Name:	**Igor BONDAREV**
Address:	Mathematics & 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@nccu.edu

University Education/Scientific Degrees

D.Sc. (Dr.hab.), Jun 2001 *(Doctor of Physical & Mathematical Sciences)*	Theoretical Condensed Matter Physics National Academy of Sciences of the Republic of Belarus, Minsk *(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

Major Projects and Research Grants

Awarded in last 20 years (over 30 funded projects in condensed matter theory since 1994)

1. Unconventional superconducting states in bilayer semiconductors
   Principal Investigators: I.V.Bondarev (theory), D.W.Snoke (experiment, U.Pittsburgh)
   Funded by: US Army Research office (*active*)

2. Transdimensional chiral metasurfaces: Theory and applications
   Principal Investigator: I.V.Bondarev
   Funded by: US Army Research office (*active*)

3. Quantum nanophotonics with periodic carbon nanotube arrays
   Principal Investigator: I.V.Bondarev
   Funded by: US National Science Foundation (09/2018–08/2023)

4. Plasmon-mediated photophysics of complex hybrid nanostructures
   Principal Investigator: I.V.Bondarev
   Funded by: US Department of Energy, Office of Basic Energy Sciences (09/2017–08/2022)

5. Near-field electrodynamics of carbon nanostructures
   Principal Investigator: I.V.Bondarev
   Funded by: US Department of Energy, Office of Basic Energy Sciences (09/2014–08/2017)

6. Organic electronics and photonics: Materials design, processing, and manufacturing for defense and energy needs
   Principal Investigators: I.V.Bondarev (theory), H.Ade (experiment, NC State U.)
   Funded by: North Carolina State Research Opportunity Initiative (03/2015–06/2017)

7. Tunable plasmon nanooptics with carbon nanotubes
   Principal Investigator: I.V.Bondarev
   Funded by: US National Science Foundation (09/2013–08/2018)

8. 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)

9. 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)

10. Nanotube composites: Near-field electrodynamics and applications
    Principal Investigator: I.V.Bondarev
    Funded by: US National Science Foundation (08/2010–07/2012)

11. Atomically doped carbon nanotubes for advanced optoelectronics
    Principal Investigator: I.V.Bondarev
    Funded by: US National Science Foundation (08/2006–07/2008)

12. 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)

13. Positrons and positronium in nanoporous materials
    Principal Investigator: I.V.Bondarev
    Funded by: University of Savoie, France (11-12/2004)

14. Spontaneous emission dynamics of quantum dots in 2D photonic crystals
    Principal Investigators: I.V.Bondarev (theory), J.Finley, G.Abstreiter (TU Munich)
    Funded by: Deutsche Forschungsgemeinschaft (DFG), Germany (9-10/2004)

15. Electron-phonon and electromagnetic effects in carbon nanotubes
    Principal Investigators: I.V.Bondarev, Ph.Lambin (U. Namur)
    Funded by: Belgian Office for Scientific, Technical, and Cultural Affairs (5/2003–4/2004)

Teaching Experience

Courses taught:

Math & 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 (alphabetically): Oluwafemi Adelegan, Kossi Agbeve, Adewale Akinfaderin, Todor Antonijevic, Frederick Aryeetey, Oluwatoyin Ruth Atikekeresola, Joseph Estevez, Noiki Funmilola, Syed Gilani, Misty Green, Alex Gulyuk, Patrick Jacobs, Justice McConnel, Subash Nepal, Oni Olimide, Michael Pugh, Hicham Qasmi, Bernhard Schmid, Toros Torosyan, Luibov Zhemchuzhna

Postdoctoral researchers mentored (alphabetically): Dr. Chandra Adhikari, Dr. Dipendra Dahal, Dr. David Drosdoff, Dr. Nguyen Hieu, Dr. Priyadarshini Kapri, Dr. Peter Morse, Dr. Areg Meliksetyan, Dr. Hamze Mousavi, Dr. Adrian Popescu, Dr. Firoz Seikh

Visitors sponsored (alphabetically): Prof. Oleg Berman (NY City College of Technology, City University of New York, USA), Dr. Svend-Age Biehs (Carl von Ossietzky University, Oldenburg, GERMANY), Prof. Mikhail Braun (St.-Petersburg State University, RUSSIA), Prof. Alexey Chizhov (N.N.Bogoliubov Lab, JINR, Dubna, RUSSIA), Dr. Karen Dvoyan (Russian-Armenian University, Yerevan, ARMENIA), Dr. Maksim Helin (Technical University of Munich, GERMANY), Dr. Valerii Marachevskii (St.-Petersburg State University, RUSSIA), Prof. David Tomanek (Michigan State University, USA)

