

*Name:* Igor BONDAREV  
*Address:* Math & Physics Department, North Carolina Central University  
1801 Fayetteville Str., Durham, NC 27707, USA  
Phone: +1 (919) 530-6623; Fax: +1 (919) 530-6125  
E-mail: ibondarev@ncu.edu

## University Education/Scientific Degrees

D.Sc. (Dr.hab.),      Theoretical Condensed Matter Physics  
Jun 2001              National Academy of Sciences of the Republic of Belarus, Minsk  
*(Doctor of Physical & Mathematical Sciences)*      *(This degree is higher than the Ph.D. degree. It requires 15 to 20 years of successful research and publication of at least 50 papers in refereed journals. It is awarded to less than 1% of active former Soviet Union PhD scientists. A counterpart in Germany is the Habilitation degree)*  
Thesis title: "Theoretical aspects of the positronium spectroscopy of solids"

Ph.D.,  
Feb 1994              Theoretical Condensed Matter Physics/Atomic Physics  
Belarusian State University, Minsk (1989-93)  
Thesis title: "Hyperfine interactions of ground-state hydrogen-like atoms in external fields"

M.Sc.,  
Jun 1989              Theoretical Physics *(with first class honours)*  
Belarusian State University, Minsk (1982-83; 1985-89)

## Employment/Professional Experience

8/2014 – Present      Professor (tenured) in the Math & Physics Department  
at the North Carolina Central University, Durham, NC, USA

8/2010 – 7/2014      Associate Professor (tenure-track) in the Math & Physics Department  
at the North Carolina Central University, Durham, NC, USA

8/2005 – 7/2010      Visiting Associate Professor in the Physics Department  
at the North Carolina Central University, Durham, NC, USA

8/1989 – 7/2005      Principal Research Associate (2/02-7/05), Leading Research  
Associate (3/99-1/02), Senior Research Associate (4/95-2/99),  
Research Associate (1/94-3/95), Junior Research Associate (1/92-12/93),  
Engineer-Physicist (8/89-12/91) in the Institute for Nuclear Problems  
at the Belarusian State University, Minsk, BELARUS

## Visiting Positions (short-term)

3/2005 – 6/2005      North Carolina Central University, Durham, USA  
11-12/2004          Laboratoire d'Annecy-le-vieux de Physique des Particules,  
Université de Savoie, Annecy-le-vieux, France

9-10/2004            Walter Schottky Institut, TU München, Garching, Germany

5/2003 – 4/2004      Laboratoire de Physique du Solide, Facultés Universitaires  
Notre-Dame de la Paix, Namur, Belgium

7-8,12/2002          Institut für Festkörperphysik, TU Berlin, Germany

7-8/1998              MPI für Metallforschung, Stuttgart, Germany

2-4/1996              University of Tokyo, Japan

11-12/1994            Institute for Nuclear Physics, Cracow, Poland

7-8/1994,1993        International Center for Theoretical Physics, Trieste, Italy

# Projects/Research Grants

**Awarded in last 15 years** (over 30 funded projects in condensed matter theory since 1994)

1. Quantum nanophotonics with periodic carbon nanotube arrays  
Principal Investigator: I.V.Bondarev  
Funded by: US National Science Foundation (09/2018–08/2021)
2. Plasmon-mediated photophysics of complex hybrid nanostructures  
Principal Investigator: I.V.Bondarev  
Funded by: US Department of Energy, Office of Basic Energy Sciences (09/2017–08/2020)
3. Near-field electrostatics of carbon nanostructures  
Principal Investigator: I.V.Bondarev  
Funded by: US Department of Energy, Office of Basic Energy Sciences (09/2014–08/2017)
4. Tunable plasmon nanooptics with carbon nanotubes  
Principal Investigator: I.V.Bondarev  
Funded by: US National Science Foundation (09/2013–08/2018)
5. Surface electromagnetic phenomena in pristine and atomically doped carbon nanotubes  
Principal Investigator: I.V.Bondarev  
Funded by: US Department of Energy, Office of Basic Energy Sciences (09/2011–08/2014)
6. New concepts for carbon nanotube material development for army related applications  
Principal Investigator: I.V.Bondarev  
Funded by: US Army Research office (05/2010–04/2014)
7. Nanotube composites: Near-field electrostatics and applications  
Principal Investigator: I.V.Bondarev  
Funded by: US National Science Foundation (08/2010–07/2012)
8. Atomically doped carbon nanotubes for advanced optoelectronics  
Principal Investigator: I.V.Bondarev  
Funded by: US National Science Foundation (08/2006–07/2008)
9. Mobility of metastable self-trapped excitations of polaron-acouston type in crystals  
Principal Investigator: I.V.Bondarev  
Funded by: Education & Science Ministry of the Republic of Belarus (01/2001–12/2005)
10. Positrons and positronium in nanoporous materials  
Principal Investigator: I.V.Bondarev  
Funded by: University of Savoie, France (11-12/2004)
11. Spontaneous emission dynamics of quantum dots in 2D photonic crystals  
Principal Investigators: I.V.Bondarev, J.Finley, G.Abstreiter  
Funded by: Deutsche Forschungsgemeinschaft (DFG), Germany (9-10/2004)
12. Electron-phonon and electromagnetic effects in carbon nanotubes  
Principal Investigators: I.V.Bondarev, Ph.Lambin  
Funded by: Belgian Office for Scientific, Technical and Cultural Affairs (5/2003–4/2004)

# Teaching Experience

## Courses taught:

Physics Department, North Carolina Central University, Durham, NC, USA

8/2005 – Present: PHYS5330 Advanced Solid State Physics; PHYS5300/5310 Advanced Quantum Mechanics I/II; PHYS5260/4220 Math Methods for Physicists; PHYS5210/5220 Statistical Mechanics I/II; PHYS5110 Advanced Classical Mechanics; PHYS5800/5900 Graduate Research/Master Thesis; PHYS/ENG4700 Undergraduate Research Seminar; PHYS4110 Thermal Physics; PHYS3410 Computational Physics; PHYS2310 General Physics for Science & Engineering Majors; PHYS1210 Language of Science; SCI1220 Science Odyssey; PHYS1050 Astronomy

*Students supervised:* Oluwafemi Adelegan, Kossi Agbeve, Adewale Akinfaderin, Todor Antonijevic, Frederick Aryeetey, Justice McConnel, Joseph Estevez, Noiki Funmilola, Syed Gilani, Misty Green, Alex Gulyuk, Subash Nepal, Oni Olimide, Hicham Qasmi, Bernhard Schmid, Toros Torosyan, Luibov Zhemchuzhna

*Postdoc researchers mentored:* Dr. Chandra Adhikari, Dr. Dipendra Dahal, Dr. David Drosdoff, Dr. Peter Morse, Dr. Nguyen Hieu, Dr. Areg Meliksetyan, Dr. Hamze Mousavi, Dr. Adrian Popescu

*Visitors sponsored:* Prof. Oleg Berman (NY City College of Technology, City University of New York, USA), Prof. Mikhail Braun (St.-Petersburg State University, RUSSIA), Prof. Alexey Chizhov (N.N.Bogoliubov Lab, JINR, Dubna, RUSSIA), Dr. Karen Dvovyan (Russian-Armenian University, Yerevan, ARMENIA), Dr. Maksim Helin (Technical University of Munich, GERMANY), Prof. Valerii Marachevskii (St.-Petersburg State University, RUSSIA)

Physics Department, Belarusian State University, Minsk, Belarus

9/2004 – 2/2005: 1) "Nuclear-spectroscopic methods for media investigation"; 2) "Methods of modern spectroscopy" (for graduate students)

9/2000 – 4/2003: "Mathematics for physicists" + recitation seminars with problems solving (for undergraduate students)

## Awards/Fellowships

- *The US National Science Foundation, 2018:*  
award No DMR-1830874; project title — "EiR: Quantum nanophotonics with periodic carbon nanotube arrays"; period — 09/2018–08/2021; amount — \$486,157
- *The US Department of Energy, Office of Basic Energy Sciences, 2017:*  
award No DE-SC0007117 (extended); project title — "Plasmon-mediated photophysics of complex hybrid nanostructures"; period — 09/2017–08/2020; amount — \$314,000
- *The University of North Carolina Research Opportunities Initiative (ROI) Award, 2015:*  
project title — "NC carbon materials initiative: Materials design, processing, and manufacturing for defense and energy needs"; period — 03/2015–06/2017  
Partnering institutions — NC State University, NC Central University, UNC-Chapel Hill; Theory Support PI — Igor Bondarev, NCCU (\$140,872 of total award funding \$2,829,994; Lead PI — Harald Ade, NCSU)

- *The US Department of Energy, Office of Basic Energy Sciences, 2014:*  
award No DE-SC0007117 (extended); project title — "Near-field electrodynamics of carbon nanostructures"; period — 09/2014–08/2017; amount — \$300,000
- *North Carolina Central University, USA, 2014:*  
Faculty Senate certificate of appreciation in recognition of service (academic year 2013-14)
- *The US National Science Foundation, 2013:*  
award No ECCS-1306871; project title — "QMHP: Tunable plasmon nanooptics with carbon nanotubes"; period — 09/2013–08/2016; amount — \$291,900
- *North Carolina Central University, USA, 2013:*  
Faculty Senate certificate of appreciation in recognition of service (academic year 2012-13)
- *North Carolina Central University, USA, 2012:*  
(i) College of Science and Technology Excellence in Research Award  
(ii) Office of Sponsored Research Award for Research & Technology Innovations
- *The US Department of Energy, Office of Basic Energy Sciences, 2011:*  
award No DE-SC0007117; project title — "Surface electromagnetic phenomena in pristine and atomically doped carbon nanotubes: Fundamentals and applications"; period — 09/2011–08/2014; amount — \$300,000
- *NT2011 — 12th International Conference on the Science and Application of Nanotubes:*  
award certificate for outstanding contribution to the satellite symposium on Computational Tools and Challenges for Nanotubes (CCTN2011)
- *The US Army Research Office, 2011:*  
award No W911NF-11-1-0189; project title — "New concepts for the development of carbon nanotube materials for army related applications"; period — 05/2011–04/2014; amount — \$375,000
- *The US National Science Foundation, 2010:*  
award No ECS-1045661; project title — "Nanotube composites: near-field electrodynamics and applications"; period — 08/2010–07/2012; amount — \$75,000
- *The US Army Research Office, 2010:*  
award No W911NF-10-1-010; project title — "Electromagnetics of pristine and atomically doped carbon nanotubes. Theoretical studies of basic phenomena and physical principles for novel applications"; period — 05/2010–04/2011; amount — \$100,000
- *North Carolina Central University, USA, 2010:*  
certificate of appreciation in recognition of outstanding contribution at the 2nd annual College of Science and Technology research symposium 2010
- *North Carolina Central University, USA, 2007:*  
(i) College of Science and Technology Outstanding Faculty Research Award  
(ii) Faculty Senate Award for Scholarly Achievement
- *The US National Science Foundation, 2006:*  
award No ECS-0631347; project title — "Atomically doped carbon nanotubes for advanced optoelectronics"; period — 08/2006–07/2008; amount — \$75,000

- *Biography included in the 2006-08 editions of Who's Who in Science & Engineering*
- *Biography included in the 2006-07 editions of Who's Who in the World*
- *North Carolina Central University, USA, 2005:*  
three-month visiting professorship assignment
- *The University of Savoie, France, 2004:*  
two-month visiting professorship assignment
- *Walter Schottky Institut, TU München, Garching, Germany, 2004:*  
two-month visiting professorship assignment
- *The Belgian Office for Scientific, Technical and Cultural Affairs (OSTC), 2003:*  
one-year (May 2003 – Apr 2004) fellowship for scientific research in Belgium
- *Institut für Festkörperphysik, TU Berlin, Germany, 2002:*  
three-month visiting professorship assignment
- *The Institute for Nuclear Problems at the Belarusian State University, 2002:*  
special Diploma in recognition of scientific accomplishments
- *The President of the Republic of Belarus, 1999:*  
two-year (1999–01) Presidential Young Investigator fellowship
- *Deutscher Akademischer Austauschdienst (DAAD), 1998:*  
two-month fellowship for scientific research in Germany
- *The Japan Society for the Promotion of Science (JSPS), 1995:*  
three-month fellowship for scientific research in Japan
- *The Polish Academy of Sciences, 1994:*  
two-month fellowship for scientific research in Poland
- *The International Science Foundation (ISF), 1994:*  
Soros travel grant for participation in the 10-th International Conference on positron annihilation (May 23–29, 1994, Beijing, China)
- *The International Science Foundation (ISF), 1993:*  
Soros financial support grant for researchers from the former Soviet Union

## Other Involvements

1. 9/2019 – Present: Preparing Future Faculty (PFF) Mentor and Visiting Scholar in the Graduate School at Duke University
2. 9/2019 – Present: NCCU Faculty Senate Member (Alternate)
3. 9/2017 – Present: NCCU College of Arts & Sciences Committee Member (Grievance)
4. 5/2007 – Present: Proposal reviewer for national and foreign research funding agencies (ASF, DOE, ESF, NASA, NSF, QNRF)
5. 3/2006 – Present: Member of the American Physical Society

6. 1/2000 – Present: Physical Review/Physical Review Letters official referee
7. 9/2019: International Program Committee Chair, International School on Two-Dimensional Crystals and Photonics (2DCP), Tbilisi State University (September 9–14, 2019, Tbilisi, GEORGIA)
8. 8/2019: Session Chair (Tailoring Emission in Structured Photonic Environments) at the "Active Photonic Platforms XI" Symposium (11081) of the SPIE International Conference (August 11–15, 2019, San Diego, CA, USA)
9. 12/2018: Session Chair (Photonic and Optoelectronic Materials) at the "Smart Nanomaterials 2018: Advances, Innovation and Applications" International Conference (December 10–13, 2018, Paris, FRANCE)
10. 9/2012 – 5/2015: NCCU Faculty Senate Member (Honorary Degrees Committee)
11. 4/2015: Session Chair (Optical Transport II) at the 2015 International EMN Optoelectronics Meeting (Energy Materials & Nanotechnology, April 24–27, 2015, Beijing, China)
12. 10/2011 – 2/2013: Guest Editor (together with Prof. Tobias Hertel of Wuerzburg University, Germany) for the Special Issue "Photophysics of Carbon Nanotubes and Nanotube Composites" of the Chemical Physics Journal [Elsevier, Chem. Phys. 413, 1-131 (2013)]
13. 9/2010 – 5/2012: NCCU College of Science & Technology Committee Member (Academic Policies and Procedures, Grievance)
14. 11/2008, 5/2010: NSF QMHP panel reviewer (Quantum Modeling of High-Performance devices and systems)
15. 6/2009: Panel Chair of the NASA APRA review panel (Astronomy and Physics Research and Analysis: IR detector development)
16. 6/2008: NASA APRA panel reviewer (Astronomy and Physics Research and Analysis: IR detector development)
17. 5/2007: NSF EPDT panel reviewer (Electronics, Photonics & Device Technologies)
18. 1/1997 – 8/2005: Member of the Academic Council of the Institute for Nuclear Problems at the Belarusian State University, Minsk
19. 5/2003 – 4/2004: Member of the Belgian Physical Society
20. 1/1995 – 12/1996: Member of the New York Academy of Sciences

## Invited Seminars

1. Strongly correlated collective excitations in quasi-2D nanostructures  
Invited seminar at the International School on 2D Crystals and Photonics, Tbilisi State University, GEORGIA (September 12, 2019)
2. Optical response of finite-thickness ultrathin plasmonic films  
Invited seminar at Birck Nanotechnology Center (V.M.Shalaev group), Purdue University, IN, USA (August 31, 2018)

