnyi, "Wavelength selective components based on long-range surface plasmon polariton waveguides," SPIE Optics and Photonics 2006, Plasmonics: Nanoimaging, Nanofabrication, and Their Applications II, 6324-02, San Diego, California, USA, August 13-17, 2006
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- [18] A. Boltasseva and S. I. Bozhevolnyi, "Compact Bragg gratings for integrated optics utilizing long-range surface plasmon polaritons," Materials Research Society Fall Meeting Abstracts, p. 848, Nanoscale Optics and Photonics Based on Metals, Boston, MA, USA, November 27-30, 2005
- [17] A. Boltasseva, S. I. Bozhevolnyi, K. Leosson, "Photonic crystals for long-range surface plasmon polaritons," Workshop on Metamaterials for Microwave and Optical Technologies Abstracts, p. 57, San Sebastian, Spain, July 17-21, 2005
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- [10] (*) M. Kristensen, A. Boltasseva, P.I. Borel, L.H. Frandsen, M. Thorhauge and B. Tromborg, "Integrated photonic crystal waveguide technology in Europe," *ACOFT*, Sydney, Australia, July 2002
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- [7] T. Søndergaard, A. Bjarklev, A. Lavrinenko, B. Tromborg, J. Arentoft, M. Kristensen, and A. Boltasseva, "Theoretical analysis of finite-height planar photonic crystal waveguides," *International Workshop on Nonlinear Photonic Crystals Proceedings*, p. 28, Kgs. Lyngby, Denmark, October 2001
- [6] J. Arentoft, M. Kristensen, T. Søndergaard, A. Boltasseva, "Realization of robust photonic crystal waveguides designed to reduce out-of-plane scattering," *ECOC 2001*, Th.A.2.6, 592-593, Amsterdam, Netherlands, October 2001
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- [4] J. Arentoft, M. Kristensen, A. Boltasseva, T. Søndergaard, "Silica/silicon/silica crystal waveguides with 90 degrees bend," *Workshop on Photonic and Electromagnetic Crystal Structures*, St. Andrews, Scotland, June 2001
- [3] A.E. Boltaseva, A.E. Drakin, A.P. Bogatov, "Experimental Study of the alpha-Factor in Strained Quantum-Well Semiconductor Lasers," *XLII scientific conference of Moscow Institute of Physics and Technology Proceedings*, 4, 41, Dolgoprudny, Russia, November 1999 (in Russian)
- [2] P. Bogatov, A. E. Boltaseva, A. E. Drakin, V. P. Konyaev, "Gain Spectrum and Amplitude-Phase Coefficient in InGaAs/AlGaAs/GaAs Strained Quantum-Well Semiconductor Lasers in 0.94-0.98 μm Wavelength Range," *3rd Belarussian-Russian Workshop "Semiconductor Lasers and Systems" Proceedings*, p. 22, Minsk, Belarussia, June 1999 (in Russian)
- [1] A.E. Drakin, A.P. Bogatov, A.E. Boltaseva, M.A. Belkin "Optical Gain and alpha-Factor in InGaAs/GaAs Semiconductor Laser," *XLI scientific conference of Moscow Institute of Physics and Technology Proceedings*, Dolgoprudny, Russia, November 1998 (in Russian)

Teaching and Supervising Experience:

Bachelor, Master's and PhD Students:

[1] Rasmus B. Nielsen	MS	Technical University of Denmark (2007)	co-advisor
[2] Kasper B. Joergensen	BS	University of Southern Denmark (2008)	co-advisor
[3] Maksim Zalkovskij	MS	DTU (2009)	co-advisor
[4] Claus Jeppesen	PhD	DTU (2011, now at DTU)	co-advisor
[5] Rasmus B. Nielsen	PhD	DTU (2010, now at ASML, Netherlands)	advisor
[6] Tiberiu Rosenzweig	PhD	University of Iceland (2010)	co-advisor
[7] Paul R. West	PhD	Purdue (2008-2014, now at Intel)	supervisor
[8] Gururaj V. Naik	PhD	Purdue (2009-2013, now Assist Prof at Rice)	advisor
[9] Naresh K. Emani	PhD	Purdue (2009-2014, now at DSI, Singapore)	advisor
[10] Jongbum Kim	PhD	Purdue (2009-2016, now at UMaryland)	advisor