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 State of North Carolina, USA, 2025:*
  NC State Excellence in Service certificate in recognition of twenty years of service

- *The US Army Research Office, 2024:*
  award No W911NF2410237; project title — "Unconventional superconducting states in bilayer semiconductors"; period — 09/2024–08/2028; amount — $880,000; PI — Igor Bondarev, NCCU (theory); Co-PI — David Snoke, U. Pittsburgh, PA (experiment)

- *The US Army Research Office, 2023:*
  award No W911NF2310206; project title — "Transdimensional chiral metasurfaces: Theory and Applications"; period — 06/2023–05/2027; amount — $783,353

- *Kavli Institute for Theoretical Physics (KITP), UC Santa Barbara, USA, 2023:*
  Follow-on award for one-week KITP research workshop visit in Spring 2024

- *Kavli Institute for Theoretical Physics (KITP), UC Santa Barbara, USA, 2022:*
  KITP Fellow 2022-23 recognition award

- *The State of North Carolina, USA, 2021:*
  NC State Excellence in Service certificate in recognition of fifteen years of service

- *The US National Science Foundation, 2018:*
  award No DMR-1830874; project title — "EiR: Quantum nanophotonics with periodic carbon nanotube arrays"; period — 09/2018–08/2023; amount — $486,157

- *The US Department of Energy, Office of Basic Energy Sciences, 2017:*
  award No DE-SC0007117; project title — "Plasmon-mediated photophysics of complex hybrid nanostructures"; period — 09/2017–08/2022; amount — $424,000

- *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; 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 carbone 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

- 8/2024 – Present: Math & Physics Faculty Search Committee Member
- 8/2019 – Present: Member of the International Society for Optics and Photonics (SPIE)
- 4/2017 – Present: Member of the American Materials Research Society (MRS)
- 8/2015 – Present: Math & Physics RPT Committee Member
- 8/2010 – Present: Math & Physics Physics MS program Committee Member
- 5/2007 – Present: Proposal reviewer for national and foreign research funding agencies (ARO, ASF, DOE, ESF, NASA, NSF, ORAU, QNRF)
- 3/2006 – Present: Member of the American Physical Society (APS)
- 1/2000 – Present: Physical Review/Physical Review Letters official referee
- 10/2024, 3/2026: PhD Thesis Committee Member (external), Department of Physics & Astronomy, University of Pittsburgh, PA (PhD candidates – Q.Wan, B.Bobby; advisor – Prof. David Snoke)
- 5/2024: College Board Visiting Fellow in assessment of the AP Higher Education program "AP Calculus AB"
- 4/2024: MRS Spring Meeting Career Fair Mentor (Materials Research Society)
- 3/2024: KITP (Kavli Institute for Theoretical Physics) Workshop Organizer, International Workshop on Photonic Spin Hall Effect in Transdimensional Materials, KITP, University of California Santa Barbara (March 10–16, 2024, Santa Barbara, CA, USA)

- 4/2023: PhD Thesis Committee Member (external), CUNY Graduate Center, NY City College of Technology, City University of New York (PhD candidate Ms. Anastasia Spiridonova, advisor Prof. Roman Kezerashvili)
- 9/2019 – 8/2022: NCCU Faculty Senate Member (Alternate)
- 9/2019 – 6/2020: Preparing Future Faculty (PFF) Mentor and Visiting Scholar in the Graduate School at Duke University
- 9/2017 – 6/2020: NCCU College of Arts & Sciences Committee Member (Grievance)
- 9/2019: International Program Committee Chair, International School on Two-Dimensional Crystals and Photonics (2DCP), Tbilisi State University (September 9–14, 2019, Tbilisi, GEORGIA)
- 8/2019: 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)
- 12/2018: Session Chair (Photonic and Optoelectornic Materials) at the "Smart Nanomaterials 2018: Advances, Innovation and Applications" International Conference (December 10–13, 2018, Paris, FRANCE)
- 9/2012 – 5/2015: NCCU Faculty Senate Member (Honorary Degrees Committee)
- 4/2015: Session Chair (Optical Transport II) at the 2015 International EMN Optoelectronics Meeting (Energy Materials & Nanotechnology, April 24–27, 2015, Beijing, China)
- 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)]
- 9/2010 – 5/2012: NCCU College of Science & Technology Committee Member (Academic Policies and Procedures, Grievance)
- 11/2008, 5/2010: NSF QMHP panel reviewer (Quantum Modeling of High-Performance devices and systems)
- 6/2009: Panel Chair of the NASA APRA review panel (Astronomy and Physics Research and Analysis: IR detector development)
- 6/2008: NASA APRA panel reviewer (Astronomy and Physics Research and Analysis: IR detector development)
- 5/2007: NSF EPDT panel reviewer (Electronics, Photonics & Device Technologies)
- 1/1997 – 8/2005: Member of the Academic Council of the Institute for Nuclear Problems at the Belarusian State University, Minsk
- 5/2003 – 4/2004: Member of the Belgian Physical Society
- 1/1995 – 12/1996: Member of the New York Academy of Sciences