3. Spatial dispersion and optical magnetism of quasi-2D plasmonic nanostructures  
Invited seminar at the International Workshop on Compound Materials, Nanoscale Devices and TeraHertz Emission in Carbon and Hybrid Electronics, Mediterranean Institute of Fundamental Physics (MIFP), Marino – Rome, ITALY (June 14, 2018)
4. Understanding the collective excitations in quasi-2D nanostructures of metals and semiconductors  
Invited seminar at Joint School of Nanoscience & Nanoengineering, NC A&T University and University of North Carolina, Greensboro, NC, USA (January 26, 2018)
5. Exciton complexes in quasi-2D crystals in the configuration space approach  
Invited seminar in the Center for Theoretical Physics at the New York City College of Technology, NY, USA (November 9, 2017)
6. Near-field electrodynamics of low-dimensional hybrid nanostructures  
Invited seminar in the Department of Physics at the University of North Texas, Denton, TX, USA (September 12, 2017)
7. Monopolar charge fluctuation induced forces in 2D graphitic nanostructures  
Invited seminar at the International Workshop on Physics of 2D Crystals (May 29 – June 4, 2016, Campofelice di Roccella, Sicily, Italy)
8. Excitons, plasmons, and excitonic complexes under strong confinement in quasi-1D semiconductors. Theory and perspectives  
Invited seminar in the Department of Physics at the North Carolina Agricultural and Technical State University, Greensboro, NC, USA (November 2, 2015)
9. Plasmon nanooptics with pristine and hybrid nanotube systems  
Invited seminar at the 4th Summit Meeting on Vibronic & Electronic Excitations in Confined Systems (September 28 – October 2, 2014, Tenerife, Spain)
10. Nanotube plasmonics  
Invited seminar in the theoretical chemistry research group led by Prof. Dr. W.Domcke, Department of Chemistry, Technische Universität München, Germany (July 22, 2013)
11. Possibility for exciton Bose-Einstein condensation in individual carbon nanotubes  
Invited seminar in the Department of Physics at the Duke University, Durham, NC, USA (May 9, 2013)
12. Carbon nanomaterials in modern nanotechnology. Highlights of recent accomplishments and prospects for future  
Invited seminar at the NCCU NASA-CREST centers' Summer Research Camp 2012 for high-school students of the Raleigh-Durham area in North Carolina, USA (June 29, 2012)
13. Nanotube plasmonics  
Invited seminar in the Center for Theoretical Physics at the New York City College of Technology, NY, USA (February 9, 2012)
14. New concepts for the development of carbon nanotube materials for advanced photonics applications  
Invited seminar at Max-Planck-Institute for Quantum Optics, Technische Universität München, Germany (August 17, 2011)

15. Carbon nanotube materials for advanced photonics applications  
Invited seminar in the theoretical chemistry research group led by Prof. Dr. W.Domcke, Department of Chemistry, Technische Universität München, Germany (April 11, 2011)
16. New concepts for the development of novel carbon nanotube materials and devices  
Invited seminar in Joint School of Nanoscience and Nanoengineering, North Carolina A&T State University and The University of North Carolina at Greensboro, NC, USA (October 8, 2010)
17. Towards the development of novel optical nanomaterials and devices  
Invited seminar in the College of Science and Technology at the North Carolina Central University, Durham, NC, USA (June 4, 2010)
18. Carbon nanotube nanophotonics  
Invited seminar in the Department of Physics at the Duke University, Durham, NC, USA (October 15, 2009)
19. Towards the development of optical nanomaterials and devices  
Invited seminar in the Physics Department at the University of South Florida, Tampa, Florida, USA (May 15, 2008)
20. Surface electromagnetic phenomena in pristine and doped carbon nanotubes  
Invited seminar in the Center for Materials Research at the Norfolk State University, Norfolk, Virginia, USA (November 2, 2007)
21. Quantum electrodynamics of surface electromagnetic excitations in carbon nanotubes  
Invited seminar in the Center for Nanoscale Systems at Cornell University, Ithaca, New York, USA (October 30, 2007)
22. Strong many-particle correlations in bulk and nanostructured materials  
Invited seminar in the Department of Engineering Science and Physics at the College of Staten Island, The City University of New York, New York, USA (May 3, 2007)
23. Cavity QED, nanophotonics and quantum communication with atomically doped carbon nanotubes  
Invited seminar in the Physics Department at the University of South Florida, Tampa, Florida, USA (September 29, 2006)
24. Optical absorption by atomically doped carbon nanotubes under strong atom-field coupling  
Invited seminar in the materials science research group led by Prof. S.Washburn at the Department of Physics and Astronomy of the University of North Carolina at Chapel Hill, USA (June 15, 2005)
25. Near-field electrodynamics of atomically doped carbon nanotubes  
Invited seminar in the Center for Optoelectronics and Optical Communications at the University of North Carolina at Charlotte, USA (May 27, 2005)
26. Positive muons as applied for hydrogen-storage capacity studies of carbon nanotubes  
Invited seminar in the muon spin rotation research group led by Prof. V.A.Gordeev at the St.-Petersburg Nuclear Physics Institute, Russia (December 22, 2004)



27. Positronium in crystalline dielectrics  
Invited seminar in the positron/positronium physics research group led by Dr. S.Gninenko at CERN, France (November 3, 2004)
28. Quantum electrodynamics of atomically doped carbon nanotubes  
Invited seminar in the quantum optics research group led by Prof. Dr. D.-G.Welsch at Theoretisch-Physikalisches Institut, Friedrich-Schiller-Universität Jena, Germany (June 22, 2004)
29. Vacuum-field effects in atomically doped carbon nanotubes  
Invited seminar in the semiconductor nanophotonics research group led by Prof. J.Finley and Prof. Dr. G.Abstreiter at Walter-Schottky-Institut, Technische Universität München, Germany (June 21, 2004)
30. Atomic spontaneous decay rate enhancement near a carbon nanotube  
Invited seminar at the Physics Department of the University of Namur, Belgium (June 23, 2003)
31. Exciton-phonon coupling and exciton pure dephasing in quasimonolayer semiconductor heterostructures  
Invited seminar in the semiconductor research group headed by Prof. Dr. I.Broser and Priv. Doz. Dr. A.Hoffmann at Institut für Festkörperphysik, Technische Universität Berlin, Germany (August 17, 2002)
32. Free and self-trapped positronium in ionic crystals: Theoretical analysis and comparison with an experiment  
Invited seminar in the positron research group headed by Prof. Dr. A.Seeger at Max-Planck Institut für Metallforschung, Stuttgart, Germany (July 17, 1998)
33. Effective quadrupole interaction of positronium in noncubic oriented crystals  
Invited seminar in the Muon Physics Laboratory of the University of Tokyo, Japan (March 12, 1996)
34. Temperature activated positronium self-trapping in ionic crystals  
Invited seminar in the solid state physics research group headed by Prof. K.Nasu at KEK, Tsukuba, Japan (February 27, 1996)
35. Crystal field effect on the angular distribution of the photons resulting from the  $3\gamma$ -decay of positronium  
Invited seminar at the Physics Department of the Tokyo Metropolitan University, Japan (February 10, 1996)
36. Influence of exchange and quadrupole interactions on the angular distribution of the photons resulting from the  $3\gamma$ -decay of positronium  
Invited seminar at the Institute for Nuclear Physics, Cracow, Poland (November 25, 1994)

## Conference Presentations

1. Epsilon-near-zero modes in transdimensional planar plasmonic nanostructures,  
*[in collaboration with V.M.Shalaev (Purdue U.)]*  
Contributed talk at the APS March Meeting (March 2–5, 2020, Denver, CO, USA)

2. Dielectric response of aligned SWCNT films: A theoretical versus experimental study,  
Contributed talk at the APS March Meeting (March 2–5, 2020, Denver, CO, USA)
3. Epsilon-near-zero modes of transdimensional planar metallic nanostructures,  
*[in collaboration with V.M.Shalaev (Purdue U.)]*  
Contributed talk at the International Workshop on Theoretical and Numerical Tools for Nanophotonics (TNTN2020, February 12–14, 2020, Zuse Institute Berlin, Germany)
4. Peculiarities of the light-matter interactions in ultrathin plasmonic nanostructures,  
*[in collaboration with V.M.Shalaev (Purdue U.)]*  
Contributed talk at the SPIE Optics and Photonics Conference (August 11–15, 2019, San Diego, CA, USA)
5. Interlayer exciton complexes in planar stacked quasi-2D heterostructures,  
**Invited** talk at the 20th International Conference on the science and application of nanotubes and low-dimensional materials (July 21–26, 2019, Würzburg, Germany)
6. Optical response of finite-thickness plasmonic films with periodic cylindrical anisotropy,  
Contributed talk at the 20th International Conference on the science and application of nanotubes and low-dimensional materials (July 21–26, 2019, Würzburg, Germany)
7. Quantum confinement effects and magneto-optical properties of quasi-2D plasmonic nanostructures,  
*[in collaboration with V.M.Shalaev (Purdue U.)]*  
Contributed talk at the 9th International Conference on surface plasmons photonics (May 26–31, 2019, Copenhagen, Denmark)
8. Transdimensional quantum optics with plasmonic films of controlled thickness,  
*[in collaboration with V.M.Shalaev (Purdue U.)]*  
**Invited** talk at the XVIth International Conference on quantum optics and quantum information (May 13–17, 2019, Minsk, Belarus)
9. Finite-thickness effects in plasmonic films with periodic cylindrical anisotropy,  
Contributed talk at the APS March Meeting (March 4–8, 2019, Boston, MA, USA)
10. Radiative spontaneous decay enhancement near an ultrathin plasmonic film,  
Contributed talk at the APS March Meeting (March 4–8, 2019, Boston, MA, USA)
11. Transdimensional quantum optics with finite-thickness plasmonic films,  
*[in collaboration with V.M.Shalaev (Purdue U.)]*  
**Invited** talk at the 49th Winter Colloquium on the Physics of Quantum Electronics (January 6–11, 2019, Snowbird, UT, USA)
12. Collective excitations in thin and ultrathin films of metals and semiconductors,  
*[in collaboration with M.R.Vladimirova (U.Montpellier, France), H.Ade's group (NCSU), & V.M.Shalaev (Purdue U.)]*  
**Invited** talk at the "Smart Nanomaterials 2018: Advances, Innovation and Applications" International Conference (December 10–13, 2018, Paris, FRANCE)
13. Trion and biexciton complexes of indirect excitons in layered quasi-2D heterostructures,  
*[in collaboration with M.R.Vladimirova (U.Montpellier, France)]*  
Contributed talk at the 34th International Conference on the Physics of Semiconductors (July 29–August 3, 2018, Montpellier, FRANCE)

14. Collective excitations in quasi-2D nanostructures of metals and semiconductors,  
*[in collaboration with M.R.Vladimirova (U.Montpellier, France), H.Ade's group (NCSU),  
& V.M.Shalaev (Purdue U.)]*  
**Invited** talk at the 3rd International Conference on physics of two dimensional crystals  
(May 29–June 2, 2018, La Valletta, Malta)
15. Frenkel-charge-transfer exciton intermixing theory for crystalline transition metal phthalocyanines,  
Contributed talk at the MRS Spring Meeting (April 2–6, 2018, Phoenix, AZ, USA)
16. Optical response of finite-thickness ultrathin plasmonic films,  
*[in collaboration with V.M.Shalaev (Purdue U.)]*  
Contributed talk at the MRS Spring Meeting (April 2–6, 2018, Phoenix, AZ, USA)
17. Quantum electrodynamics of optical metasurfaces,  
*[in collaboration with V.M.Shalaev (Purdue U.)]*  
**Invited** talk at the International Applied Computational Electromagnetics Society  
(ACES) Symposium, session on Computational Nanophotonics (March 24–29, 2018,  
Denver, CO, USA)
18. Complexes of indirect excitons in layered quasi-2D heterostructures,  
*[in collaboration with M.R.Vladimirova (U.Montpellier, France)]*  
Contributed talk at the APS March Meeting (March 5–9, 2018, Los Angeles, CA, USA)
19. Effects of confinement and optical response of ultrathin plasmonic films,  
*[in collaboration with V.M.Shalaev (Purdue U.)]*  
Contributed talk at the APS March Meeting (March 5–9, 2018, Los Angeles, CA, USA)
20. Collective excitations in quasi-2D nanostructures of finite thickness,  
**Invited** talk at the NYCTech Symposium dedicated to 70th birthday of Professor Roman  
Kezerashvili (December 15, 2017, New York City College of Technology, New York, USA)
21. Collective excitations in reduced dimensionality nanostructures,  
Contributed talk at the National Science Foundation Nanoscale Science and Engineering  
Grantees Conference (December 12–13, 2017, Arlington, VA, USA)
22. Binding energy of complexes of indirect excitons in layered quasi-2D nanomaterials,  
Contributed talk at the International Conference on nanophotonics of 2D materials  
(July 31–August 3, 2017, San-Sebastián, Spain)
23. Quantum near-field effects in hybrid carbon nanotube systems,  
Contributed talk at the 231 ECS Meeting (May 28–June 1, 2017, New Orleans, LA, USA)
24. Exciton complexes in quasi-2D crystals in the configuration space approach,  
**Invited** talk at the 2nd International Conference on physics of two dimensional crystals  
(April 25–30, 2017, Halong, Vietnam)
25. Exciton Bose-Einstein condensation in double walled carbon nanotubes,  
Contributed talk at the MRS Spring Meeting (April 17–21, 2017, Phoenix, AZ, USA)
26. Strong exciton-plasmon coupling in double-walled semiconducting carbon nanotubes,  
Contributed talk at the APS March Meeting (March 13–17, 2017, New Orleans, LA, USA)

27. Frenkel-Charge-Transfer exciton intermixing theory for molecular crystals with two isolated Frenkel exciton states,  
Contributed talk at the APS March Meeting (March 13–17, 2017, New Orleans, LA, USA)
28. Strong-coupling-mediated quantum near-field effects in hybrid quasi-1D nanostructures, **Invited** talk at the International Quantum Nanophotonics 2017 Conference (February 26 – March 3, 2017, Benasque, Spain)
29. Excitons, plasmons, and excitonic complexes in quasi-1D semiconductors from theoretical perspective,  
Contributed talk at the International Symposium in commemoration of the quarter-century anniversary of the discovery of carbon nanotubes (November 15–18, 2016, Tokyo, Japan)
30. Monopolar charge fluctuation induced forces in 2D nanostructures,  
Contributed talk at the Graphene Canada 2016 International Conference (October 18–20, 2016, Montreal, Canada)
31. Theory of the Frenkel-charge-transfer exciton intermixing in crystalline copper phthalocyanine,  
Contributed talk at the International Conference of electroluminescence and optoelectronic devices (October 2–5, 2016, Raleigh, NC, USA)
32. Excitons and excitonic complexes in quasi-1D semiconductors,  
Contributed talk at the 26th European Physical Society’s Condensed Matter Division International Conference (September 4–9, 2016, Groningen, The Netherlands)
33. Plasmon mediated transport theory for hybrid metal-semiconductor nanotube systems,  
Contributed talk at the 11th International Symposium on computational challenges and tools for nanotubes (August 13, 2016, Vienna, Austria)
34. One-dimensional transport in hybrid metal-semiconductor nanotube systems,  
Contributed talk at the 17th International Conference on the science and application of nanotubes (August 7–12, 2016, Vienna, Austria)
35. One-dimensional quantum transport in hybrid metal-semiconductor nanotube systems,  
Contributed talk at the APS March Meeting (March 14–18, 2016, Baltimore, MD, USA)
36. Exciton-plasmon interactions in carbon nanotube arrays,  
Contributed talk at the APS March Meeting (March 14–18, 2016, Baltimore, MD, USA)
37. Configuration space method for calculating binding energies of exciton complexes in quasi-1D/2D semiconductors,  
Contributed talk at the APS March Meeting (March 14–18, 2016, Baltimore, MD, USA)
38. Excitons, plasmons and excitonic complexes under strong confinement in quasi-1D semiconductors. Theory and perspectives,  
**Invited** talk at the International Conference NanoLight-2016 (March 6–12, 2016, Benasque, Spain)
39. Excitons, plasmons and excitonic complexes in quasi-1D semiconductors for nanooptoplasmonics applications,  
**Invited** talk at the XIVth International Conference on quantum optics and quantum information (October 27–30, 2015, Minsk, Belarus)

