

Alexandra Boltasseva
School of Electrical and Computer Engineering and Birck Nanotechnology Center
Purdue University

1205 West State Street, West Lafayette, Indiana, USA 47907-2057
+1 765 494 0301 (Phone) aeb@purdue.edu (e-mail)

Summary:

Prof. Boltasseva's team specializes in nanophotonics, optical materials and nanotechnology focusing on materials for plasmonics and nanophotonic technologies, nanoscale optics, plasmonics, optical metamaterials, nanolithography, nanofabrication and material growth. The central theme of Boltasseva's research is to find new ways for realization of plasmonic and nanophotonic devices - from material building blocks to advanced designs and demonstrations. Prof. Boltasseva's team aims at developing new technological 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 optics and optoelectronics, information processing, data recording/storage, nanoscale light manipulation, sensing, medical imaging and therapy, and energy conversion.

Education:

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

Professional Career:

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|---|-------------------|
| Professor of ECE, Purdue University | 08/2016 – present |
| Adjunct Lecturer, DTU Fotonik, Technical University of Denmark | 07/2016 - present |
| Associate Prof. (tenured) of ECE, Purdue University | 08/2013 - 07/2016 |
| Adjunct Associate Professor, DTU Fotonik, Technical University of Denmark | 10/2011 - 06/2016 |
| 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 at Micro Managed Photons A/S, Denmark | 2002 - 2004 |
| Research Assistant (M.S. research) at P. N. Lebedev Physical Institute of the Russian Academy of Sciences, Moscow, Russia | 1998-2000 |

Professional Recognitions, Honors, and Awards:

- 2015 SPIE - International Society for Optical Engineers Senior member
- 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 Institute of Electrical and Electronics Engineers (IEEE) Senior member
- 2015 **Fellow of the Optical Society of America (OSA)**
- 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 **Materials Research Society Board of Directors**
- 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 at All-Russian Physics Olympics, Russia (1993)

Research Grants and Contracts Received:

- [1] Principle 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, UMichigan), Center for Photonic and Multiscale Nanomaterials (C-PHOM), Materials Research Science and Engineering Center (MRSEC), NSF grant DMR-1120923, Boltasseva's part \$0.5M, 8/01/2011-07/30/2016
- [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 \$1.4M; Boltasseva's part \$0.5M (\$100,000/year), 01/01/2013-12/31/2016
- [13] co-PI (PI: M. Stockman, Georgia SU), Novel Nonlinear Optical Processes in Active, Random, and Nanostructured Systems, Office of Naval Research (ONR) Multidisciplinary University Research Initiative (MURI), total \$6M; Boltasseva's part \$0.9M (\$180,000/year), 07/01/2013-06/30/2018
- [14] PI, CMOS-Compatible Plasmonics for Hybrid Nanophotonic Circuits, Air Force Office of Scientific Research (AFOSR) grant (\$85,000/year), 06/01/2014 - 05/31/2017
- [15] co-PI (PI: F. Capasso, Harvard) Air Force Office of Scientific Research (AFOSR) MURI, "Active Metasurfaces for Advanced Wavefront Engineering and Waveguiding", total \$6M; Boltasseva's part \$160K/year, 07/01/2014 - 07/01/2019
- [16] PI, Enabling High-Temperature Photonics with Plasmonic Ceramics, National Science Foundation, total \$500,000, 10/01/2015-09/30/2018
- [17] PI, Office of the Vice President for Research (OVPR) Laboratory Equipment Program, Purdue University, \$37,349.35, 12/16/2015-06/01/2016

Professional Activities and Affiliations:

Professional Society activities and memberships:

MRS, Materials Research Society	participant, Congressional Visits Day, United States Congress , Washington, DC (October 2016)
MRS, Materials Research Society	member of the MRS Board of Directors (2014-pres) member (since 2005)
MRS, Materials Research Society	participant, Congressional Visits Day, United States Congress , Washington, DC (October 2014)
OSA, Optical Society of America	OSA Fellow (2015) member (since 2009), senior member (since 2011) member of the Member Advisory Network Student OSA chapter advisor (2014-2015), Purdue
IEEE, Institute of Electrical and Electronics Engineers	Senior member (2015)
SPIE, International Society for Optical Engineers	member (since 2008); Senior member (2015) Student SPIE chapter advisor (2014-2015), Purdue
DOPS, Danish Optical Society	member (2007-2009)
KIF, Network for Women in Physics in Denmark	member (2005-2010)
NorWiP, Nordic Network for Women in Physics	member (2005-2010)