Invited Seminars

1. Strongly correlated collective excitations in transdimensional nanostructures of metals and semiconductors
   Invited seminar at the International School on Functional Materials for Modern Technologies, Batumi State University, GEORGIA (October 4, 2022)

2. Excitons, plasmons, and excitonic complexes in quasi-1D semiconductors. The theoretical perspective
   KITP invited seminar at the focus session "Emerging Regimes and Implications of Quantum and Thermal Fluctuational Electrodynamics" (August 1, 2022, Kavli Institute for Theoretical Physics, UC Santa Barbara, USA)

3. Strongly correlated collective excitations in planar transdimensional nanostructures
   KITP invited seminar at the focus session "Emerging Regimes and Implications of Quantum and Thermal Fluctuational Electrodynamics" (July 26, 2022, Kavli Institute for Theoretical Physics, UC Santa Barbara, USA)

4. Strongly correlated collective excitations in low-dimensional quantum materials
   Invited seminar in the Department of Physics at the Duke University, Durham, NC, USA (November 19, 2020)

5. Collective excitations in quasi-2D nanostructures
   Invited seminar at the International School on 2D Crystals and Photonics, Tbilisi State University, GEORGIA (September 12, 2019)

6. 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)

7. 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, Mediterranian Institute of Fundamental Physics (MIFP), Marino – Rome, ITALY (June 14, 2018)

8. 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)

9. 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)

10. 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)

11. 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)

12. 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)

13. 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)

14. 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)

15. 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)

16. 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)

17. Nanotube plasmonics
    Invited seminar in the Center for Theoretical Physics at the New York City College of Technology, NY, USA (February 9, 2012)

18. 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)

19. 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)

20. 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)

21. 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)

22. Carbon nanotube nanophotonics
    Invited seminar in the Department of Physics at the Duke University, Durham, NC, USA (October 15, 2009)

23. 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)

24. 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)

25. 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)

26. 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)

27. 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)

28. Electromagnetic 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)

29. 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)

30. 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)

31. Positronium in crystalline dielectrics
    Invited seminar in the positron/positronium physics research group led by Dr. S.Gninenko at CERN, France (November 3, 2004)

32. 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)

33. 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)

34. Atomic spontaneous decay rate enhancement near a carbon nanotube
    Invited seminar at the Physics Department of the University of Namur, Belgium (June 23, 2003)

35. 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)

36. 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)

37. 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)

38. 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)

39. Crystal field effect on the angular distribution of the photons resulting from the 3γ-decay of positronium
Invited seminar at the Physics Department of the Tokyo Metropolitan University, Japan (February 10, 1996)

40. Influence of exchange and quadrupole interactions on the angular distribution of the photons resulting from the 3γ-decay of positronium
Invited seminar at the Institute for Nuclear Physics, Cracow, Poland (November 25, 1994)

Conference Presentations

1. Nonlocality and nonlinearity in transdimensional plasmonics,
Invited talk at the SPIE Optics and Photonics Conference (August 23–27, 2026, San Diego, CA, USA)

2. Light-induced electron pairing in laser-excited semiconductor-metal heterostructures,
[in collaboration with D.Snoke's experimental group (U.Pittsburgh, PA)]
Invited talk at the SPIE Optics and Photonics Conference (August 23–27, 2026, San Diego, CA, USA)

3. Interplay between nonlocality and nonlinearity in transdimensional plasmonic systems,
Invited talk at the 16th International Conference on Metamaterials, Photonic Crystals and Plasmonics (META 2026, July 14–17, 2026, Dublin, IRELAND)