40. Electromagnetic SERS effect in carbon nanotube systems,  
Contributed talk at the 16th International Conference on the science and application of nanotubes (June 29 – July 3, 2015, Nagoya, Japan)
41. Landau-Herring approach as applied to excitonic complexes in quasi-1D semiconductors,  
Contributed talk at the 16th International Conference on the science and application of nanotubes (June 29 – July 3, 2015, Nagoya, Japan)
42. Monopolar charge fluctuation induced forces involving graphitic nanostructures,  
*[in collaboration with R.Podgornik(UM-Amherst), A.Widom(NEU), & L.M.Woods(USF)]*  
Contributed talk at the 16th International Conference on the science and application of nanotubes (June 29 – July 3, 2015, Nagoya, Japan)
43. Quantum theory of the plasmon enhanced Raman scattering by hybrid nanotube systems,  
Contributed talk at the 10th International Symposium on computational challenges and tools for nanotubes (June 28, 2015, Nagoya, Japan)
44. Charge fluctuation forces in capacitive nanoribbon systems,  
*[in collaboration with R.Podgornik(UM-Amherst), A.Widom(NEU), & L.M.Woods(USF)]*  
Contributed talk at the 6th International Symposium on graphene and 2D materials (June 28, 2015, Nagoya, Japan)
45. Plasmon enhanced Raman scattering effect for an atom near a carbon nanotube,  
Contributed talk at the 7th International Conference on surface plasmons photonics (May 31 – June 5, 2015, Jerusalem, Israel)
46. Plasmon nanooptics with pristine and hybrid nanotube systems. Theory and perspectives,  
**Invited** talk at the 2015 International EMN Optoelectronics Meeting (Energy Materials & Nanotechnology, April 24–27, 2015, Beijing, China)
47. Relative stability of excitonic complexes in quasi-one-dimensional semiconductors,  
Contributed talk at the APS March Meeting (March 2–6, 2015, San Antonio, TX, USA)
48. Plasmon enhanced Raman scattering effect for an atom near a carbon nanotube,  
Contributed talk at the APS March Meeting (March 2–6, 2015, San Antonio, TX, USA)
49. Casimir-like forces via charge fluctuations,  
*[in collaboration with L.M.Woods' group, University of South Florida]*  
Contributed talk at the APS March Meeting (March 2–6, 2015, San Antonio, TX, USA)
50. Excitonic complexes in quasi-1D semiconductors,  
**Invited** talk at the 16th International Conference "Physics of Light-Matter Coupling in Nanostructures" (February 3–8, 2015, Medellin, Colombia)
51. Electromagnetic SERS effect in carbon nanotube systems,  
Contributed talk at the 16th International Conference "Physics of Light-Matter Coupling in Nanostructures" (February 3–8, 2015, Medellin, Colombia)
52. Plasmon nanooptics with pristine and hybrid nanotube systems,  
**Invited** talk at the 2014 Theoretical Condensed Matter Physics Principal Investigators' Meeting, Materials Sciences and Engineering Division, Office of Basic Energy Science, US Department of Energy (August 11–13, 2014, Gaithersburg, MD, USA)

53. Exciton BEC in individual carbon nanotubes,  
Contributed talk at the 15th International Conference "Physics of Light-Matter Coupling in Nanostructures" (June 9–13, 2014, Montpellier, France)
54. On the stability of neutral and charged exciton complexes in quasi-one-dimensional semiconductors,  
Contributed talk at the 15th International Conference "Physics of Light-Matter Coupling in Nanostructures" (June 9–13, 2014, Montpellier, France)
55. Is exciton BEC possible in individual carbon nanotubes? A theoretical perspective,  
Contributed talk at the 15th International Conference on the science and application of nanotubes (June 2–6, 2014, Los Angeles, CA, USA)
56. Relative stability of excitonic complexes in quasi-one-dimensional semiconductors,  
**Invited** talk at the 9th International Symposium on computational challenges and tools for nanotubes (June 1, 2014, Los Angeles, CA, USA)
57. Possibility for exciton Bose-Einstein condensation in carbon nanotubes,  
Contributed talk at the APS March Meeting (March 3–7, 2014, Denver, CO, USA)
58. Bound electron states in skew-symmetric quantum wire intersections,  
Contributed talk at the APS March Meeting (March 3–7, 2014, Denver, CO, USA)
59. Binding energy of the trion complex in carbon nanotubes,  
Contributed talk at the APS March Meeting (March 3–7, 2014, Denver, CO, USA)
60. Exciton-plasmon interaction effects and optical properties of individual carbon nanotubes,  
Contributed talk at the 13th International Conference on optics of excitons in confined systems (September 9–13, 2013, Rome, Italy)
61. Near-field plasmonic effects in carbon nanotubes,  
*[in collaboration with W.Domcke's group, Munich Technical University, Germany, and L.M.Woods' group, University of South Florida]*  
Contributed talk at the International Conference on diamond and carbon materials (September 2–5, 2013, Riva del Garda, Italy)
62. Tunable near-field effects with individual carbon nanotubes,  
*[in collaboration with W.Domcke's group, Munich Technical University, Germany]*  
Contributed talk at the 14th International Conference on the science and application of nanotubes (June 24–28, 2013, Helsinki, Finland)
63. Possibilities for Bose-Einstein condensation in individual carbon nanotubes,  
Contributed talk at the 8th International Symposium on computational challenges and tools for nanotubes (June 29–30, 2013, Tallinn, Estonia)
64. Properties of exciton-plasmons in individual carbon nanotubes,  
Contributed talk at the 5th International Workshop on nanotube optics and nanospectroscopy (June 16–20, 2013, Santa Fe, NM, USA)
65. Quantum optics effects in hybrid metallic carbon nanotube systems,  
*[in collaboration with W.Domcke's group, Munich Technical University, Germany]*  
Contributed talk at the 5th International Workshop on nanotube optics and nanospectroscopy (June 16–20, 2013, Santa Fe, NM, USA)

66. Tunable near-field plasmonic effects in individual carbon nanotubes,  
*[in collaboration with W.Domcke's group, Munich Technical University, Germany]*  
 Contributed talk at the 6th International Conference on surface plasmons photonics (May 26–31, 2013, Ottawa, Canada)
67. Exciton-plasmon interaction effects in individual carbon nanotubes,  
 Contributed talk at the APS March Meeting (March 18–22, 2013, Baltimore, MD, USA)
68. Non-linear optical response simulations for strongly corellated hybrid carbon nanotube systems,  
*[in collaboration with W.Domcke's group, Munich Technical University, Germany]*  
 Contributed talk at the APS March Meeting (March 18–22, 2013, Baltimore, MD, USA)
69. Temperature-dependent levitation of a graphene flake due to Casimir forces,  
*[in collaboration with L.M.Woods' group, University of South Florida]*  
 Contributed talk at the APS March Meeting (March 18–22, 2013, Baltimore, MD, USA)
70. Plasmon nanooptics with individual carbon nanotubes,  
*[in collaboration with W.Domcke's group, Munich Technical University, Germany]*  
 Contributed talk at the International Conference Dubna-Nano2012 (July 9–14, 2012, Dubna, Russia)
71. Plasmon generation by excitons in carbon nanotubes,  
 Contributed talk at the International Conference Nanotech2012 (June 18–21, 2012, Santa Clara, CA, USA)
72. Plasmon nanooptics with pristine and hybrid nanotube systems,  
*[in collaboration with W.Domcke's group, Munich Technical University, Germany]*  
 Contributed talk at the APS March Meeting (Feb 27–March 2, 2012, Boston, MA, USA)
73. Nanotube plasmonics,  
**Invited** talk at the International Conference "Spins & Photonic Beams at Interface" (September 25–26, 2011, Minsk, Belarus)
74. Near-field quantum electrodynamics of pristine and atomically doped carbon nanotubes,  
**Invited** talk at the International Workshop "Low Dimensional Physics and Gauge Principles" (September 21–26, 2011, Yerevan, Armenia)
75. Plasmon generation by optically excited excitons in individual single wall nanotubes,  
 Contributed talk at the 12th International Conference on the science and application of nanotubes (July 10–14, 2011, Cambridge, UK)
76. Asymptotic exchange coupling of quasi-one-dimensional excitons in carbon nanotubes,  
 Contributed talk at the 7th International Symposium on computational challenges and tools for nanotubes (July 15–16, 2011, Cambridge, UK)
77. Surface plasmon amplification under controlled exciton plasmon coupling in individual carbon nanotubes,  
 Contributed talk at the 11th International Conference "Physics of Light-Matter Coupling in Nanostructures" (April 4–8, 2011, Berlin, Germany)
78. Surface plasmon generation by excitons in carbon nanotubes,  
 Contributed talk at the APS March Meeting (March 21–25, 2011, Dallas, TX, USA)

79. Biexcitonic non-linearities in semiconducting carbon nanotubes,  
Contributed talk at the APS March Meeting (March 21–25, 2011, Dallas, TX, USA)
80. Surface electromagnetic phenomena in pristine and atomically doped carbon nanotubes,  
**Invited** advanced seminar at the 2nd International School of nanophotonics and photovoltaics (September 15–22, 2010, Tsakhkadzor, Armenia)
81. Electrostatic field control of exciton-plasmon coupling and optical response of individual carbon nanotubes,  
*[in collaboration with L.M.Woods' group, University of South Florida]*  
Contributed talk at the 10th International Conference on excitonic and photonic processes in condensed and nano materials (July 11–16, 2010, Brisbane, Australia)
82. Exciton-plasmon coupling and biexcitonic nonlinearities in individual carbon nanotubes,  
*[in collaboration with L.M.Woods' group, University of South Florida]*  
Contributed talk at the 11th International Conference on the science and application of nanotubes (June 27 – July 2, 2010, Montréal, Canada)
83. Surface electromagnetic phenomena in pristine and atomically doped carbon nanotubes,  
Contributed talk at the 6th International Symposium on computational challenges and tools for nanotubes (June 27–28, 2010, Montréal, Canada)
84. On the role of interband surface plasmons in carbon nanotubes,  
*[in collaboration with L.M.Woods' group, University of South Florida]*  
**Invited** talk at the XIIIth International Conference on quantum optics and quantum information (May 28 – June 1, 2010, Kyiv, Ukraine)
85. Electrostatic field control of exciton-surface-plasmon coupling in individual carbon nanotubes,  
*[in collaboration with L.M.Woods' group, University of South Florida]*  
Contributed talk at the CLEO/QELS conference (May 16–21, 2010, San Jose, CA, USA)
86. Exciton-plasmon coupling and biexcitonic nonlinearities in individual carbon nanotubes,  
*[in collaboration with L.M.Woods' group, University of South Florida]*  
Contributed talk at the 10th International Conference "Physics of Light-Matter Coupling in Nanostructures" (April 12–16, 2010, Cuernavaca, Mexico)
87. Carbon nanotubes interactions: effects of chirality,  
*[in collaboration with L.M.Woods' group, University of South Florida]*  
Contributed talk at the APS March Meeting (March 15–19, 2010, Portland, OR, USA)
88. Exciton emission under strong exciton-plasmon coupling in carbon nanotubes,  
*[in collaboration with L.M.Woods' group, University of South Florida]*  
Contributed talk at the APS March Meeting (March 15–19, 2010, Portland, OR, USA)
89. Two-qubit atomic entanglement in metallic carbon nanotubes,  
Contributed talk at the APS March Meeting (March 15–19, 2010, Portland, OR, USA)
90. DFT modeling of structural, electronic and spin properties of  $\text{Eu@C}_{60}$ ,  $\text{Eu@C}_{82}$ , and  $\text{N@C}_{60}$  as candidates for qubits,  
*[in collaboration with S.Ya.Kilin's group, Belarusian Academy of Sciences]*  
Contributed talk at the 3rd International Symposium on methods of computational chemistry (June 28 – July 2, 2009, Odesa, Ukraine)



91. Structure and physical properties of the  $\text{Eu@C}_{82}$  and  $\text{Eu@C}_{60}$  clusters by the DFT method  
*[in collaboration with S.Ya.Kilin's group, Belarusian Academy of Sciences]*  
 Contributed talk at the 17th International Symposium "Nanostructures: Physics and Technology" (June 22–26, 2009, Minsk, Belarus)
92. Quantum confined Stark effect for exciton-plasmons in carbon nanotubes,  
 Contributed talk at the APS March Meeting (March 16–20, 2009, Pittsburgh, PA, USA)
93. Profiling surfaces with a carbon nanotube oscillator,  
*[in collaboration with L.M.Woods' group, University of South Florida]*  
 Contributed talk at the APS March Meeting (March 16–20, 2009, Pittsburgh, PA, USA)
94. Surface exciton-plasmons and optical response of small-diameter carbon nanotubes,  
*[in collaboration with L.M.Woods' group, University of South Florida]*  
**Invited** talk at the XIIth International Conference on quantum optics and quantum information (September 20–23, 2008, Vilnius, Lithuania)
95. Modeling of the structural, electronic and spin properties of the  $\text{Eu@C}_{60}$  and  $\text{Eu@C}_{82}$  clusters by the DFT method,  
*[in collaboration with S.Ya.Kilin's group, Belarusian Academy of Sciences]*  
 Contributed talk at the XIIth International Conference on quantum optics and quantum information (September 20–23, 2008, Vilnius, Lithuania)
96. Strongly coupled surface plasmon-exciton excitations in small-diameter carbon nanotubes,  
*[in collaboration with L.M.Woods' group, University of South Florida]*  
 Contributed talk at the CLEO/QELS/PhAST conference (May 4–9, 2008, San Jose, CA, USA)
97. Surface exciton-plasmons in carbon nanotubes,  
*[in collaboration with L.M.Woods' group, University of South Florida]*  
 Contributed talk at the APS March Meeting (March 10–14, 2008, New Orleans, LA, USA)
98. Spontaneous decay and two-qubit entanglement in ion-doped carbon nanotubes,  
*[in collaboration with M.A.Noginov's group, Norfolk State University, VA]*  
 Contributed talk at the APS March Meeting (March 10–14, 2008, New Orleans, LA, USA)
99. Van Der Waals interaction between two parallel radially deformed single wall carbon nanotubes,  
*[in collaboration with L.M.Woods' group, University of South Florida]*  
 Contributed talk at the APS March Meeting (March 10–14, 2008, New Orleans, LA, USA)
100. Oscillatory behavior of a double wall carbon nanotube near an infinite surface,  
*[in collaboration with L.M.Woods' group, University of South Florida]*  
 Contributed talk at the APS March Meeting (March 10–14, 2008, New Orleans, LA, USA)
101. Magnetic dipole systems for probing optical magnetism,  
*[in collaboration with M.A.Noginov's group, Norfolk State University, VA]*  
 Contributed talk at the APS March Meeting (March 10–14, 2008, New Orleans, LA, USA)
102. Surface electromagnetic phenomena in pristine and doped carbon nanotubes,  
 Contributed talk at the 74th Annual Meeting of the Southeasten Section of the APS (November 8–10, 2007, Nashville, Tennessee, USA)