[11] Nathaniel Kinsey	PhD	Purdue (2010-2016, now Assist Prof at VCU)	advisor
[12] Justus C. Ndukaife	PhD	Purdue (2011-2017, now Assist Prof at Vanderbilt)	advisor
[13] Zuoxian Wang	PhD	Purdue (2011-2018, now at ASML)	advisor
[14] Aveek Dutta	PhD	Purdue (in progress)	advisor
[15] Sajid M. Choudhury	PhD	Purdue (2014-2019, Assist Prof in BUET)	co-advisor
[16] Krishnakali Choudhury	PhD	Purdue (2014-2019, Intel)	advisor
[17] Soham Saha	PhD	Purdue (in progress)	co-advisor
[18] Sarah Chowdhury	PhD	Purdue (in progress)	advisor
[19] Xiaohui Xu	PhD	Purdue (in progress)	advisor
[20] Zach Martin	PhD	Purdue (in progress)	advisor

Undergraduate research projects at Purdue:

- Ogaga Odele (Fall 2012, Spring 2013)
- Ikuko Kitamura (Spring 2013, Spring 2014)
- Renju Liu (Fall 2013)
- Yugang Jing (Spring 2014, SURF program, summer 2014)
- Elizabeth Grubbs (Summer, Fall 2014)
- Carolina Aguilar (Summer 2017)
- Erin Shelton (Fall/Spring 2017)
- Fidel Galano (Fall 2017)
- Jihan Salsabila (Fall 2017)
- Scott Criswell (Fall/Spring 2017)
- Oksana Makarova (Fall 2015 – Spring 2019, DURi research grant)
- Jack Havey (Spring 2019)

Teaching at Purdue:

Person in charge:

ECE 414	Elements of Electro- and Fiber Optics, Purdue	(2009-present)
ECE 412	Introduction to Engineering Optics, Purdue	(2010-present)
ECE 395	Introduction to Nanotechnology	(Spring 2019)

Teaching outside Purdue:

- Three-week undergraduate research courses on Plasmonics and Nanofabrication, Technical University of Denmark (2003, 2004)
- Course on Nanophotonics for graduate students, Technical University of Denmark (¼ course, Spring 2007, 2008)
- Women in Photonics (WiP) School on Photonic Metamaterials, Paris, France, April 13-17, 2008 - Invited lecturer, 2-hours tutorial
- Metamorphose PhD school on “Fabrication and optical properties of nanostructured metamaterials,” Rethymnon, Crete, Greece, June 12-13, 2009 - Invited lecturer, 1.5-hour lecture
- Development and teaching of 1-week course on “Nanophotonics,” ECTS 2.5, Erlangen Master Program in advanced optical technologies (MAOT), Friedrich-Alexander-Universität Erlangen-Nürnberg (Fall 2009)
- 1-week course on “Nanophotonics,” ECTS 2.5, Erlangen Master Program in advanced optical technologies (MAOT), Friedrich-Alexander-Universität Erlangen-Nürnberg (Fall 2010)
- International School of Quantum Electronics, 52nd Course on Advances in Nanophotonics, Erice, Sicily, Italy, July 17-29, 2012 - Invited lecturer, 2-hours tutorial
- Summer School on Plasmonics, University of Toronto, Toronto, Canada, August 26-30, 2013 – Invited lecturer, 1.5-hour lecture
- Short course on nanophotonics in Kazan Federal University, Russia, June 2014 – invited lecturer, 6-hours of lectures
- School on Complex Photonics, International School of Physics "Enrico Fermi", Como lake, Italy, July 12-18, 2015 – invited lecturer, 3 hours of lectures
- International Summer School on Nonlinear Optics, August 25-27, 2020, Novosibirsk State University, Novosibirsk – 1-hour lecture (online)