4. Electromagnetic response non-reciprocity of transdimensional plasmonic film systems,
Contributed talk at the MRS Spring Meeting (April 26–May 1, 2026, Honolulu, HI, USA)

5. Crystallization of the transdimensional electron liquid,
[with A.Boltasseva, V.M.Shalaev (Purdue U.) and J.Khurgin (Johns Hopkins U.)]
Contributed talk at the APS March Meeting (March 16–20, 2026, Denver, CO, USA)

6. Charged bosons made of fermions in laser-excited semiconductor-metal heterostructures,
Invited talk at the 55th Winter Colloquium on the Physics of Quantum Electronics (PQE, January 5–9, 2026, Snowbird, UT, USA)

7. Strong electron correlations in transdimensional materials,
Invited talk at the Progress in Electromagnetics Research Symposium (PIERS, November 5–9, 2025, Chiba, JAPAN)

8. Collective excitations and electromagnetic response of carbon nanotube metasurfaces,
Invited talk at the International Conference dedicated to the 40th anniversary of the buckminsterfullerene discovery (C60@40, October 13–14, 2025, Rice University, TX, USA)

9. Theory of light-induced electron pairing in bilayer semiconductor structures near metals,
[in collaboration with D.Snoke (U.Pittsburgh, PA)]
Contributed talk at the 2D Excitonic Insulator Workshop (EI2025, September 1–3, 2025, Modena, ITALY)

10. Goos-Hänchen effect in transdimensional plasmonic film systems,
[in collaboration with S.-A.Biehs, University of Oldenburg, Germany]
Contributed talk at the SPIE Optics and Photonics Conference (August 3–7, 2025, San Diego, CA, USA)

11. Confinement-induced nonlocality and strong electron correlations in transdimensional plasmonic systems: Theoretical perspectives,
Invited talk at the 15th International Conference on Metamaterials, Photonic Crystals and Plasmonics (META 2025, July 22–25, 2025, Malaga, SPAIN)

12. Magnetic field effect on quaternion excitonic complexes in bilayer structures near metals,
[in collaboration with D.Snoke (U.Pittsburgh, PA)]
Contributed talk at the European Physical Society's Condensed Matter Division International Conference (FisMat2025/CondMat, July 7–11, 2025, Venice, ITALY)

13. Light-induced electron pairing in laser-excited semiconductor heterostructures,
[in collaboration with D.Snoke (U.Pittsburgh, PA)]
Invited talk (Seminar 1: Modern Trends in Laser Physics) at the 33rd International Laser Physics Conference (LPHYS'25, June 30 – July 4, 2025, Szeged, HUNGARY)

14. Electromagnetic response of transdimensional quantum materials,
Invited talk (Seminar 11: Metasurfaces & Metamaterials) at the 33rd International Laser Physics Conference (LPHYS'25, June 30 – July 4, 2025, Szeged, HUNGARY)

15. Magnetic field effect on quaternion excitonic complexes in bilayer structures near metals,
[in collaboration with D.Snoke (U.Pittsburgh, PA)]
Contributed talk at the 25th International Conference on the science and application of nanotubes and low-dimensional materials (June 15–20, 2025, Kyoto University, JAPAN)

16. Goos-Hänchen effect singularities in transdimensional plasmonic films,
[in collaboration with S.-A.Biehs, University of Oldenburg, Germany]
Contributed talk at the 11th International Conference on Surface Plasmon Photonics (SPP11, May 19–23, 2025, Tokyo, JAPAN)

17. Topological darkness and Goos-Hänchen effect in transdimensional systems,
[in collaboration with S.-A.Biehs, University of Oldenburg, Germany]
Contributed talk at the MRS Spring Meeting (April 7–11, 2025, Seattle, WA, USA)

18. Electromagnetic response nonreciprocity induced by spin-orbit coupling in transdimensional plasmonic systems,
Contributed talk at the APS March Meeting (March 16–21, 2025, Anaheim, CA, USA)

19. Magnetic field effect on quaternion excitonic complexes in bilayer structures near metals,
[in collaboration with D.Snoke (U.Pittsburgh, PA)]
Contributed talk at the APS March Meeting (March 16–21, 2025, Anaheim, CA, USA)