103. Exciton-photon correlations in carbon nanotubes,  
Contributed talk at the 24th European Material Research Society Conference (May 28–June 1, 2007, Strasbourg, France)
104. Qubit entanglement from a bipartite atomic system under strong atom-field coupling in a carbon nanotube,  
Contributed talk at the International Conference NANOMEETING-2007 (May 22–25, 2007, Minsk, Belarus)
105. Exciton-polariton dynamics in carbon nanotubes,  
Contributed talk at the APS March Meeting (March 5–9, 2007, Denver, Colorado, USA)
106. Cavity QED, nanophotonics and quantum communication with atomically doped carbon nanotubes  
**Invited** talk at the "Towards Functional Nanomaterials: Synthesis, Characterization, and Applications" Symposium of the 2007 TMS Annual Meeting (February 25–March 1, 2007, Orlando, Florida, USA)
107. Optical absorption by atomically doped carbon nanotubes under strong atom-field coupling  
Contributed talk at the 6th Annual Meeting in the Fitzpatrick Institute for Photonics, Symposium on "Photonics at the Frontiers of Science and Technology" (September 28–29, 2006, Duke University, Durham, North Carolina, USA)
108. Atomic entanglement in carbon nanotubes  
Contributed talk at the 6th Annual Meeting in the Fitzpatrick Institute for Photonics, Symposium on "Photonics at the Frontiers of Science and Technology" (September 28–29, 2006, Duke University, Durham, North Carolina, USA)
109. Tunnel detrapping of self-trapped positronium in SrF<sub>2</sub> single crystal  
Contributed talk at the 14th International Conference on positron annihilation (July 23–28, 2006, Hamilton, Ontario, Canada)
110. Optical absorption by atomically doped carbon nanotubes under strong atom-field coupling,  
Contributed talk at the 23rd European Material Research Society Conference (May 29–June 2, 2006, Nice, France)
111. Atomic entanglement in carbon nanotubes,  
Contributed talk at the 23rd European Material Research Society Conference (May 29–June 2, 2006, Nice, France)
112. Quantum optics phenomena in atomically doped carbon nanotubes,  
**Invited** talk at the XIth International Conference on quantum optics (May 26–31, 2006, Minsk, Belarus)
113. Qubit entanglement from a bipartite atomic system in a carbon nanotube,  
Contributed talk at the NSTI Nanotechnology Conference (May 7–11, 2006, Boston, Massachusetts, USA)
114. Atomic entanglement in carbon nanotubes,  
Contributed talk at the APS March Meeting (March 13–17, 2006, Baltimore, Maryland, USA)

115. Peculiarities of the van der Waals interactions in atomically doped carbon nanotube systems,  
Contributed talk at the International Conference NANOMEETING-2005 (May 24–27, 2005, Minsk, Belarus)
116. Near-field electrodynamic properties of atomically doped carbon nanotubes,  
Contributed talk at the NSTI Nanotechnology Conference (May 8–12, 2005, Anaheim, California, USA)
117. Prospects for using positive muons to study physical properties of semiconductor, metallic and carbon nanostructures,  
**Invited** talk at the XXXIXth International Winter School on nuclear physics (February 14–20, 2005, St.-Petersburg Nuclear Physics Institute, Gatchina, Russia)
118. Positronium in crystalline dielectrics,  
**Invited** talk at the XXXIXth International Winter School on nuclear physics (February 14–20, 2005, St.-Petersburg Nuclear St.-Petersburg Nuclear Physics Institute, Gatchina, Russia)
119. Near-field electrodynamic properties of carbon nanotubes,  
Contributed talk at the 6th International Conference on nanotechnology in Carbon (October 10–13, 2004, Batz-sur-Mer, France)
120. Sensitivity of positronium momentum distribution to phase transitions in crystalline dielectrics,  
**Invited** talk at the 35th Polish (International) Seminar on positron annihilation (September 20–24, 2004, Turawa, Poland)
121. Near-field electrodynamic properties of atomically doped carbon nanotubes,  
**Invited** talk at the International Workshop on cooperative phenomena in optics and transport in nanostructures (May 31 – June 25, 2004, Dresden, Germany)
122. Exciton dephasing in quasimonolayer semiconductor heterostructures,  
Contributed talk at the International Workshop on cooperative phenomena in optics and transport in nanostructures (May 31 – June 25, 2004, Dresden, Germany)
123. The van der Waals energy of an atom near a carbon nanotube,  
Contributed talk at the Xth International Conference on quantum optics (May 30–June 3, 2004, Minsk, Belarus)
124. Spontaneous decay dynamics in atomically doped carbon nanotubes,  
Contributed talk at the 21st European Material Research Society Conference (May 25–28, 2004, Strasbourg, France)
125. Vacuum field effects in atomically doped carbon nanotubes,  
Contributed talk at the 21st European Material Research Society Conference (May 25–28, 2004, Strasbourg, France)
126. Spontaneous decay dynamics in atomically doped carbon nanotubes,  
Contributed talk at the at the Belgian Workshop on carbon nanosystems (March 15, 2004, Neuiwpoort, Belgium)

127. Delocalized positronium as a tool for investigation of second-order structural phase transitions in crystalline dielectrics,  
Contributed talk at the 13th International Conference on positron annihilation (September 7–13, 2003, Kyoto, Japan)
128. Positronium quadrupole interactions in crystalline solids,  
Contributed talk at the 13th International Conference on positron annihilation (September 7–13, 2003, Kyoto, Japan)
129. Nonradiative spontaneous decay of an excited atom near a carbon nanotube,  
Contributed talk at the International Conference on nanotubes and nanowires (August 3–8, 2003, San Diego, USA)
130. Positronium-phonon interactions in dielectric crystals,  
Contributed talk at the 12th International Workshop on low energy positron and positronium physics (July 19–21, 2003, Sandbjerg, Denmark)
131. Atomic spontaneous decay rate enhancement near a carbon nanotube,  
Contributed talk at the Belgian Workshop on carbon nanosystems (May 21, 2003, Namur, Belgium)
132. Exciton-phonon interactions and exciton pure dephasing in lens-shaped quantum dots,  
Contributed talk at the 20th European Material Research Society Conference (June 10–13, 2003, Strasbourg, France)
133. Atomic spontaneous decay rate enhancement near a carbon nanotube,  
Contributed talk at the 20th European Material Research Society Conference (June 10–13, 2003, Strasbourg, France)
134. Exciton-phonon coupling of localized quasi-2D excitons in semiconductor quantum well heterostructures,  
Contributed talk at the International Conference NANOMEETING-2003 (May 20–23, 2003, Minsk, Belarus)
135. Photon vacuum renormalization and atomic decay near a carbon nanotube,  
Contributed talk at the 26th International Conference on physics of semiconductors (July 29 – August 3, 2002, Edinburgh, Scotland)
136. Purcell effect in carbon nanotubes,  
Contributed talk at the IInd International Symposium "Fullerenes and fullerene-like structures in condensed media" (June 4–8, 2002, Minsk, Belarus)
137. Photon vacuum renormalization and spontaneous decay of an excited atom near a carbon nanotube,  
Contributed talk at the IXth International Conference on quantum optics (May 14–17, 2002, Minsk, Belarus)
138. Delocalized and self-trapped positronium in dielectric crystals,  
**Invited** talk at the XXXVIth International Winter School on nuclear physics (February 26 – March 3, 2002, St.-Petersburg Nuclear Physics Institute, Gatchina, Russia)

139. On explanation of unusual broadening of ACAR narrow peaks in  $\text{MgF}_2$ : the nonpolar optic scattering of positronium,  
Contributed talk at the 32nd Polish (International) Seminar on positron annihilation (September 18–22, 2000, Jarnołtówek, Poland)
140. Free and self-trapped positronium in ionic crystals: Theoretical analysis and comparison with an experiment,  
**Invited** talk at the XXXIInd International Winter School on nuclear physics (February 17–22, 1998, St.-Petersburg Nuclear Physics Institute, Gatchina, Russia)
141. Anisotropic magnetic quenching of positronium formed by polarized positrons in oriented crystals,  
Contributed talk at the 30th Polish (International) Seminar on positron annihilation (September 17–21, 1998, Jarnołtówek, Poland)
142. Tunnel self-trapping of positronium in alkali halide crystals,  
Contributed talk at the 11th International Conference on positron annihilation (May 25–30, 1997, Kansas City, USA)
143. Positronium self-localization in alkali halide crystals,  
Contributed talk at the 28th Polish (International) Seminar on positron annihilation (September 8–13, 1996, Jarnołtówek, Poland)
144. Temperature dependence of the positronium diffusivity in alkali halide crystals,  
Contributed talk at the 28th Polish (International) Seminar on positron annihilation (September 8–13, 1996, Jarnołtówek, Poland)
145. Quadrupole effects for positronium atom in noncubic oriented crystals,  
Contributed talk at the 7th International Conference on muon spin rotation/relaxation /resonance (April 15–19, 1996, Nikko, Japan)
146. On the possibility of observing the quadrupole moment of positronium in a crystal,  
Contributed talk at the 26th Polish (International) Seminar on positron annihilation (September 11–16, 1994, Pokrzywna, Poland)
147. Hydrogen-like atom in laser field: invariant atomic parameters in the ground state,  
**Invited** talk at the International Workshop on condensed matter physics (July 17 – August 5, 1994, International Centre for Theoretical Physics, Trieste, Italy)
148. Anisotropic magnetic quenching of positronium in a crystal,  
Contributed talk at the 10th International Conference on positron annihilation (May 23–29, 1994, Beijing, China)
149. Hyperfine interactions and anisotropy of positronium magnetic quenching in a crystal,  
Contributed talk at the Vth International Conference on nuclear-spectroscopic methods of investigation of hyperfine interactions (September 22–24, 1993, Dubna, Russia)
150. Hyperfine structure of positronium energy levels in a crystal,  
**Invited** talk at the International Workshop on condensed matter physics (July 20 – August 10, 1993, International Centre for Theoretical Physics, Trieste, Italy)
151. Quadrupole interaction of positronium in a crystal,  
Contributed talk at the XIIth International Symposium on nuclear quadrupole resonance (July 19–23, 1993, Zürich, Switzerland)

152. Hyperfine structure of positronium energy levels in a crystal,  
Contributed talk at the International School of physics E. Fermi, Course CXXV "Positron spectroscopy of solids" (July 6–16, 1993, Varenna, Italy)
153. Dynamical tensor polarizability in the ground state of the hydrogen atom,  
Contributed talk at the IXth International Conference on hyperfine interactions (August 17–21, 1992, Osaka, Japan)
154. Hyperfine structure of positronium energy levels in a crystal,  
Contributed talk at the IXth International Conference on hyperfine interactions (August 17–21, 1992, Osaka, Japan)
155. Hyperfine interactions and tensor polarizability of hydrogen-like atoms,  
Contributed talk at the IXth International Conference on hyperfine interactions (August 17–21, 1992, Osaka, Japan)
156. Dynamical tensor polarizability in the ground state of the hydrogen atom,  
Contributed talk at the 4th European Conference on atomic and molecular physics (April 6–10, 1992, Riga, Latvia)
157. Influence of exchange and quadrupole interactions on the angular distribution of the photons resulting from the  $3\gamma$ -decay of positronium,  
Contributed talk at the All-Union Seminar "Positron annihilation in solids" (September 10–12, 1991, Obninsk, USSR)
158. Anisotropic hyperfine interactions of positronium in matter,  
Contributed talk at the IVth International Conference on nuclear-spectroscopic methods of investigation of hyperfine interactions (July 26–28, 1991, Uzhgorod, USSR)
159. Crystal field effect on the angular distribution of positronium  $3\gamma$ -decay quanta,  
Contributed talk at the 9th International Conference on positron annihilation (August 26–31, 1991, Szombathely, Hungary)
160. Anisotropic hyperfine interactions of positronium in matter,  
Contributed talk at the IVth International Conference on nuclear-spectroscopic methods of investigation of hyperfine interactions (July 26–28, 1991, Uzhgorod, USSR)

## References (letters available upon request)

- Prof. Alexander Govorov** Department of Physics and Astronomy, Ohio University  
Clippinger Research Labs, Athens, OH 45701, USA  
Phone: +740-593-9430  
E-mail: govorov@ohiou.edu
- Prof. Roman Kezerashvili** Department of Physics, NYC College of Technology  
City University of New York, Brooklyn, NY 11201, USA  
Phone: +718-260-5277  
E-mail: rkezerashvili@citytech.cuny.edu
- Prof. Alex Kuzmich** Department of Physics, University of Michigan  
Ann Arbor, MI 48109, USA  
Phone: +734-764-3065  
E-mail: akuzmich@umich.edu
- Prof. Vlad Shalaev** School of Electrical and Computer Engineering  
Birck Nanotechnology Center, Purdue University  
West Lafayette, IN 47907, USA  
Phone: +765-494-9855  
E-mail: shalaev@purdue.edu
- Prof. Lilia Woods** Department of Physics, University of South Florida  
Tampa, FL 33620, USA  
Phone: +813-974-2862  
E-mail: lmwoods@usf.edu

# List of Publications

## (A) Articles in journals:

1. **I. V. Bondarev**, H. Mousavi, and V. M. Shalaev, ' Transdimensional epsilon-near-zero modes in planar plasmonic nanostructures '   
Physical Review Research, Vol. 2, p. 013070, 2020
2. L. Vertchenko, L. Leandro, E. Shkondin, O. Takayama, **I. V. Bondarev**, N. Akopian, and A. V. Lavrinenko, ' Cryogenic characterization of titanium nitride thin films '   
Optical Materials Express, Vol. 9, p. 2117, 2019
3. **I. V. Bondarev**, ' Finite-thickness effects in plasmonic films with periodic cylindrical anisotropy (Invited) '   
Optical Materials Express, Vol. 9, p. 285, 2019
4. **I. V. Bondarev**, H. Mousavi, and V. M. Shalaev, ' Optical response of finite-thickness ultrathin plasmonic films '   
MRS Communications, Vol. 8, p. 1092, 2018
5. **I. V. Bondarev** and M. R. Vladimirova, ' Complexes of dipolar excitons in layered quasi-two-dimensional nanostructures '   
Physical Review B, Vol. 97, p. 165419, 2018
6. **I. V. Bondarev** and V. M. Shalaev, ' Universal features of the optical properties of ultrathin plasmonic films '   
Optical Materials Express, Vol. 7, p. 3731, 2017
7. A. Popescu, R. A. Younts, B. Hoffman, T. R. McAfee, D. Dougherty, H. W. Ade, K. Gundogdu, and **I. V. Bondarev**, ' Monitoring charge separation processes in quasi-one-dimensional organic crystalline structures '   
Nano Letters, Vol. 17, p. 6056, 2017
8. **I. V. Bondarev** and A. Popescu, ' Exciton Bose-Einstein condensation in double-walled carbon nanotubes '   
MRS Advances, Vol. 2, p. 2401, 2017
9. **I. V. Bondarev**, A. Popescu, R. A. Younts, B. Hoffman, T. R. McAfee, D. Dougherty, K. Gundogdu, and H. W. Ade, ' Lowest energy Frenkel and charge transfer exciton intermixing in one-dimensional copper phthalocyanine molecular lattice '   
Applied Physics Letters, Vol. 109, p. 213302, 2016
10. **I. V. Bondarev**, ' Configuration space method for calculating binding energies of exciton complexes in quasi-1D/2D semiconductors '   
Modern Physics Letters B, Vol. 30, p. 1630006, 2016 (invited review article)
11. M. F. Gelin and **I. V. Bondarev**, ' One-dimensional transport in hybrid metal-semiconductor nanotube systems '   
Physical Review B, Vol. 93, p. 115422, 2016
12. D. Drosdoff, **I. V. Bondarev**, A. Widom, R. Podgornik, and L. M. Woods, ' Charge induced fluctuation forces in graphitic nanostructures '   
Physical Review X, Vol. 6, p. 011004, 2016