Editorial:

Optical Materials Express	Editor-in-Chief (01/2016 - present)
Optical Materials Express	Guest Editor, focus issue "Plasmonics" (2015)
MRS Communications	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-present)
Advanced Optical Materials	Editorial advisory board member (2014-present)
Scientific Reports (Nature Publishing Group)	Editorial Board member, Topical Editor (2014-2016)
EDP (publisher of European Physics Journal and EPL)	Editorial Board member (2013-present)
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)

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

Referee for Funding Agencies: NSF panel on Photonic Devices, ECCS Division; Army Research Office; Estonian Science Foundation; General Research Fund Hong Kong, European Commission programs; referee for various European foundations, U. S. Department of Energy Office of Basic Energy Sciences (BES)

Reviewer: 2nd, 4th, 5th, 6th, 7th Congress on Advanced Electromagnetic Materials in Microwaves and Optics: Metamaterials (2008, 2010, 2011, 2012, 2013, 2015)

Awards and Prize Committees:

- Member of the evaluation committee for *RUSNANOPRIZE*, International nanotechnology prize, RUSNANO, Russia (2014)

- Member of the Jury committee (8 members in total), 2015 Prize for Research into the **Science of Light**, Quantum Electronics and Optics Division (QEOD), European Physical Society (EPS) (2014)

- Official Nominator for the **“Japan Prize”** (awarded to one scientist in each field, approx. US\$450,000), <http://www.japanprize.jp/en> (2015, 2016)

- Member of the Selection & Evaluation Committee for Marie Curie Co-funding of Regional, National and International Programmes (COFUND) program MULTIPLY

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. IEEE 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
32. Integrated Optics conference, SPIE Photonics West -program committee member

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
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 Beam Engineering with Structural Surfaces I, San Jose CA, June 5-10.

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-present)
 Search committee for faculty for AMO, Physics Department, member (2014)
 Search committee for faculty for “Quantum Photonics” preeminent team, member (2014, 2015)
 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)

Other:

- Member of the Coordination 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:

2016 **Gordon Research Seminars** organizer, 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 **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 medicinforsøg", **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; "Forgyldt nanoforsker udvikler superlinser", Børsen; "Forskerkarierreren 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 month 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"*)

Invited Seminars:

- Technical University of Denmark, DTU Fotonik, Denmark (May 2016) – Prof. A. N. Mortensen
- 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
- Ilmenau 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 Supérieure 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:

- SPIE Photonics West 2017
- NANOMETA 2017
- SBPMAT 2016, the annual meeting of the Brazilian Materials Research Society, Campinas, São Paulo, Brasil, September 25-29, 2016 – invited talk - cancelled
- 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
- 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
- ETOPI 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," 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:

- 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. V. Kildishev, A. Boltasseva, G. V. Naik, U. Guler, D. Stocks, Near Field Transducer for Heat Assisted Magnetic Recording, provisional number 61/832,689&61/939,563, PCT/US2014/038561 Patent number 20150287425, Application number 14/401917 (October 8, 2015)
- U. Guler, A. Kildishev, V. M. Shalaev, A. Boltasseva, G. Naik, Refractory Plasmonic Metamaterials Absorber and Emitter for Energy Harvesting, US Patent number 20150288318, Application number 14/402343 (October 8, 2015)
- A. Boltasseva, S. T. Wereley, A. A. Nnanna, J. C. Ndukaife, A. Mishra, Hybrid Device For On-Chip Concentration, Manipulation, Sorting And Sensing Of Particles On A Plasmonic Substrate, provisional number 62/008,288; US Patent 20,150,380,120 (December 31, 2015)

Publication Summary:

6 invited book chapters, 11 invited review articles, 115 research papers in refereed journals, 92 invited talks at international conferences and schools and 33 invited lectures at leading research centers.