20. Definitive evidence of excitonic charged bosons in a bilayer system,
[in collaboration with D.Snoke's group (U.Pittsburgh, PA)]
Contributed talk at the APS March Meeting (March 16–21, 2025, Anaheim, CA, USA)

21. Points of topological darkness of transdimensional plasmonic films,
[in collaboration with S.-A.Biehs, University of Oldenburg, Germany]
Contributed talk at the APS March Meeting (March 16–21, 2025, Anaheim, CA, USA)

22. Theory of electron Wigner crystallization in transdimensional materials,
Invited talk at the 54th Winter Colloquium on the Physics of Quantum Electronics (PQE, January 6–10, 2025, Snowbird, UT, USA)

23. Confinement-induced nonlocality in transdimensional plasmonic materials,
Invited talk at the International Advanced Multifunctional Metamaterials Workshop (AMM, November 18–19, 2024, Duke University, NC, USA)

24. Giant fluorescence anisotropy of a dipole emitter near a carbon nanotube metasurface,
Contributed talk at the 9th International Workshop on nanotube optics and nanospectroscopy (September 15–19, Heidelberg, GERMANY)

25. Electromagnetic response nonlocality and heat transfer in transdimensional plasmonic film systems,
[in collaboration with S.-A.Biehs, University of Oldenburg, Germany]
Invited talk at the SPIE Optics and Photonics Conference (August 18–22, 2024, San Diego, CA, USA)

26. Anisotropic fluorescence enhancement near carbon nanotube metasurfaces,
Contributed talk at the 36th International Conference on the Physics of Semiconductors (July 28–August 2, 2024, Ottawa, CANADA)

27. Controlling single-photon emission with ultrathin transdimensional plasmonic films,
Contributed talk at the 36th International Conference on the Physics of Semiconductors (July 28–August 2, 2024, Ottawa, CANADA)

28. Resonance fluorescence anisotropy of a dipole emitter near an ultrathin aligned carbon nanotube film,
Contributed talk at the 24rd International Conference on the science and application of nanotubes and low-dimensional materials (June 23–28, 2024, MIT, Cambridge, MA, USA)

29. Confinement-induced nonlocality and Casimir force in transdimensional systems,
[in collaboration with L.M.Woods (USF) and M.Antezza (U.Montpellier, France)]
Contributed talk at the 24rd International Conference on the science and application of nanotubes and low-dimensional materials (June 23–28, 2024, MIT, Cambridge, MA, USA)

30. Far- and near-field heat transfer in transdimensional film systems,
[in collaboration with S.-A.Biehs, University of Oldenburg, Germany]
Contributed talk at the MRS Spring Meeting (April 22–26, 2024, Seattle, WA, USA)

31. Magnetic-field-induced Wigner crystallization of charged interlayer excitons in transition metal dichalcogenide bilayers,
[in collaboration with Yu.E.Lozovik (Russian Academy of Sciences)]
Contributed talk at the MRS Spring Meeting (April 22–26, 2024, Seattle, WA, USA)

32. Spontaneous emission enhancement anisotropy near an ultrathin carbon nanotube film,
Contributed talk at the APS March Meeting (March 3–8, 2024, Minneapolis, MN, USA)

33. Far- and near-field heat transfer in ultrathin plasmonic films,
[in collaboration with S.-A.Biehs, University of Oldenburg, Germany]
Contributed talk at the APS March Meeting (March 3–8, 2024, Minneapolis, MN, USA)

34. Confinement-induced nonlocality and Casimir force in transdimensional film systems,
[in collaboration with L.M.Woods (USF) and M.Antezza (U.Montpellier, France)]
Contributed talk at the APS March Meeting (March 3–8, 2024, Minneapolis, MN, USA)

35. Magnetic-field-induced Wigner crystallization of charged interlayer excitons in van der Waals heterostructures,
[in collaboration with Yu.E.Lozovik (Russian Academy of Sciences)]
Contributed talk at the 30th European Physical Society's Condensed Matter Division International Conference (CMD30, September 4–8, 2023, Milan, Italy)

36. Single-photon emission near a transdimensional plasmonic plate,
Contributed talk at the SPIE Optics and Photonics Conference (August 20–24, 2023, San Diego, CA, USA)

37. Near-field quantum electrodynamics of transdimensional optical metasurfaces
Invited talk at the Progress in Electromagnetics Research Symposium (PIERS, July 3–6, 2023, Prague, Czech Republic)