13. **I. V. Bondarev** and A. V. Gulyuk, ' Electromagnetic SERS effect in carbon nanotube systems '   
 Superlattices and Microstructures, Vol. 87, p. 103, 2015
14. **I. V. Bondarev**, ' Plasmon enhanced Raman scattering effect for an atom near a carbon nanotube '   
 Optics Express, Vol. 23, p. 3971, 2015
15. **I. V. Bondarev**, ' Relative stability of neutral and charged exciton complexes in quasi-one-dimensional semiconductors '   
 Physical Review B, Vol. 90, p. 245430, 2014
16. **I. V. Bondarev** and A. V. Meliksetyan, ' Possibility for exciton Bose-Einstein condensation in carbon nanotubes '   
 Physical Review B, Vol. 89, p. 045414, 2014
17. M. F. Gelin, **I. V. Bondarev**, and A. V. Meliksetyan, ' Optically promoted bipartite entanglement in hybrid metallic carbon nanotube systems '   
 The Journal of Chemical Physics, Vol. 140, p. 064301, 2014
18. T. Hertel and **I. V. Bondarev**, ' Editorial: Photophysics of carbon nanotubes and nanotube composites '   
 Chemical Physics, Vol. 413, p. 1, 2013
19. L. M. Woods, A. Popescu, D. Drosdoff, and **I. V. Bondarev**, ' Dispersive interactions in graphitic nanostructures '   
 Chemical Physics, Vol. 413, p. 116, 2013 (journal frontcover feature article)
20. M. F. Gelin, **I. V. Bondarev**, and A. V. Meliksetyan, ' Monitoring bipartite entanglement in hybrid carbon nanotube systems via optical 2D photon-echo spectroscopy '   
 Chemical Physics, Vol. 413, p. 123, 2013
21. A. D. Phan, L. M. Woods, D. Drosdoff, **I. V. Bondarev**, and N. A. Viet, ' Temperature dependent graphene suspension due to thermal Casimir interaction '   
 Applied Physics Letters, Vol. 101, p. 113118, 2012
22. **I. V. Bondarev**, M. F. Gelin, and W. Domcke, ' Plasmon nanooptics with individual single wall carbon nanotubes '   
 Journal of Physics: Conference Series, Vol. 393, p. 012024, 2012
23. D. Drosdoff, A. D. Phan, L. M. Woods, **I. V. Bondarev**, and J. F. Dobson, ' Effects of spatial dispersion on the Casimir force between graphene sheets '   
 The European Physical Journal B, Vol. 85, p. 365, 2012
24. **I. V. Bondarev** and T. Antonijevic, ' Surface plasmon amplification under controlled exciton-plasmon coupling in individual carbon nanotubes '   
 Physica Status Solidi C, Vol. 9, p. 1259, 2012 (journal frontcover feature article)
25. **I. V. Bondarev**, ' Single wall carbon nanotubes as coherent plasmon generators '   
 Physical Review B, Vol. 85, p. 035448, 2012 (selected for the February 13, 2012 issue of the Virtual Journal of Nanoscale Science & Technology at <http://www.vjnano.org>)

26. **I. V. Bondarev**, L. M. Woods, and A. Popescu, ' On the role of interband surface plasmons in carbon nanotubes '   
Optika i Spektroskopiya, Vol. 111, p. 770, 2011   
**English version:** Opt. Spectrosc. (New-York), Vol. 111, p. 733, 2011
27. **I. V. Bondarev**, ' Asymptotic exchange coupling of quasi-1D excitons in carbon nanotubes '   
Physical Review B, Vol. 83, p. 153409, 2011 (selected for the May 2, 2011 issue of the Virtual Journal of Nanoscale Science & Technology at <http://www.vjnano.org>)
28. A. Popescu, L. M. Woods, and **I. V. Bondarev**, ' Chirality dependent carbon nanotube interactions '   
Physical Review B: Rapid Communications, Vol. 83, p. 081406, 2011 (selected for the February 28, 2011 issue of the Virtual Journal of Nanoscale Science & Technology at <http://www.vjnano.org>)
29. **I. V. Bondarev**, ' Electrostatic field control of exciton-plasmon coupling and optical response of individual carbon nanotubes '   
Physica Status Solidi B, Vol. 248, p. 468, 2011
30. **I. V. Bondarev**, ' Exciton-plasmon coupling and biexcitonic nonlinearities in individual carbon nanotubes '   
Superlattices and Microstructures, Vol. 49, p. 217, 2011
31. **I. V. Bondarev**, ' Surface electromagnetic phenomena in pristine and atomically doped carbon nanotubes '   
Journal of Computational and Theoretical Nanoscience, Vol. 7, p. 1673, 2010 (invited review article for the special issue on "Technology Trends and Theory of Nanoscale Devices for Quantum Applications", American Scientific Publishers, USA)
32. **I. V. Bondarev**, K. Tatur and L. M. Woods, ' Surface exciton-plasmons and optical response of small-diameter carbon nanotubes '   
Optika i Spektroskopiya, Vol. 108, p. 412, 2010   
**English version:** Opt. Spectrosc. (New-York), Vol. 108, p. 376, 2010
33. **I. V. Bondarev**, L. M. Woods and K. Tatur, ' Strong exciton-plasmon coupling in semiconducting carbon nanotubes '   
Physical Review B, Vol. 80, p. 085407, 2009 (selected for the August 17, 2009 issue of the Virtual Journal of Nanoscale Science & Technology at <http://www.vjnano.org>)
34. **I. V. Bondarev**, K. Tatur and L. M. Woods, ' Optical response of small-diameter semiconducting carbon nanotubes under exciton-surface-plasmon coupling '   
Optics Communications, Vol. 282, p. 661, 2009
35. A. Popescu, L. M. Woods, and **I. V. Bondarev**, ' Carbon nanotube oscillator as a surface profiling device '   
Nanotechnology, Vol. 19, p. 435702, 2008
36. K. Tatur, L. M. Woods, and **I. V. Bondarev**, ' Zero-point energy of a cylindrical layer of finite thickness '   
Physical Review A, Vol. 78, p. 012110, 2008

37. A. Popescu, L. M. Woods, and **I. V. Bondarev**, ' Simple model of van der Waals interactions between two radially deformed single wall carbon nanotubes '   
Physical Review B, Vol. 77, p. 115443, 2008 (selected for the April 7, 2008 issue of the Virtual Journal of Nanoscale Science & Technology at <http://www.vjnano.org>)
38. **I. V. Bondarev** and H. Qasmi, ' Exciton-photon correlations in carbon nanotubes '   
Physica E: Low dimensional systems and nanostructures, Vol. 40, p. 2365, 2008
39. **I. V. Bondarev**, ' Cavity QED, nanophotonics and quantum information processing with atomically doped carbon nanotubes '   
Journal of Electronic Materials, Vol. 36, p. 1579, 2007
40. **I. V. Bondarev**, K. Inoue, N. Suzuki, and T. Hyodo, ' Tunnel detrapping of self-trapped positronium in SrF<sub>2</sub> single crystal '   
Physica Status Solidi C, Vol. 4, p. 3867, 2007
41. **I. V. Bondarev** and B. Vlahovic, ' Atomic entanglement in carbon nanotubes '   
Materials Science and Engineering C, Vol. 27, p. 1117, 2007
42. K. Inoue, N. Suzuki, **I. V. Bondarev**, and T. Hyodo, ' Temperature dependence of the positronium momentum distribution in CaF<sub>2</sub> '   
Physical Review B, Vol. 76, p. 024304, 2007
43. **I. V. Bondarev**, ' Quantum Optics Phenomena in Atomically Doped Carbon Nanotubes '   
Optika i Spektroskopiya, Vol. 103, p. 381, 2007   
**English version:** Opt. Spectrosc. (New-York), Vol. 103, p. 366, 2007
44. **I. V. Bondarev** and B. Vlahovic, ' Optical absorption by atomically doped carbon nanotubes under strong atom-field coupling'   
Physica E: Low dimensional systems and nanostructures, Vol. 37, p. 105, 2007
45. **I. V. Bondarev** and B. Vlahovic, ' Entanglement of a pair of atomic qubits near a carbon nanotube '   
Physical Review B, Vol. 75, p. 033402, 2007 (selected for the January 22, 2007 issue of the Virtual Journal of Nanoscale Science & Technology at <http://www.vjnano.org>)
46. **I. V. Bondarev** and B. Vlahovic, ' Optical absorption by atomically doped carbon nanotubes '   
Physical Review B, Vol. 74, p. 073401, 2006 (selected for the August 14, 2006 issue of the Virtual Journal of Nanoscale Science & Technology at <http://www.vjnano.org>)
47. **I. V. Bondarev** and Ph. Lambin, ' van der Waals coupling in atomically doped carbon nanotubes '   
Physical Review B, Vol. 72, p. 035451, 2005 (selected for the August 1, 2005 issue of the Virtual Journal of Nanoscale Science & Technology at <http://www.vjnano.org>)
48. **I. V. Bondarev**, Y. Nagai, M. Kakimoto, and T. Hyodo, ' Nonpolar optical scattering of positronium in Magnesium Fluoride '   
Physical Review B, Vol. 72, p. 012303, 2005

49. **I. V. Bondarev** and Ph. Lambin, ' The van der Waals energy of an atom near a carbon nanotube '  
Optika i Spektroskopiya, Vol. 99, p. 465, 2005  
**English version:** Opt. Spectrosc. (New-York), Vol. 99, p. 475, 2005 (selected for the October 10, 2005 issue of the Virtual Journal of Nanoscale Science & Technology at <http://www.vjnano.org>)
50. **I. V. Bondarev** and Ph. Lambin, ' Vacuum-field effects in atomically doped carbon nanotubes '  
Fullerenes, Nanotubes and Carbon Nanostructures, Vol. 13, Suppl. 1, p. 21, 2005
51. **I. V. Bondarev** and T. Hyodo, ' Sensitivity of positronium momentum distribution to phase transitions in crystalline dielectrics '  
Acta Physica Polonica A, Vol. 107, p. 673, 2005
52. **I. V. Bondarev** and Ph. Lambin, ' van der Waals energy under strong atom-field coupling in doped carbon nanotubes '  
Solid State Communications, Vol. 132, p. 203, 2004
53. **I. V. Bondarev** and Ph. Lambin, ' Spontaneous decay dynamics in atomically doped carbon nanotubes '  
Physical Review B, Vol. 70, p. 035407, 2004 (selected for the July 26, 2004 issue of the Virtual Journal of Nanoscale Science & Technology at <http://www.vjnano.org>)
54. **I. V. Bondarev** and Ph. Lambin, ' Vacuum-field Rabi oscillations in atomically doped carbon nanotubes '  
Physics Letters A, Vol. 328, p. 235, 2004
55. **I. V. Bondarev**, ' Delocalized positronium as a tool for investigation of second-order structural phase transitions in crystalline dielectrics '  
Nuclear Instruments and Methods in Physics Research B, Vol. 221, p. 230, 2004
56. N. Suzuki, H. Saito, Y. Nagai, T. Hyodo, H. Murakami, M. Sano, **I. V. Bondarev**, and S. A. Kuten, ' Search for the positronium quadrupole interaction in molecular crystals '  
Materials Science Forum, Vols. 445–446, p. 410, 2004
57. **I. V. Bondarev**, G. Ya. Slepyan, S. A. Maksimenko, and Ph. Lambin, ' Atomic spontaneous decay rate enhancement near a carbon nanotube '  
Carbon, Vol. 42, p. 997, 2004
58. **I. V. Bondarev**, S. A. Maksimenko, G. Ya. Slepyan, I. L. Krestnikov, and A. Hoffmann, ' Exciton-phonon interactions and exciton dephasing in semiconductor quantum well heterostructures '  
Physical Review B, Vol. 68, p. 073310, 2003 (selected for the September 15, 2003 issue of the Virtual Journal of Nanoscale Science & Technology at <http://www.vjnano.org>)
59. **I. V. Bondarev**, S. A. Maksimenko, G. Ya. Slepyan, I. L. Krestnikov, and A. Hoffmann, ' Exciton-phonon interactions and exciton pure dephasing in lens-shaped quantum dots '  
Material Science and Engineering C, Vol. 23, p. 1107, 2003
60. **I. V. Bondarev**, ' On the mobility of delocalized and self-trapped positronium states in ionic crystals '  
Physica Status Solidi B, Vol. 237, p. 479, 2003

61. N. Suzuki, H. Saito, Y. Nagai, T. Hyodo, H. Murakami, M. Sano, **I. V. Bondarev**, and S. A. Kuten, 'Quadrupole interactions of positronium in  $\alpha$ -quartz' Physical Review B, Vol. 67, p. 073104, 2003
62. **I. V. Bondarev**, G. Ya. Slepyan and S. A. Maksimenko, 'Photon vacuum renormalization and spontaneous decay of an excited atom near a carbon nanotube' Optika i Spektroskopiya, Vol. 94, p. 885, 2003  
**English version:** Opt. Spectrosc. (New-York), Vol. 94, p. 823, 2003 (selected for the July 14, 2003 issue of the Virtual Journal of Nanoscale Science & Technology at <http://www.vjnano.org>)
63. **I. V. Bondarev**, G. Ya. Slepyan and S. A. Maksimenko, 'Spontaneous decay of excited atomic states near a carbon nanotube' Physical Review Letters, Vol. 89, p. 115504, 2002 (selected for the September 2, 2002 issue of the Virtual Journal of Nanoscale Science & Technology at <http://www.vjnano.org>; see also Physics News Update No 603 # 2, September 9, 2002 at <http://www.aip.org/enews/physnews/2002>)
64. **I. V. Bondarev**, 'Delocalized positronium in alkali halide crystals: Analysis of possible lattice scattering processes' Physics Letters A, Vol. 291/1, p. 39, 2001
65. **I. V. Bondarev**, 'Analysis of possible scattering processes for Bloch positronium in ionic crystals at elevated temperatures' Acta Physica Polonica A, Vol. 99, p. 337, 2001
66. **I. V. Bondarev**, 'On the role of nonpolar optic scattering for delocalized positronium in ionic crystals' Pis'ma v Zhurnal Éksperimentalnoi i Teoreticheskoi Fiziki, Vol. 72, p. 673, 2000 [in Russian]  
**English translation:** JETP Letters (New-York), Vol. 72, p. 468, 2000
67. **I. V. Bondarev**, A. V. Berestov, E. A. Rudak and S. A. Kuten, 'Magnetic quenching anisotropy of quasi-positronium states and positronium complexes in oriented crystals' Bulletin of the Foundation for Basic Research of the National Academy of Sciences of the Republic of Belarus, Vol. 3, p. 7, 2000 [in Russian]
68. **I. V. Bondarev**, 'On the anisotropic magnetic quenching of positronium states in oriented crystals' Fizika Tverdogo Tela, Vol. 41, p. 999, 1999 [in Russian]  
**English translation:** Physics of the Solid State (New-York), Vol. 41, p. 909, 1999
69. **I. V. Bondarev**, 'Anisotropic magnetic quenching of positronium formed by polarized positrons in oriented crystals' Acta Physica Polonica A, Vol. 95, p. 455, 1999
70. **I. V. Bondarev**, 'On the role of umklapp processes in the scattering of delocalized positronium on acoustic phonons in ionic crystals' Pis'ma v Zhurnal Éksperimentalnoi i Teoreticheskoi Fiziki, Vol. 69, p. 215, 1999 [in Russian]  
**English translation:** JETP Letters (New-York), Vol. 69, p. 231, 1999