Citation reports (August 1, 2016):

Source	Total citations	Highest citation	Papers with citations>50	h-index
ISI web of Science	5223	496	28	37
Google Scholar	7903	699	42	46

Book Chapters:

- [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:

- [117] N. Kinsey*, C. DeVault*, M. Clerici, J. Kim, E. Carnemolla, A. Shaltout, R. Kaipurath, D. Faccio, V.M. Shalaev, M. Ferrera, and A. Boltasseva, "Linear Addition Algebra of Optical Nonlinearities in Transparent Conductive Oxides," under review, 2016.
- [116] L. Caspani, R. P. M. Kaipurath, M. Clerici, M. Ferrera, T. Roger, A. Di Falco, J. Kim, N. Kinsey, V.M. Shalaev, A. Boltasseva, D. Faccio, "Enhanced Nonlinear Refractive Index in Epsilon-Near-Zero Materials," *Phys. Rev. Lett.*, vol. 116, no. 233901 (2016)
- [115] M. Ferrera, N. Kinsey, C. DeVault, A. Shaltout, and V. M. Shalaev, "Dynamic Nanophotonics," *JOSA B – Centennial Anniversary*, accepted, 2016. [Invited]
- [114] Amr M. Shaltout, Alexander V. Kildishev, and Vladimir M. Shalaev, Evolution of photonic metasurfaces: from static to dynamic, *J. Opt. Soc. Am. B* 33, 501-510 (2016)
- [113] A. A. Herzing, U. Guler, X. Zhou, A. Boltasseva, V. Shalaev, T. B. Norris, "Electron Energy Loss Spectroscopy of Plasmon Resonances in Titanium Nitride Thin Films," *Applied Physics Letters* accepted (2016)
- [112] M. Henstridge, C. Pfeiffer, D. Wang, A. Boltasseva, V. Shalaev, A. Grbic, R. Merlin, "Generation of Accelerating Broadband Optical Pulses with Plasmonic Nanoantennas," in preparation (2016)
- [111] H. Reddy, U. Guler, A. V. Kildishev, A. Boltasseva, V. M. Shalaev, "Experiment-fitted temperature dependent models of thin film gold optical constants," submitted to *ACS Photonics* (2016)
- [110] A. M. Shaltout, N. Kinsey, J. Kim, R. Chandrasekar, J. C. Ndukaife, A. Boltasseva, V. M. Shalaev, "Development of Optical Metasurfaces: Emerging Concepts and New Materials," invited review, *IEEE Journal of Selected Topics in Quantum Electronics*, Special issue, submitted (2016)
- [109] Z. Wang, X. Meng, S. Ho Choi, S. Knitter, Y. L. Kim, H. Cao, V. M. Shalaev, A. Boltasseva, "Controlling random lasing with 3-D plasmonic nanorod metamaterials," *Nano Letters* 16, 2471-2477, DOI: 10.1021/acs.nanolett.6b00034 (March 29, 2016)
- [108] J. Kim, A. Dutta, G. V. Naik, A. J. Giles, F. J. Bezares, C. T. Ellis, J. G. Tischler, A. M. Mahmoud, H. Caglayan, O. J. Glembocki, A. V. Kildishev, J. D. Caldwell, A. Boltasseva, N. Engheta, "The Role of Epsilon-Near-Zero Substrates in the Optical Response of Plasmonic Antennas," Vol. 3, Issue 3, pp. 339-346 (2016)
- [107] Z. Wang, P. R. West, X. Meng, N. Kinsey, V. M. Shalaev, A. Boltasseva, "Angled Physical Vapor Deposition Techniques for Non-Conformal Thin Films and Three-Dimensional Structures," *MRS Communications*, accepted (2016)
- [106] J. C. Ndukaife, V. M. Shalaev, A. Boltasseva, "Plasmonics: Turning Loss to Gain," *Science*, in press (January 2016)
- [105] M. Ferrera, N. Kinsey, C. DeVault, J. Kim, V. Shalaev, A. Boltasseva, "Functionally Doped Metal Oxides for Future Ultra-Fast Active Metamaterials," chapter in "Roadmap on optical metamaterials" by A. M. Urbas, Z. Jacob, L. Dal Negro, N. Engheta, A.D. Boardman, P. Egan, A.B. Khanikaev, V. Menon, M. Ferrera, N. Kinsey, C. DeVault, J. Kim, V. Shalaev, A. Boltasseva, J. Valentine, C. Pfeiffer, A. Grbic, E. Narimanov, L. Zhu, S. Fan, A. Alù, E. Poutrina, N. M. Litchinitser, M.A. Noginov, K.F. MacDonald, E. Plum, X. L. B. Murray, D. A. Pawlak, I. I. Smolyaninov, V. N. Smolyaninova, D. Chanda, *Journal of Optics*, accepted (2016)
- [104] A. Naldoni, F. Riboni, U. Guler, A. Boltasseva, V. M. Shalaev, A. V. Kildishev, "Solar-Powered Plasmon-Enhanced Heterogeneous Catalysis *ACS Photonics*, accepted, *Nanophotonics* (2016)
- [103] J. Liu, U. Guler, A. Lagutchev, A. Kildishev, O. Malis, A. Boltasseva, V. M. Shalaev, "Quasi-coherent thermal emitter based on refractory plasmonic materials," *Optical Materials Express* 5 (12), 2721-2728 (December 1, 2015)
- [102] V. E. Babicheva, M. Y. Shalaginov, S. Ishii, A. Boltasseva, and A. V. Kildishev, "Long-range plasmonic waveguides with hyperbolic cladding", *Optics express* 23 (24), 31109-31119 (November 30, 2015)
- [101] N. Kinsey, A. A. Syed, D. Courtwright, C. DeVault, C. E. Bonner, V. I. Gavrilenko, V. M. Shalaev, D. J. Hagan, E. W. Van Stryland, A. Boltasseva, "Effective third-order nonlinearities in metallic refractory titanium nitride thin films," *Optical Materials Express* 5 (11), 2395-2403 (November 1, 2015)