38. Interlayer exciton crystallization phenomena in bilayer TMD heterostructures,
[in collaboration with Yu.E.Lozovik (Russian Academy of Sciences)]
Contributed talk at the 23rd International Conference on the science and application of nanotubes and low-dimensional materials (June 4–9, 2023, Arcachon near Bordeaux, France)

39. Unidirectional hyperbolic metasurfaces of periodically aligned carbon nanotubes,
Contributed talk at the 23rd International Conference on the science and application of nanotubes and low-dimensional materials (June 4–9, 2023, Arcachon near Bordeaux, France)

40. Single-photon emission of a quantum dipole near transdimensional plasmonic film,
Contributed talk at the MRS Spring Meeting (April 10–14, 2023, San Francisco, CA, USA)

41. Broadly tunable unidirectional hyperbolic metasurfaces of ultrathin periodically aligned carbon nanotubes,
Contributed talk at the MRS Spring Meeting (April 10–14, 2023, San Francisco, CA, USA)

42. Controlling single-photon emission with ultrathin transdimensional plasmonic films,
Contributed talk at the APS March Meeting (March 5–10, 2023, Las Vegas, NV, USA)

43. Magneto-optical characterization of quaternion state in TMD bilayers near metal surfaces,
[in collaboration with D.Snoke's group (U.Pittsburgh, PA)]
Contributed talk at the APS March Meeting (March 5–10, 2023, Las Vegas, NV, USA)

44. Magnetic-field-induced Wigner crystallization of charged interlayer excitons in van der Waals heterostructures,
[in collaboration with Yu.E.Lozovik (Russian Academy of Sciences)]
Contributed talk at the APS March Meeting (March 5–10, 2023, Las Vegas, NV, USA)

45. Charged interlayer excitons in van der Waals heterostructures
[in collaboration with Yu.E.Lozovik (Russian Academy of Sciences)]
Invited talk at the International School on Functional Materials for Modern Technologies, Batumi State University, GEORGIA (October 4, 2022)

46. Charged interlayer exciton crystallization phenomena in bilayer transition-metal-dichalcogenides,
[in collaboration with Yu.E.Lozovik (Russian Academy of Sciences)]
Contributed talk at the SPIE Optics and Photonics Conference (August 21–25, 2022, San Diego, CA, USA)

47. Quaternion complexes in bilayer semiconductors near a metal surface,
[in collaboration with D.Snoke (U.Pittsburgh, PA)]
Contributed talk at the 35th International Conference on the Physics of Semiconductors (June 27–30, 2022, Sydney, AUSTRALIA)

48. Epsilon-near-zero modes in transdimensional planar plasmonic nanostructures,
[in collaboration with V.M.Shalaev (Purdue U.)]
Contributed talk at the 35th International Conference on the Physics of Semiconductors (June 27–30, 2022, Sydney, AUSTRALIA)

49. Optical response of ultrathin periodically aligned carbon nanotube films: Local field and inhomogeneity effects,
Contributed talk at the 35th International Conference on the Physics of Semiconductors (June 27–30, 2022, Sydney, AUSTRALIA)

50. Strongly correlated states of charged interlayer excitons in van der Waals heterostructures,
[in collaboration with Yu.E.Lozovik (Russian Academy of Sciences)]
Contributed talk at the 35th International Conference on the Physics of Semiconductors (June 27–30, 2022, Sydney, AUSTRALIA)

51. Magnetic-field-induced Wigner crystallization of charged interlayer excitons in van der Waals heterostructures,
[in collaboration with Yu.E.Lozovik (Russian Academy of Sciences)]
Contributed talk at the 35th International Conference on the Physics of Semiconductors (June 27–30, 2022, Sydney, AUSTRALIA)

52. Broadly tunable unidirectional negative refraction with ultrathin periodically aligned carbon nanotube films,
Contributed talk at the International Annual Meeting on Photonic Devices (AMPD2022, April 28–29, 2022, Zuse Institute Berlin, Germany)

53. Charged bosons made of fermions in bilayer structures near metallic surfaces,
[in collaboration with D.Snoke (U.Pittsburgh, PA)]
Contributed talk at the virtual APS March Meeting (March 14–18, 2022)

54. Charged bosonic excitonic state in bilayer structures with strong metallic screening,
[in collaboration with D.Snoke's experimental group (U.Pittsburgh, PA)]
Contributed talk at the virtual APS March Meeting (March 14–18, 2022)