71. **I. V. Bondarev**, ' Existence of free and self-trapped positronium states in alkali halide crystals: Theoretical analysis and comparison with experiment '   
Physical Review B, Vol. 58, p. 12011, 1998
72. **I. V. Bondarev** and T. Hyodo, ' Positronium in alkali halides: Tunneling from the delocalized to the self-trapped state '   
Physical Review B, Vol. 57, p. 11341, 1998
73. **I. V. Bondarev** and T. Hyodo, 'Tunnel self-trapping of positronium in alkali halide crystals'   
Materials Science Forum, Vols. 255-257, p. 254, 1997
74. **I. V. Bondarev**, ' Positronium self-localization in alkali halide crystals '   
Nukleonika, Vol. 42, p. 15, 1997
75. **I. V. Bondarev**, ' Temperature dependence of the positronium diffusivity in alkali halide crystals '   
Nukleonika, Vol. 42, p. 21, 1997
76. **I. V. Bondarev**, ' Localized and delocalized positronium in alkali halides within the model of self-trapping '   
Fizika Tverdogo Tela, Vol. 38, p. 2038, 1996 [in Russian]   
**English translation:** Physics of the Solid State (New-York), Vol. 38, p. 1125, 1996
77. **I. V. Bondarev** and S. A. Kuten, ' Invariant atomic parameters in the ground state of a hydrogen-like atom '   
Zhurnal Éksperimentalnoi i Teoreticheskoi Fiziki, Vol. 109, p. 1118, 1996 [in Russian]   
**English translation:** JETP (New-York), Vol. 82, p. 600, 1996
78. **I. V. Bondarev** and S. A. Kuten, ' Quadrupole interactions and anisotropic magnetic quenching of positronium in oriented crystals '   
Acta Physica Polonica A, Vol. 88, p. 83, 1995
79. **I. V. Bondarev** and S. A. Kuten, ' Anisotropic magnetic quenching of positronium in a crystal '   
Materials Science Forum, Vols. 175–178, p. 651, 1995
80. **I. V. Bondarev** and S. A. Kuten, ' Quadrupole interactions of positronium in a crystal'   
Zeitschrift für Naturforschung A, Vol. 49, p. 439, 1994
81. **I. V. Bondarev** and S. A. Kuten, ' Hyperfine interactions and anisotropy of positronium magnetic quenching in a crystal '   
Izvestia Rosiiskoi Akademii Nauk, Vol. 58, p. 125, 1994   
**English translation:** Bulletin of the Russian Academy of Sciences, Vol. 58, p. 324, 1994
82. **I. V. Bondarev** and S. A. Kuten, ' On the possibility of observing the quadrupole moment of positronium in a crystal '   
The NQI Newsletter, Vol. 1, p. 5, 1994
83. **I. V. Bondarev** and S. A. Kuten, ' Static tensor polarizabilities of hydrogen-like atoms in  $nS_{1/2}$ - and  $nP_{1/2}$ -states '   
Optika i Spektroskopiya, Vol. 75, p. 6, 1993 [in Russian]   
**English translation:** Opt. Spectrosc. (New-York), Vol. 75, p. 3, 1993

84. **I. V. Bondarev**, S. A. Kuten and I. E. Lantsov, ' Dynamical tensor polarizability in the ground state of hydrogen-like atom '  
Optika i Spektroskopiya, Vol. 74, p. 641, 1993 [in Russian]  
**English translation:** Opt. Spectrosc. (New–York), Vol. 74, p. 383, 1993
85. **I. V. Bondarev** and S. A. Kuten, ' Quadrupole interactions of positronium atom in a crystal '  
The NQR Newsletter, Vol. 1, p. 25, 1993
86. **I. V. Bondarev**, S. A. Kuten and I. E. Lantsov, ' Dynamical tensor polarizability in the ground state of the hydrogen atom '  
Journal of Physics B, Vol. 25, p. 4981, 1992
87. **I. V. Bondarev** and S. A. Kuten, ' The effect of exchange and quadrupole interactions on the angular distribution of positronium  $3\gamma$ -decay quanta in matter '  
Physics Letters A, Vol. 154, p. 154, 1991
88. **I. V. Bondarev** and S. A. Kuten, ' Influence of the crystal field on the angular distribution of the photons resulting from the  $3\gamma$ -decay of positronium '  
Fizika Tverdogo Tela, Vol. 32, p. 3338, 1990 [in Russian]  
**English translation:** Soviet Physics–Solid State (New–York), Vol. 32, p. 1930, 1990

## **(B) Contributions to books & conference proceedings:**

89. **I. V. Bondarev**, H. Mousavi, and V. M. Shalaev, ' Transdimensional quantum optics with plasmonic films of controlled thickness '  
In: International Workshop on theoretical and numerical tools for nanophotonics (February 12–14, 2020, Zuse Institute Berlin, Germany). Book of abstracts, p. 39
90. C. M. R. Adhikari and **I. V. Bondarev**, ' Dielectric response of aligned SWCNT films: A theoretical versus experimental study '  
In: Bulletin of the American Physical Society, Vol. 65, No 1, p. D44.00002 (APS March Meeting, March 2–5, 2020, Denver, CO, USA)
91. **I. V. Bondarev**, H. Mousavi, V. M. Shalaev, ' Epsilon-near-zero modes in transdimensional planar plasmonic nanostructures '  
In: Bulletin of the American Physical Society, Vol. 65, No 1, p. F62.00003 (APS March Meeting, March 2–5, 2020, Denver, CO, USA)
92. **I. V. Bondarev**, H. Mousavi, and V. M. Shalaev, ' Peculiarities of the light-matter interactions in ultrathin plasmonic nanostructures '  
Proc. SPIE 11080, Metamaterials, Metadevices, and Metasystems 2019, 1108015 (9 September 2019); <https://doi.org/10.1117/12.2527948>
93. **I. V. Bondarev**, ' Optical response of finite-thickness plasmonic films with periodic cylindrical anisotropy '  
In: 20th International Conference on the science and application of nanotubes and low-dimensional materials (July 21–26, 2019, Würzburg, Germany). Book of abstracts, p. 261
94. **I. V. Bondarev** and M R. Vladimirova, ' Interlayer exciton complexes in planar stacked quasi-2D heterostructures '  
In: 20th International Conference on the science and application of nanotubes and low-dimensional materials (July 21–26, 2019, Würzburg, Germany). Book of abstracts, p. 388

95. **I. V. Bondarev**, H. Mousavi, and V. M. Shalaev, ' Quantum confinement effects and magneto-optical properties of quasi-2D plasmonic nanostructures '
 

In: 9th International Conference on surface plasmons photonics (May 26–31, 2019, Copenhagen, Denmark). Book of abstracts, p. 99
96. **I. V. Bondarev**, H. Mousavi, and V. M. Shalaev, ' Transdimensional quantum optics with plasmonic films of controlled thickness '
 

In: XVIth International Conference on quantum optics and quantum information (May 13–17, 2019, Minsk, Belarus). Book of abstracts, p. 7
97. **I. V. Bondarev**, ' Finite-thickness effects in plasmonic films with periodic cylindrical anisotropy '
 

In: Bulletin of the American Physical Society, Vol. 64, No 1, p. S21.00003 (APS March Meeting, March 4–8, 2019, Boston, MA, USA)
98. H. Mousavi and **I. V. Bondarev**, ' Radiative spontaneous decay enhancement near an ultrathin plasmonic film '
 

In: Bulletin of the American Physical Society, Vol. 64, No 1, p. V21.00005 (APS March Meeting, March 4–8, 2019, Boston, MA, USA)
99. **I. V. Bondarev**, ' Collective excitations in thin and ultrathin films of metals and semiconductors '
 

In: Smart NanoMaterials 2018 Advances, Innovation & Applications International Conference (SNAIA, December 10–13, 2018, Paris, FRANCE). Book of abstracts, p. 70
100. **I. V. Bondarev** and V. M. Shalaev, ' Quantum electrodynamics of optical metasurfaces '
 

2018 International Applied Computational Electromagnetics Society Symposium (ACES)  
In: IEEE *Xplore*, DOI: 10.23919/ROPACES.2018.8364252 (24 May 2018)
101. **I. V. Bondarev** and V. M. Shalaev, ' Effects of confinement and optical response of ultrathin plasmonic films '
 

In: Bulletin of the American Physical Society, Vol. 63, No 1, p. C12.00010 (APS March Meeting, March 5–9, 2018, Los Angeles, CA, USA)
102. M. R. Vladimirova and **I. V. Bondarev**, ' Complexes of indirect excitons in layered quasi-2D heterostructures '
 

In: Bulletin of the American Physical Society, Vol. 63, No 1, p. B36.00002 (APS March Meeting, March 5–9, 2018, Los Angeles, CA, USA)
103. **I. V. Bondarev**, ' Quantum near-field effects in hybrid carbon nanotube systems '
 

In: the 231 Electrochemical Society Meeting (ECS, May 28–June 1, 2017, New Orleans, LA, USA). Book of abstracts, p. B03-0710
104. A. Popescu and **I. V. Bondarev**, ' Strong exciton-plasmon coupling in double walled semiconducting carbon nanotubes '
 

In: Bulletin of the American Physical Society, Vol. 62, No 2, p. X34.00005 (APS March Meeting, March 13–17, 2017, New Orleans, LA, USA)
105. **I. V. Bondarev** and A. Popescu, ' Frenkel-Charge-Transfer exciton intermixing theory for molecular crystals with two isolated Frenkel exciton states '
 

In: Bulletin of the American Physical Society, Vol. 62, No 1, p. A11.00003 (APS March Meeting, March 13–17, 2017, New Orleans, LA, USA)



106. **I. V. Bondarev**, ' Excitons, plasmons, and excitonic complexes in quasi-1D semiconductors from theoretical perspective '   
 In: International Symposium in commemoration of the quarter-century anniversary of the discovery of carbon nanotubes (CNT25, November 15–18, 2016, Tokyo, Japan). Book of abstracts, p. 37
107. **I. V. Bondarev**, D. Drosdoff, A. Widom, R. Podgornik, and L. M. Woods, ' Monopolar charge fluctuation induced forces in 2D nanostructures '   
 In: Graphene Canada 2016 International Conference (October 18–20, 2016, Montreal, Canada). Book of abstracts, p. 83
108. D. Drosdoff and **I. V. Bondarev**, ' Exciton-plasmon coupling and photonic band structure of carbon nanotube arrays '   
 In: 17th International Conference on the Science and Application of Nanotubes (NT16, August 7–12, 2016, Vienna, Austria). Book of abstracts, p. 174
109. **I. V. Bondarev** and M. F. Gelin, ' One-dimensional transport in hybrid metal-semiconductor nanotube systems '   
 In: 17th International Conference on the Science and Application of Nanotubes (NT16, August 7–12, 2016, Vienna, Austria). Book of abstracts, p. 176
110. **I. V. Bondarev** and M. F. Gelin, ' Plasmon mediated transport theory for hybrid metal-semiconductor nanotube systems '   
 In: 11th International Symposium on Computational Challenges and Tools for Nanotubes (CCTN16 – NT16 satellite, August 13, 2016, Vienna, Austria). Book of abstracts, p. 221
111. **I. V. Bondarev**, ' Configuration space method for calculating binding energies of exciton complexes in quasi-1D/2D semiconductors '   
 In: Bulletin of the American Physical Society, Vol. 61, No 2, p. V20.00003 (APS March Meeting, March 14–18, 2016, Baltimore, MD, USA)
112. D. Drosdoff and **I. V. Bondarev**, ' Exciton-plasmon interactions in carbon nanotube arrays '   
 In: Bulletin of the American Physical Society, Vol. 61, No 1, p. K32.00007 (APS March Meeting, March 14–18, 2016, Baltimore, MD, USA)
113. M. F. Gelin and **I. V. Bondarev**, ' One-dimensional quantum transport in hybrid metal-semiconductor nanotube systems '   
 In: Bulletin of the American Physical Society, Vol. 61, No 1, p. K27.00003 (APS March Meeting, March 14–18, 2016, Baltimore, MD, USA)
114. **I. V. Bondarev**, ' Excitons, plasmons and excitonic complexes in quasi-1D semiconductors for nanooptoplasmonics applications '   
 In: XIVth International Conference on quantum optics and quantum information (October 27–30, 2015, Minsk, Belarus). Book of abstracts, p. 6
115. **I. V. Bondarev**, ' Landau-Herring approach as applied to excitonic complexes in quasi-1D semiconductors '   
 In: 16th International Conference on the Science and Application of Nanotubes (NT15, June 29 – July 3, 2015, Nagoya, Japan). Book of abstracts, p. 163

116. **I. V. Bondarev**, ' Electromagnetic SERS effect in carbon nanotube systems '  
In: 16th International Conference on the Science and Application of Nanotubes (NT15, June 29 – July 3, 2015, Nagoya, Japan). Book of abstracts, p. 269
117. D. J. Drosdoff, **I. V. Bondarev**, A. Widom, R. Podgornik, and L. M. Woods, ' Monopolar charge fluctuation induced forces involving graphitic nanostructures '  
In: 16th International Conference on the Science and Application of Nanotubes (NT15, June 29 – July 3, 2015, Nagoya, Japan). Book of abstracts, p. 291
118. **I. V. Bondarev**, ' Quantum theory of the plasmon enhanced Raman scattering by hybrid nanotube systems '  
In: 10th International Symposium on Computational Challenges and Tools for Nanotubes (CCTN15 – NT15 satellite, June 28, 2015, Nagoya, Japan). Book of abstracts, p. 378
119. D. J. Drosdoff, I. V. Bondarev, A. Widom, R. Podgornik, L. M. Woods, ' Charge fluctuation forces in capacitive nanoribbon systems '  
In: 6th Graphene and 2D Materials Satellite Symposium (GSS15 – NT15 satellite, June 28, 2015, Nagoya, Japan). Book of abstracts, p. 463
120. **I. V. Bondarev**, ' Plasmon enhanced Raman scattering effect for an atom near a carbon nanotube '  
In: 7th International Conference on surface plasmons photonics (SPP7, May 31 – June 5, 2015, Jerusalem, Israel). Book of abstracts, p. Th-04-F-5
121. **I. V. Bondarev**, ' Plasmon nanooptics with pristine and hybrid nanotube systems. Theory and perspectives '  
In: 2015 International EMN Optoelectronics Meeting (Energy Materials and Nanotechnology, April 24–27, 2015, Beijing, China). Book of abstracts, p. 130
122. **I. V. Bondarev**, ' Relative stability of excitonic complexes in quasi-one-dimensional semiconductors '  
In: Bulletin of the American Physical Society, Vol. 60, No 2, p. Z22.00009 (APS March Meeting, March 2–6, 2015, San Antonio, TX, USA)
123. A. V. Gulyuk and **I. V. Bondarev**, ' Plasmon enhanced Raman scattering effect for an atom near a carbon nanotube '  
In: Bulletin of the American Physical Society, Vol. 60, No 2, p. Y22.00007 (APS March Meeting, March 2–6, 2015, San Antonio, TX, USA)
124. D. Drosdoff, **I. V. Bondarev**, and L. M. Woods, ' Casimir-like forces via charge fluctuations '  
In: Bulletin of the American Physical Society, Vol. 60, No 2, p. Q16.00012 (APS March Meeting, March 2–6, 2015, San Antonio, TX, USA)
125. **I. V. Bondarev**, ' Excitonic complexes in quasi-1D semiconductors '  
In: 16th International Conference "Physics of Light-Matter Coupling in Nanostructures" (PLMCN2015, February 3–8, 2015, Medellin, Colombia). Book of abstracts, p. 14
126. **I. V. Bondarev** and A. V. Gulyuk, ' Electromagnetic SERS effect in carbon nanotube systems '  
In: 16th International Conference "Physics of Light-Matter Coupling in Nanostructures" (PLMCN2015, February 3–8, 2015, Medellin, Colombia). Book of abstracts, p. 75