Other:

Workforce Development Lead, the U.S. Department of Energy (DOE) Office of Science National Quantum Information Science Research Center, the Quantum Science Center (QSC) (10/01/2020 - present)
Effective College Teaching Workshop, Purdue University, October 2012
Graduate Faculty Mentoring Workshop, Purdue University, February 2009
Education in University Teaching (UDtU), Technical University of Denmark, diploma, 2007
"Mentoring of Experts" courses for young faculty on supervising graduate students, Technical University of Denmark, 2006

Diversity:

- Member of KIF, Network for Women in Physics in Denmark, NorWiP, Nordic Network for Women in Physics (since 2005)
- Participant in gender activity programs associated with The European FP6 Network of Excellence ePIXnet (2005-2006)
- Member of the organizing committee: 3rd Workshop of Nordic Network for Women in Physics (NorWiP), Lyngby, Denmark, August 16-17, 2007
- Member of Women in Engineering Program, Purdue (since 2008)
- Purdue Women in Engineering undergraduate mentoring program (Mentees & Mentors, M&M) panelist, Purdue, November 2012
- WISE - Women's Innovations in Science and Engineering panelist, Department of State's International Visitor Leadership Program, Purdue, March 31, 2014

Outreach:

- Participation in Nanophotonics Days, Open House arrangements and "Meet a Researcher" initiatives, Technical University of Denmark, 2006-2010
- Co-authored a book chapter for high-school teachers on Nanophotonics: A. Boltasseva and M. van der Poel, "Brydninger," chapter in Optiske Horisonter: en rejse på kommunikationsteknologiens vinger, eds. A. Bjarklev, J. Scheel, and C.V. Smith, Technical University of Denmark, one2one A/S, pp. 11-25, ISBN 87-92062-01-6, 2007
- Presentation of "Nanomaterials" subarea of "Microelectronics and Nanotechnology" area, ECE Open House, Purdue, March 2009
- NanoDays arrangements with demos on optics ("optics" table with demos on polarization, liquid crystals, diffraction patterns), Birck Nanotechnology Center Purdue University, 2009-2016
- Presentation of "Nanomaterials for Nanophotonics," ECE Open House, Purdue, April 2011
- YouTube video for lay audience explaining some of Prof. Boltasseva's research topics (metamaterials, super-resolution microscopes, invisibility cloaks, optical black holes) (<http://www.youtube.com/watch?v=Fr7PdJN5A8g>)
- Organization of "Nano for Energy" day with lectures and demos, Inaugural Purdue Energy Camp (PEC), Purdue, June 2012
- Participating in the organization of the Gifted Education Resource Institute (GERI) Summer Residential Camp: 1-day on nanophotonics with lessons and demos, Purdue, July 2012
- Organization of "Nanotechnology for Energy" lecture and demos, Purdue Energy Academi, Purdue, June 2013
- Research Goes to School, Discovery Learning Research Center program, lecturer, Purdue, June 2014
- "Catching and controlling light rays," Fireside chat, Discovery Park Open House and Convergence Conference, September, 2016
- Purdue-in-the-know TED talk, Purdue Homecoming, September 2017
- "Ask Me Anything" New York Academy of Science NYAS, October 2018
- Purdue Galleries Advisory council member, strengthening Engineering-Science-Art connections (2019-present)

Other Activities

- Volunteer, computer lab, Kindergarten class, Cumberland elementary school, West Lafayette IN (2016 - present)
- Member of the board of the Russian Society in Denmark (2005-2007)
- Member of the Russian Literature Seminar in Copenhagen 'Novyj Bereg' (literature magazine) (2005-2006)
- Member of the Russian National Physics Olympiad jury (1997)
- Member of the organizing committee of the Russian National Physics Olympiads (1997-2000). Experience in managing a team of 50-70 people and financial accounting

- Member of the undergraduate admissions committee, Department of General and Applied Physics, Moscow Institute of Physics and Technology (1997-2000)
- Member of the student theatre (Department of General and Applied Physics) STEM FOFP, actress (1996-2000)