55. Electron confinement effect on the optical properties in transdimensional plasmonic TiN,
[in collaboration with V.M.Shalaev's experimental group (Purdue U.)]
Contributed talk at the virtual APS March Meeting (March 14–18, 2022)

56. Collective excitations in ultrathin metasurfaces of self-assembled carbon nanotubes,
Contributed talk at the virtual APS March Meeting (March 14–18, 2022)

57. Transdimensional Quantum Heterostructures: Electromagnetic response peculiarities and collective many-particle effects,
Contributed talk at the 2021 (virtual) Theoretical Condensed Matter Physics Principal Investigators' Meeting, Materials Sciences and Engineering Division, Office of Basic Energy Science, US Department of Energy (October 26–28, 2021, Gaithersburg, MD, USA)

58. Collective excitations and optical response of ultrathin carbon nanotube films,
Contributed talk at the SPIE Optics and Photonics Conference (August 1–5, 2021, San Diego, CA, USA)

59. Charged fermion and boson exciton complexes in quasi-2D semiconductors,
[in collaboration with D.Snoke (U.Pittsburgh, PA)]
Contributed talk at the 21st (virtual) International Conference on the science and application of nanotubes and low-dimensional materials (June 6–11, 2021, Rice University, TX, USA)

60. Collective excitations in ultrathin periodic carbon nanotube arrays,
Contributed talk at the 21st (virtual) International Conference on the science and application of nanotubes and low-dimensional materials (June 6–11, 2021, Rice University, TX, USA)

61. Normal and Wigner crystal phases of interlayer trions in van der Waals heterostructures,
[in collaboration with Yu.E.Lozovik (Russian Academy of Sciences)]
Contributed talk at the virtual MRS Spring Meeting (April 17–21, 2021)

62. Collective excitations in ultrathin carbon nanotube arrays,
Contributed talk at the virtual MRS Spring Meeting (April 17–21, 2021)

63. Charged interlayer excitons in van der Waals heterostructures,
[in collaboration with Yu.E.Lozovik (Russian Academy of Sciences)]
Contributed talk at the virtual APS March Meeting (March 15–19, 2021)

64. Exciton-plasmon coupling in ultrathin periodically aligned carbon nanotube arrays,
Contributed talk at the virtual APS March Meeting (March 15–19, 2021)

65. Plasmons, excitons, and excitonic complexes in transdimensional quantum materials,
Invited talk at the Triangle Hard Matter Workshop on Energy Materials, Quantum Materials and Metamaterials — The Duke Materials Initiative (December 7–8, 2020, Duke University, Durham, NC, USA)

66. Crystal phases of interlayer trions in bilayer van der Waals heterostructures,
Invited talk at the virtual International Workshop on Nanotechnology (TNANO2020, October 5–8, 2020)

67. Planar plasmonic nanostructures in the transdimentional regime,
Invited talk at the SPIE Optics and Photonics Conference (August 23–27, 2020, San Diego, CA, USA)

68. Transdimensional epsilon-near-zero modes in planar plasmonic nanostructures,
[in collaboration with V.M.Shalaev (Purdue U.)]
Contributed talk at the International Conference on nanophotonics of 2D materials (July 13–16, 2020, San-Sebastián, Spain)

69. 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)

70. 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)

71. 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)

72. 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)

73. 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)

74. 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)

75. 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 plasmon photonics (SPP9, May 26–31, 2019, Copenhagen, Denmark)

76. 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)

77. Finite-thickness effects in plasmonic films with periodic cylindrical anisotropy,
Contributed talk at the APS March Meeting (March 4–8, 2019, Boston, MA, USA)

78. Radiative spontaneous decay enhancement near an ultrathin plasmonic film,
Contributed talk at the APS March Meeting (March 4–8, 2019, Boston, MA, USA)

79. 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 (PQE, January 6–11, 2019, Snowbird, UT, USA)

80. 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)

81. 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)

82. 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)

83. 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)

84. 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)

85. 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)

86. 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)

87. 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)

88. 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)

89. 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)

90. 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)

91. 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)

92. 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)

93. Exciton Bose-Einstein condensation in double walled carbon nanotubes,
Contributed talk at the MRS Spring Meeting (April 17–21, 2017, Phoenix, AZ, USA)

94. 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)

95. 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)

96. 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)

97. 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)

98. Monopolar charge fluctuation induced forces in 2D nanostructures,
Contributed talk at the Graphene Canada 2016 International Conference (October 18–20, 2016, Montreal, Canada)