127. **I. V. Bondarev**, M. F. Gelin, and A. V. Meliksetyan, ' Tunable plasmon nanooptics with carbon nanotubes '
- In: Dekker Encyclopedia of Nanoscience and Nanotechnology, 3rd ed., CRC Press: New York, 2014, pp. 4989-5001
128. **I. V. Bondarev**, ' Exciton BEC in individual carbon nanotubes '
- In: 15th International Conference "Physics of Light-Matter Coupling in Nanostructures" (PLMCN2014, June 9–13, 2014, Montpellier, France). Book of abstracts, p. 70
129. **I. V. Bondarev**, ' On the stability of neutral and charged exciton complexes in quasi-one-dimensional semiconductors '
- In: 15th International Conference "Physics of Light-Matter Coupling in Nanostructures" (PLMCN2014, June 9–13, 2014, Montpellier, France). Book of abstracts, p. 120
130. **I. V. Bondarev**, ' Is exciton BEC possible in individual carbon nanotubes? A theoretical prospective '
- In: 15th International Conference on the Science and Application of Nanotubes (NT14, June 2–6, 2014, Los Angeles, CA, USA). Book of abstracts, p. 31
131. **I. V. Bondarev** and A. V. Meliksetyan, ' Possibility for exciton Bose-Einstein condensation in carbon nanotubes '
- In: Bulletin of the American Physical Society, Vol. 59, No 1, p. Y37.00002 (APS March Meeting, March 3–7, 2014, Denver, CO, USA)
132. S. Nepal, L. Zhemchuzhna, A. V. Meliksetyan, and **I. V. Bondarev**, ' Bound electron states in skew-symmetric quantum wire intersections '
- In: Bulletin of the American Physical Society, Vol. 59, No 1, p. H1.00147 (APS March Meeting, March 3–7, 2014, Denver, CO, USA)
133. A. V. Meliksetyan and **I. V. Bondarev**, ' Binding energy of the trion complex in carbon nanotubes '
- In: Bulletin of the American Physical Society, Vol. 59, No 1, p. Y37.00005 (APS March Meeting, March 3–7, 2014, Denver, CO, USA)
134. **I. V. Bondarev** and A. V. Meliksetyan, ' Exciton-plasmon interaction effects and optical properties of individual carbon nanotubes '
- In: 13th International Conference on Optics of Excitons in Confined Systems (OECS13, September 9–13, 2013, Rome, Italy). Book of abstracts, p. 214
135. **I. V. Bondarev**, M. F. Gelin, A. V. Meliksetyan, and L. M. Woods, ' Near-field plasmonic effects in carbon nanotubes '
- In: International Conference on Diamond and Carbon Materials (DCM2013, September 2–5, 2013, Riva del Garda, Italy). Book of abstracts, p. O.052
136. **I. V. Bondarev**, M. F. Gelin, and A. V. Meliksetyan, ' Tunable near-field plasmonic effects in individual carbon nanotubes '
- In: 14th International Conference on the Science and Application of Nanotubes (NT13, June 24–28, 2013, Helsinki, Finland). Book of abstracts, p. 40
137. **I. V. Bondarev** and A. V. Meliksetyan, ' Possibilities for Bose-Einstein condensation in individual carbon nanotubes '
- In: 8th International Symposium on Computational Challenges and Tools for Nanotubes (CCTN13 – NT13 satellite, June 29, 2013, Tallinn, Estonia). Book of abstracts, p. 244

138. **I. V. Bondarev**, A. V. Chizhov, M. F. Gelin, and A. V. Meliksetyan, ' Quantum optics effects in hybrid metallic carbon nanotube systems '   
 In: 5th International Workshop on nanotube optics and nanospectroscopy (WONTON13, June 16–20, 2013, Santa Fe, NM, USA). Book of abstracts, p. P17
139. **I. V. Bondarev** and A. V. Meliksetyan, ' Properties of exciton-plasmons in individual carbon nanotubes '   
 In: 5th International Workshop on nanotube optics and nanospectroscopy (WONTON13, June 16–20, 2013, Santa Fe, NM, USA). Book of abstracts, p. P18
140. **I. V. Bondarev**, M. F. Gelin, and A. V. Meliksetyan, ' Tunable near-field plasmonic effects in individual carbon nanotubes '   
 In: 6th International Conference on surface plasmons photonics (SPP6, May 26–31, 2013, Ottawa, Canada). Book of abstracts, p. 291
141. **I. V. Bondarev** and A. V. Meliksetyan, ' Exciton-plasmon interaction effects in individual carbon nanotubes '   
 In: Bulletin of the American Physical Society, Vol. 58, No 1, p. J33.00005 (APS March Meeting, March 18–22, 2013, Baltimore, MD, USA)
142. A. V. Meliksetyan, **I. V. Bondarev**, and M. F. Gelin, ' Non-linear optical response simulations for strongly correlated hybrid carbon nanotube systems '   
 In: Bulletin of the American Physical Society, Vol. 58, No 1, p. J24.00008 (APS March Meeting, March 18–22, 2013, Baltimore, MD, USA)
143. A. Phan, D. Drosdoff, L. M. Woods, **I. V. Bondarev**, N. Viet, ' Temperature-dependent levitation of a graphene flake due to Casimir forces '   
 In: Bulletin of the American Physical Society, Vol. 58, No 1, p. Y8.00011 (APS March Meeting, March 18–22, 2013, Baltimore, MD, USA)
144. **I. V. Bondarev**, M. F. Gelin, and A. V. Meliksetyan, ' Tunable plasmon nanooptics with carbon nanotubes '   
 In: Dekker Encyclopedia of Nanoscience and Nanotechnology, 2nd ed., Taylor & Francis: New York, Published online: 27 Feb 2013; 1-13
145. **I. V. Bondarev**, M. F. Gelin, and W. Domcke, ' Plasmon nanooptics with pristine and hybrid carbon nanotube systems '   
 In: International Conference "Dubna-Nano 2012" (July 9–14, 2012, Dubna, Russia). Book of abstracts, p. 29
146. **I. V. Bondarev** and T. Antonijevic, ' Plasmon generation by excitons in carbon nanotubes '   
 In: Proceedings of the Nanotech 2012 Conference (June 18–21, 2012, Santa Clara, CA, USA), Vol.1, p.334
147. **I. V. Bondarev**, M. F. Gelin, and W. Domcke, ' Plasmon nanooptics with pristine and hybrid nanotube systems '   
 In: Bulletin of the American Physical Society, Vol. 57, No 1, p. V6.00002 (APS March Meeting, February 27–March 2, 2012, Boston, MA, USA)
148. **I. V. Bondarev**, ' Nanotube plasmonics '   
 In: International Conference "Spins & Photonics Beams at Interface" (September 25–26, 2011, Minsk, Belarus). Book of abstracts, p. 9

149. **I. V. Bondarev** and T. Antonijevic, ' Plasmon generation by optically excited excitons in individual single wall carbon nanotubes '
- In: 12th International Conference on the Science and Application of Nanotubes (NT11, July 10–14, 2011, Cambridge, UK). Book of abstracts, #121
150. **I. V. Bondarev**, ' Asymptotic exchange coupling of quasi-one-dimensional excitons in carbon nanotubes '
- In: 7th International Symposium on Computational Challenges and Tools for Nanotubes (CCTN11 – NT11 satellite, July 15–16, 2011, Cambridge, UK). Book of abstracts, #122
151. **I. V. Bondarev** and T. Antonijevic, ' Surface plasmon amplification under controlled exciton plasmon coupling in individual carbon nanotubes '
- In: 11th International Conference "Physics of Light-Matter Coupling in Nanostructures" (PLMCN11, April 4–8, 2011, Berlin, Germany). Book of abstracts, p. 53
152. **I. V. Bondarev** and T. Antonijevic, ' Surface plasmon generation by excitons in carbon nanotubes '
- In: Bulletin of the American Physical Society, Vol. 56, No 1, p. Q32.00013 (APS March Meeting, March 21–25, 2011, Dallas, TX, USA)
153. T. Torosyan and **I. V. Bondarev**, ' Biexcitonic non-linearities in semiconducting carbon nanotubes '
- In: Bulletin of the American Physical Society, Vol. 56, No 1, p. X28.00004 (APS March Meeting, March 21–25, 2011, Dallas, TX, USA)
154. **I. V. Bondarev**, L. M. Woods, and A. Popescu, ' Exciton-plasmon interactions in individual carbon nanotubes '
- A book chapter in edited collection "Plasmons: Theory and Applications", ed. K. Helsey. Nova Science Publishers, USA, 2010, Ch. 16, p. 381
155. **I. V. Bondarev**, L. M. Woods, and K. Tatur, ' Electrostatic field control of exciton-plasmon coupling and optical response of individual carbon nanotubes '
- In: 10th International Conference on excitonic and photonic processes in condensed and nano materials (EXCON10, July 11–16, 2010, Brisbane, Australia). Book of abstracts, p. 13O01
156. **I. V. Bondarev**, L. M. Woods, and K. Tatur, ' Exciton-plasmon coupling and biexcitonic nonlinearities in individual carbon nanotubes '
- In: 11th International Conference on the Science and Application of Nanotubes (NT10, June 27 – July 2, 2010, Montréal, Canada). Book of abstracts, p. 149
157. **I. V. Bondarev**, ' Surface electromagnetic phenomena in pristine and atomically doped carbon nanotubes '
- In: 6th International Symposium on Computational Challenges and Tools for Nanotubes (CCTN10 – NT10 satellite, June 27–28, 2010, Montréal, Canada). Book of abstracts, p.8
158. **I. V. Bondarev**, L. M. Woods, and A. Popescu, ' On the role of interband surface plasmons in carbon nanotubes '
- In: XIIIth International Conference on quantum optics and quantum information (May 28 – June 1, 2010, Kyiv, Ukraine). Book of abstracts, p. 35

159. **I. V. Bondarev**, K. Tatur, and L. M. Woods, ' Electrostatic field control of exciton-surface-plasmon coupling in individual carbon nanotubes '   
 In: Conference on Lasers and Electro-Optics/Quantum Electronics and Laser Science Conference 2010 Technical Digest (Optical Society of America, Washington, DC, 2010), QThH6
160. **I. V. Bondarev**, L. M. Woods, and K. Tatur, ' Exciton-plasmon coupling and biexcitonic nonlinearities in individual carbon nanotubes '   
 In: 10th International Conference "Physics of Light-Matter Coupling in Nanostructures" (April 12–16, 2010, Cuernavaca, Mexico). Book of abstracts, p. 20
161. L. M. Woods, A. Popescu, and **I. V. Bondarev**, ' Carbon nanotubes interactions: effects of chirality '   
 In: Bulletin of the American Physical Society, Vol. 55, No 2, p. B20.00005 (APS March Meeting, March 15–19, 2010, Portland, OR, USA)
162. **I. V. Bondarev**, L. M. Woods, and K. Tatur, Exciton emission under strong exciton-plasmon coupling in carbon nanotubes,   
 In: Bulletin of the American Physical Society, Vol. 55, No 2, p. H20.00013 (APS March Meeting, March 15–19, 2010, Portland, OR, USA)
163. M. Green and **I. V. Bondarev**, ' Two-qubit atomic entanglement in metallic carbon nanotubes '   
 In: Bulletin of the American Physical Society, Vol. 55, No 2, p. J31.00010 (APS March Meeting, March 15–19, 2010, Portland, OR, USA)
164. **I. V. Bondarev**, ' Quantum electrodynamic phenomena in atomically doped carbon nanotubes '   
 In: Basic and Applied Physical Research (2002–2009), ed. V. G. Baryshevsky. Belarusian State University Press, Minsk, 2009, p. 213 [in Russian]
165. A. L. Pushkarchuk, A. A. Khrutchinsky, S. A. Kuten, S. Ya. Kilin, A. P. Nizovtsev, V. A. Pushkarchuk, and **I. V. Bondarev**, ' DFT modeling of structural, electronic and spin properties of Eu@C<sub>60</sub>, Eu@C<sub>82</sub>, and N@C<sub>60</sub> as candidates for qubits ',   
 In: 3rd International Symposium on Methods of Computational Chemistry (June 28 – July 2, 2009, Odesa, Ukraine). Book of abstracts, p. 110
166. A. L. Pushkarchuk, A. A. Khrutchinsky, S. A. Kuten, V. A. Pushkarchuk, S. Ya. Kilin, A. P. Nizovtsev, and **I. V. Bondarev** ' Structure and physical properties of the Eu@C<sub>82</sub> and Eu@C<sub>60</sub> clusters by the DFT method '   
 In: Proceedings of the 17th International Symposium "Nanostructures: Physics and Technology", June 22–26, 2009, Minsk, Belarus, p.112
167. B. Vlahovic, I. Filikhin, **I. V. Bondarev**, V. Suslov, Y. Tang, M. Wu, ' InGaAs/GaAs quantum dots under effective and ab initio treatments: comparison and results ', Nano-World News at <http://www.nsti.org/news/>, May 2009 Issue, in: NSTI Innovation Profiles/Electronics & Microsystems
168. **I. V. Bondarev** and J. McConnell, ' Quantum confined Stark effect for exciton-plasmons in carbon nanotubes '   
 In: Bulletin of the American Physical Society, Vol. 54, No 1, p. Q11.00002 (APS March Meeting, March 16–20, 2009, Pittsburgh, PA, USA)