- [100] Emani, N. K., Wang, D., Chung, T.-F., Prokopenko, L. J., Kildishev, A. V., Shalaev, V. M., Chen, Y. P. and A. Boltasseva, "Plasmon Resonance in Multilayer Graphene Nanoribbons," *Laser & Photonics Reviews*, *Laser & Photonics Reviews* 9 (6), 650-655 (**Inside front cover**) (November 1, 2015)
- [99] J. C. Ndukaife, A. V. Kildishev, A. G. Agwu Nnanna, V. M. Shalaev, S. T. Wereley, A. Boltasseva, "Long-range and rapid transport of individual nano-objects by a hybrid electrothermoplasmonic nanotweezer," *Nature Nanotechnology*, doi:10.1038/nnano.2015.248 (November 2, 2015)
- [98] U. Guler, S. Suslov, A. V. Kildishev, A. Boltasseva, V. M. Shalaev, "Colloidal Plasmonic Titanium Nitride Nanoparticles: Properties and Applications," *Nanophotonics* 4 (1), 2192-8614 (October 2015) (**invited review**)
- [97] J. Kim, A. Dutta, B. Memarzadeh, A. V. Kildishev, H. Mosallaei, A. Boltasseva, "Zinc Oxide Based Plasmonic Multilayer Resonator: Localized and Gap Surface Plasmon in the infrared," *ACS Photonics* 2 (8), 1224-1230 (August 7, 2015)
- [96] N. K. Emani, A. V. Kildishev, V. M. Shalaev, A. Boltasseva, "Graphene: A Dynamic Platform for Electrical Control of Plasmonic Resonance," *Nanophotonics* 4 (1), 2192-8614 (2015), DOI: 10.1515/nanoph-2015-0014 (July 2015) (**invited review**) (*among 10 most downloaded papers in Nanophotonics (ISI Impact Factor of 5.7) in 2015*)
- [95] N. Kinsey, M. Ferrera, C. DeVault, V. Shalaev, A. Boltasseva, "Epsilon-Near-Zero Al-Doped ZnO for Ultrafast Switching at Telecom Wavelengths: Outpacing the Traditional Amplitude-Bandwidth Trade-Off," *Optica* 2 (7), 616-622 (July 20, 2015)
- [94] V. E. Babicheva, A. Boltasseva, A. V. Lavrinenko, "Transparent conducting oxides for electro-optical plasmonic modulators," *Nanophotonics* 4 (1), 165-185 (2015) DOI: 10.1515/nanoph-2015-0004 (June 2015) (**invited review**) (*among 10 most downloaded papers in Nanophotonics (ISI Impact Factor of 5.7) in 2015*)
- [93] V. E. Babicheva, M. Y. Shalaginov, S. Ishii, A. Boltasseva, A.V. Kildishev, "Finite-width plasmonic waveguides with hyperbolic multilayer cladding," *Optics Express* 23 (8), 9681-9689 (April 20, 2015)
- [92] S. Prayakrao, S. Robbins, N. Kinsey, A. Boltasseva, V. M. Shalaev, U. B. Wiesner, C. E. Bonner, R. Hussain, N. Noginova, M. A. Noginov, "Gyroidal titanium nitride as nonmetallic metamaterial," *Optical Materials Express* 5 (6), 1316-1322, doi: 10.1364/OME.5.001316 (June 1, 2015)
- [91] A. Boltasseva, V. Shalaev, "All that glitters need not be gold," *Science* 347, 6228, 1308-1310 (March 20, 2015)
- [90] T. Wang, M. Zalkovskij, K. Iwaszczuk, A. V. Lavrinenko, G. V. Naik, J. Kim, A. Boltasseva, P. Uhd Jepsen "Ultrabroadband terahertz conductivity of highly doped ZnO and ITO," *Optical Materials Express* 5 (3), 566-575, DOI:10.1364/OME.5.000566 (March 1, 2015)
- [89] U. Guler, A. V. Kildishev, A. Boltasseva, V. M. Shalaev, "Plasmonics on the slope of enlightenment: the role of transition metal nitrides," *Faraday Discussions* 178, 71-86 (2015) (*highlighted in "Where now for plasmonics?" Nature Nanotechnology* 11, 1 (2016))
- [88] M. Y. Shalaginov, V. V. Vorobyov, J. Liu, M. Ferrera, A. V. Akimov, A. Lagutchev, A. N. Smolyaninov, V. V. Klimov, J. Irudayaraj, A. V. Kildishev, A. Boltasseva, V. M. Shalaev, "Enhancement of single-photon emission from nitrogen-vacancy centers with TiN/(Al,Sc)N hyperbolic metamaterial," *Laser & Photonics Reviews*, 1-8, ID lpor.201400185.R1 (January 15, 2015)
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Teaching and Supervising Experience:

Bachelor, Master's and PhD Students:

[1] Rasmus B. Nielsen	MS	Technical University of Denmark (2007)	co-supervisor
[2] Kasper B. Joergensen	BS	University of Southern Denmark (2008)	co-supervisor
[3] Maksim Zalkovskij	MS	DTU (2009)	co-supervisor
[4] Claus Jeppesen	PhD	DTU (2011)	co-supervisor
<i>(now at DTU)</i>			
[5] Rasmus B. Nielsen	PhD	DTU (2010)	supervisor
<i>(now at ASML (lithography systems), Netherlands)</i>			
[6] Tiberiu Rosenzweig	PhD	University of Iceland (2010)	co-supervisor
[7] Paul R. West	PhD	Purdue (2008-2014, completed)	supervisor
[8] Gururaj V. Naik	PhD	Purdue (2009-2013, completed)	supervisor
[9] Naresh K. Emani	PhD	Purdue (2009-2014, completed)	supervisor
[10] Jongbum Kim	PhD	Purdue (in progress)	supervisor
[11] Nathaniel Kinsey	PhD	Purdue (in progress)	supervisor
[12] Justus C. Ndukaife	PhD	Purdue (in progress)	supervisor
[13] Aveek Dutta	PhD	Purdue (in progress)	supervisor
[14] Sajid M. Choudhury	PhD	Purdue (in progress)	supervisor
[15] Zuoxian Wang	PhD	Purdue (in progress)	supervisor
[16] Krishnakali Choudhury	PhD	Purdue (in progress)	supervisor

Undergraduate research projects at Purdue:

- [1] Ogaga Odele (Fall 2012, Spring 2013)
- [2] Ikuko Kitamura (Spring 2013, Spring 2014)
- [3] Renju Liu (Fall 2013)
- [4] Yugang Jing (Spring 2014, **SURF program**, summer 2014)
- [5] Elizabeth Grubbs (Summer, Fall 2014)

Teaching at Purdue:

Person in charge:

ECE 414 Elements of Electro- and Fiber Optics, Purdue

(Spring 2009, 2011, 2012, 2013, 2015)

ECE 412 Introduction to Engineering Optics, Purdue

(Fall 2010, 2011, 2012, 2013, 2014, 2015)

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

Other:

- 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
- Graduate Faculty Mentoring Workshop, Purdue University, February 2009
- Effective College Teaching Workshop, Purdue University, October 2012

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

Other Activities

- 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)