169. A. Popescu, L. M. Woods, and **I. V. Bondarev**, ' Profiling surfaces with a carbon nanotube oscillator '
- In: Bulletin of the American Physical Society, Vol. 54, No 1, p. Z28.00008 (APS March Meeting, March 16–20, 2009, Pittsburgh, PA, USA)
170. **I. V. Bondarev** ' Surface exciton-plasmons and optical response of small-diameter carbon nanotubes '
- In: XIIth International Conference on quantum optics and quantum information (September 20 – 23, 2008, Vilnius, Lithuania). Book of abstracts, p. 10
171. **I. V. Bondarev**, K. Tatur, and L. M. Woods, ' Strongly coupled surface plasmon-exciton excitations in small-diameter carbon nanotubes '
- In: Conference on Lasers and Electro-Optics/Quantum Electronics and Laser Science Conference and Photonic Applications Systems Technologies 2008 Technical Digest (Optical Society of America, Washington, DC, 2008), QTuD4
172. **I. V. Bondarev**, K. Tatur, and L. M. Woods, ' Surface exciton-plasmons in carbon nanotubes '
- In: Bulletin of the American Physical Society, Vol. 53, No 2, p. A28.00005 (APS March Meeting, March 10–14, 2008, New Orleans, LA, USA)
173. **I. V. Bondarev** and N. Noginova, ' Spontaneous decay and two-qubit entanglement in ion-doped carbon nanotubes '
- In: Bulletin of the American Physical Society, Vol. 53, No 2, p. C1.00147 (APS March Meeting, March 10–14, 2008, New Orleans, LA, USA)
174. A. Popescu, L. M. Woods, and **I. V. Bondarev**, ' Van Der Waals interaction between two parallel radially deformed single wall carbon nanotubes '
- In: Bulletin of the American Physical Society, Vol. 53, No 2, p. W30.00007 (APS March Meeting, March 10–14, 2008, New Orleans, LA, USA)
175. A. Popescu, L. M. Woods, and **I. V. Bondarev**, ' Oscillatory behavior of a double wall carbon nanotube near an infinite surface '
- In: Bulletin of the American Physical Society, Vol. 53, No 2, p. C1.00152 (APS March Meeting, March 10–14, 2008, New Orleans, LA, USA)
176. N. Noginova, G. Zhu, M. Mavy, M. A. Noginov, and **I. V. Bondarev**, ' Magnetic dipole systems for probing optical magnetism '
- In: Bulletin of the American Physical Society, Vol. 53, No 2, p. R1.00194 (APS March Meeting, March 10–14, 2008, New Orleans, LA, USA)
177. **I. V. Bondarev** ' Surface electromagnetic phenomena in pristine and doped carbon nanotubes '
- In: Bulletin of the American Physical Society, Vol. 52, No 15, p. JB.00008 (74th Annual Meeting of the Southeasten Section of the APS, November 8–10, 2007, Nashville, Tennessee, USA)
178. **I. V. Bondarev**, H. Qasmi and B. Vlahovic, ' Qubit entanglement from a bipartite atomic system under strong atom-field coupling in a carbon nanotube '
- In: Physics, Chemistry and Application of Nanostructures, eds. V. E. Borisenko, S.V.Gaponenko and V. S. Gurin. World Scientific, Singapore, 2007, p. 32

179. B. Vlahovic, D. Markoff, **I. Bondarev**, I. Filikhin, H. Melikyan, G. Vlahovic, and M. Wu ' Integration of nanoscale science and technology research into undergraduate curriculum at Minority Universities '   
 A book chapter in edited collection "Nanoscale Science and Engineering Education", eds. A. E. Sweeney and S. Seal. American Scientific Publishers, USA, 2007, Ch. 23, p. 397
180. **I. V. Bondarev** ' Exciton-polariton dynamics in carbon nanotubes '   
 In: Bulletin of the American Physical Society, Vol. 52, No 1, p. L28.00005 (APS March Meeting, March 5–9, 2007, Denver, Colorado, USA)
181. **I. V. Bondarev** and Ph. Lambin ' Near-field electrodynamics of atomically doped carbon nanotubes '   
 A book chapter in edited collection "Trends in Nanotubes Research", ed. D. A. Martin. Nova Science Publishers, USA, 2006, Ch. 6, p. 139
182. **I. V. Bondarev** and B. Vlahovic ' Qubit entanglement from a bipartite atomic system in a carbon nanotube '   
 In: Proceedings of the NSTI Nanotechnology Conference, May 7–11, 2006, Boston, Massachusetts, USA, Vol. 1, p. 202
183. **I. V. Bondarev** and B. Vlahovic ' Atomic entanglement in carbon nanotubes '   
 In: Bulletin of the American Physical Society, Vol. 51, No 1, Part 1, p. 396 (APS March Meeting, March 13–17, 2006, Baltimore, Maryland, USA)
184. **I. V. Bondarev** and Ph. Lambin ' Peculiarities of the van der Waals interactions in atomically doped carbon nanotube systems '   
 In: Physics, Chemistry and Application of Nanostructures, eds. V. E. Borisenko, S.V.Gaponenko and V. S. Gurin. World Scientific, Singapore, 2005, p. 32
185. **I. V. Bondarev** and Ph. Lambin ' Near-field electrodynamic properties of atomically doped carbon nanotubes '   
 In: Proceedings of the NSTI Nanotechnology Conference, May 8–12, 2005, Anaheim, California, USA, Vol. 2, p. 197
186. **I. V. Bondarev** and S. A. Kuten, ' Prospects for using positive muons to study physical properties of semiconductor, metallic and carbon nanostructures '   
 In: Nuclear and Particle Physics, ed. V. A. Gordeev et al.. St.-Petersburg Nuclear Physics Institute Press, 2005, p. 137 [in Russian]
187. **I. V. Bondarev**, G. Ya. Slepyan, S. A. Maksimenko, and Ph. Lambin ' Nonradiative spontaneous decay of an excited atom near a carbon nanotube '   
 SPIE 5219, p. 173, 2003
188. **I. V. Bondarev**, S. A. Maksimenko, G. Ya. Slepyan, I. L. Krestnikov, and A. Hoffmann ' Exciton-phonon coupling of localized quasi-2D excitons in semiconductor quantum well heterostructures '   
 In: Physics, Chemistry and Application of Nanostructures, eds. V. E. Borisenko, S.V.Gaponenko and V. S. Gurin. World Scientific, Singapore, 2003, p. 302
189. **I. V. Bondarev**, G. Ya. Slepyan and S. A. Maksimenko, ' Atom near a carbon nanotube: nonradiative spontaneous decay and atom-field coupling '   
 In: Physics, Chemistry and Application of Nanostructures, eds. V. E. Borisenko, S.V.Gaponenko and V. S. Gurin. World Scientific, Singapore, 2003, p. 298



190. **I. V. Bondarev**, G. Ya. Slepyan and S. A. Maksimenko, ' Photon vacuum renormalization and atomic decay near a carbon nanotube '
- In: Proceedings of the 26-th International Conference on physics of semiconductors (July 29 – August 3, 2002, Edinburgh, Scotland). World Scientific, Singapore, 2003, p. 342
191. **I. V. Bondarev**, ' Delocalized and self-trapped positronium in dielectric crystals '
- In: Nuclear and Particle Physics, ed. V. A. Gordeev et al.. St.-Petersburg Nuclear Physics Institute Press, 2002, p. 459
192. **I. V. Bondarev**, ' Positronium–phonon interactions and annihilation radiation of positronium  $2\gamma$ -decay quanta in ionic crystals '
- In: Basic and Applied Physical Research (1986–2001), ed. V. G. Baryshevsky. Belarusian State University Press, Minsk, 2001, p. 129 [in Russian]
193. **I. V. Bondarev**, ' Free and self-trapped positronium in ionic crystals: Theoretical analysis and comparison with an experiment '
- In: Nuclear and Particle Physics, ed. V. A. Gordeev et al.. St.-Petersburg Nuclear Physics Institute Press, 1998, p. 325
194. **I. V. Bondarev** and S. A. Kuten, ' Hyperfine structure of positronium energy levels in a crystal '
- In: Positron Spectroscopy of Solids, ed. A. Dupasquier and A. P. Mills, jr.. IOS Press, Amsterdam, 1995, p. 737
195. **I. V. Bondarev** and S. A. Kuten, ' Anisotropic hyperfine interactions of positronium in matter '
- In: Proceedings of IV International Conference on nuclear-spectroscopic methods of investigation of hyperfine interactions (July 26–28, 1991, Uzhgorod, USSR). Moscow State University Press, 1992, p. 17 [in Russian]

### (C) Pre-prints:

196. Z. Sun, J. Beaumariage, Q. Cao, K. Watanabe, T. Taniguchi, B. Hunt, **I. V. Bondarev**, and D. W. Snoke, ' Toward a room temperature Schafroth superconductor based on charged excitonic complexes '
- E-print: arXiv:2003.05850v2, 13 Mar 2020
197. **I. V. Bondarev**, O. L. Berman, R. Ya. Kezerashvili, and Y. E. Lozovik, ' Crystal phases of charged interlayer excitons in van der Waals heterostructures '
- E-print: arXiv2002.09988v1, 23 Feb 2020
198. **I. V. Bondarev**, H. Mousavi, and V. M. Shalaev, ' Transdimensional epsilon-near-zero modes in planar plasmonic nanostructures '
- E-print: arXiv1908.00640v2, 7 Nov 2019
199. **I. V. Bondarev**, ' Finite-thickness effects in plasmonic films with periodic cylindrical anisotropy '
- E-print: arXiv1810.07303v1, 16 Oct 2018
200. **I. V. Bondarev**, H. Mousavi, and V. M. Shalaev, ' Optical response of finite-thickness ultrathin plasmonic films '
- E-print: arXiv1806.00654v1, 2 Jun 2018

201. **I. V. Bondarev** and M. R. Vladimirova, ' Complexes of dipolar excitons in layered quasi-two-dimensional nanostructures '   
 E-print: arXiv1712.10312v1, 24 Dec 2017
202. **I. V. Bondarev** and V. M. Shalaev, ' Universal features of the optical properties of ultrathin plasmonic films '   
 E-print: arXiv1708.03553v1, 11 Aug 2017
203. **I. V. Bondarev**, ' Configuration space method for calculating binding energies of exciton complexes in quasi-1D/2D semiconductors '   
 E-print: arXiv1605.02348v1, 8 May 2016
204. M. F. Gelin and **I. V. Bondarev**, ' One-dimensional transport in hybrid metal-semiconductor nanotube systems '   
 E-print: arXiv1512.01285v1, 3 Dec 2015
205. D. Drosdoff, **I. V. Bondarev**, A. Widom, R. Podgornik, and L. M. Woods, ' Charge induced fluctuation forces in graphitic nanostructures '   
 E-print: arXiv1502.03077v1, 10 Feb 2015
206. **I. V. Bondarev**, ' Plasmon enhanced Raman scattering effect for an atom near a carbon nanotube '   
 E-print: arXiv1407.5142v3, 15 Dec 2014
207. **I. V. Bondarev**, ' Relative stability of excitonic complexes in quasi-one-dimensional semiconductors '   
 E-print: arXiv1405.0777v2, 3 August 2014
208. **I. V. Bondarev** and A. V. Meliksetyan, ' Possibility for exciton Bose-Einstein condensation in carbon nanotubes '   
 E-print: arXiv1304.2804v2, 17 Jun 2013
209. D. Drosdoff, A. D. Phan, L. M. Woods, **I. V. Bondarev**, and J. F. Dobson, ' Effects of spatial dispersion on the Casimir force between graphene sheets '   
 E-print: arXiv1204.4438v1, 19 Apr 2012
210. **I. V. Bondarev**, ' Single wall carbon nanotubes as coherent plasmon generators '   
 E-print: arXiv1109.0541v2, 16 Jan 2012
211. **I. V. Bondarev**, ' Asymptotic exchange coupling of quasi-1D excitons in carbon nanotubes '   
 E-print: arXiv1010.6035v2, 2 Feb 2011
212. **I. V. Bondarev**, L. M. Woods, and A. Popescu, ' Exciton-plasmon interactions in individual carbon nanotubes '   
 E-print: arXiv:1011.0957v1, 3 Nov 2010
213. **I. V. Bondarev**, ' Surface electromagnetic phenomena in pristine and atomically doped carbon nanotubes '   
 E-print: arXiv:0907.1863v1, 10 Jul 2009
214. **I. V. Bondarev**, L. M. Woods, and K. Tatur, ' Strong exciton-plasmon coupling in semiconducting carbon nanotubes '   
 E-print: arXiv:0907.1335v1, 8 Jul 2009

215. **I. V. Bondarev**, K. Tatur, and L. M. Woods, ' Exciton-plasmon coupling in carbon nanotubes '   
 E-print: arXiv:0708.3262v2, 28 Dec 2007
216. **I. V. Bondarev** and B. Vlahovic, ' Atomic states entanglement in carbon nanotubes '   
 E-print: cond-mat/0605579, 23 May 2006
217. **I. V. Bondarev** and B. Vlahovic, ' Optical absorption by atomically doped carbon nanotubes '   
 E-print: cond-mat/0601599, 25 Jan 2006
218. **I. V. Bondarev** and Ph. Lambin, ' Near-field electrodynamics of atomically doped carbon nanotubes '   
 E-print: cond-mat/0501593, 25 Jan 2005
219. **I. V. Bondarev**, Y. Nagai, M. Kakimoto, and T. Hyodo, ' Nonpolar optical scattering of positronium in Magnesium Fluoride '   
 E-print: cond-mat/0411577, 23 Nov 2004
220. **I. V. Bondarev** and Ph. Lambin ' van der Waals coupling in atomically doped carbon nanotubes '   
 E-print: cond-mat/0410216, 8 Oct 2004
221. **I. V. Bondarev** and Ph. Lambin, ' van der Waals energy under strong atom-field coupling in doped carbon nanotubes '   
 E-print: cond-mat/0404211, 8 Apr 2004
222. **I. V. Bondarev** and Ph. Lambin, ' Spontaneous decay dynamics in atomically doped carbon nanotubes '   
 E-print: cond-mat/0401332, 19 Jan 2004
223. **I. V. Bondarev**, G. Ya. Slepyan, S. A. Maksimenko, and Ph.Lambin, ' Vacuum-field Rabi oscillations in atomically doped carbon nanotubes '   
 E-print: cond-mat/0311065, 16 Jan 2004
224. **I. V. Bondarev**, Y. Nagai, M. Kakimoto, and T. Hyodo, ' Nonpolar optical scattering of positronium in Magnesium Fluoride '   
 Pre-Print *N<sup>o</sup>* LAPP-EXP-2004-10, Laboratoire d'Annecy-le-vieux de Physique des Particules, Annecy-le-vieux, France, 2004
225. **I. V. Bondarev**, G. Ya. Slepyan and S. A. Maksimenko, ' Spontaneous decay of excited atomic states near a carbon nanotube '   
 E-print: cond-mat/0204433, 19 Apr 2002
226. **I. V. Bondarev**, ' Theoretical aspects of the positronium spectroscopy of solids '   
 D.Sc. thesis review. Belarusian Academy of Sciences Press, 2001 [in Russian]
227. **I. V. Bondarev** and S. A. Kuten, ' Hydrogen-like atom in laser field: invariant atomic parameters in the ground state '   
 Pre-Print No IC/94/217, International Centre for Theoretical Physics, Trieste, Italy, 1994
228. **I. V. Bondarev**, ' Effects resulted from the hyperfine structure of the ground state of hydrogen-like atoms in external fields '   
 Ph.D. thesis review. Belarusian State University Press, 1993 [in Russian]

229. **I. V. Bondarev** and S. A. Kuten, ' Hyperfine structure of positronium energy levels in a crystal '  
Pre-Print No IC/93/226, International Centre for Theoretical Physics, Trieste, Italy, 1993

**(D) Patents:**

230. A. Popescu, L. M. Woods, and **I. V. Bondarev**, ' Carbon nanotube oscillator surface profiling device and method of use '  
US Patent No 8,060,943 (issued on November 15, 2011); Assignees: University of South Florida (Tampa, FL), North Carolina Central University (Durham, NC)