99. 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)

100. Excitons and excitonic complexes in quasi-1D semiconductors,
Contributed talk at the 26th European Physical Society's Condensed Matter Division International Conference (CMD26, September 4–9, 2016, Groningen, The Netherlands)

101. 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)

102. 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)

103. One-dimensional quantum transport in hybrid metal-semiconductor nanotube systems,
Contributed talk at the APS March Meeting (March 14–18, 2016, Baltimore, MD, USA)

104. Exciton-plasmon interactions in carbon nanotube arrays,
Contributed talk at the APS March Meeting (March 14–18, 2016, Baltimore, MD, USA)

105. 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)

106. 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)

107. 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)

108. 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)

109. 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)

110. 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)

111. 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)

112. 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)

113. Plasmon enhanced Raman scattering effect for an atom near a carbon nanotube,
Contributed talk at the 7th International Conference on surface plasmon photonics (SPP7, May 31 – June 5, 2015, Jerusalem, Israel)

114. 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)

115. 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)

116. 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)

117. 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)

118. 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)

119. 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)

120. 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)

121. 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)

122. 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)

123. Is exciton BEC possible in individual carbon nanotubes? A theoretical prospective,
Contributed talk at the 15th International Conference on the science and application of nanotubes (June 2–6, 2014, Los Angeles, CA, USA)

124. 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)

125. Possibility for exciton Bose-Einstein condensation in carbon nanotubes,
Contributed talk at the APS March Meeting (March 3–7, 2014, Denver, CO, USA)

126. Bound electron states in skew-symmetric quantum wire intersections,
Contributed talk at the APS March Meeting (March 3–7, 2014, Denver, CO, USA)

127. Binding energy of the trion complex in carbon nanotubes,
Contributed talk at the APS March Meeting (March 3–7, 2014, Denver, CO, USA)

128. 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)

129. 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)

130. 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)

131. 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)

132. 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)

133. 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)

134. 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 plasmon photonics (SPP6, May 26–31, 2013, Ottawa, Canada)

135. Exciton-plasmon interaction effects in individual carbon nanotubes,
Contributed talk at the APS March Meeting (March 18–22, 2013, Baltimore, MD, USA)

136. 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)

137. 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)

138. 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)

139. Plasmon generation by excitons in carbon nanotubes,
Contributed talk at the International Conference Nanotech2012 (June 18–21, 2012, Santa Clara, CA, USA)

140. 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)

141. Nanotube plasmonics,
Invited talk at the International Conference "Spins & Photonic Beams at Interface" (September 25–26, 2011, Minsk, Belarus)

142. 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)

143. 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)

144. 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)

145. 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)

146. Surface plasmon generation by excitons in carbon nanotubes,
Contributed talk at the APS March Meeting (March 21–25, 2011, Dallas, TX, USA)

147. Biexcitonic non-linearities in semiconducting carbon nanotubes,
Contributed talk at the APS March Meeting (March 21–25, 2011, Dallas, TX, USA)

148. 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)

149. 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)

150. 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)

151. 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)

152. 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)

153. 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)

154. 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)

155. 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)

156. 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)

157. Two-qubit atomic entanglement in metallic carbon nanotubes,
Contributed talk at the APS March Meeting (March 15–19, 2010, Portland, OR, USA)

158. DFT modeling of structural, electronic and spin properties of $Eu@C_{60}$, $Eu@C_{82}$, and $N@C_{60}$ 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)

159. Structure and physical properties of the $Eu@C_{82}$ and $Eu@C_{60}$ 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)

160. Quantum confined Stark effect for exciton-plasmons in carbon nanotubes,
Contributed talk at the APS March Meeting (March 16–20, 2009, Pittsburgh, PA, USA)

161. 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)

162. 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)

163. Modeling of the structural, electronic and spin properties of the $Eu@C_{60}$ and $Eu@C_{82}$ 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)

164. 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)

165. 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)

166. 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)

167. 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)

168. 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)

169. 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)

170. 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)

171. Exciton-photon correlations in carbon nanotubes,
Contributed talk at the 24th European Material Research Society Conference (May 28–June 1, 2007, Strasbourg, France)

172. 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)

173. Exciton-polariton dynamics in carbon nanotubes,
Contributed talk at the APS March Meeting (March 5–9, 2007, Denver, Colorado, USA)

174. 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)

175. 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)

176. 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)

177. Tunnel detrapping of self-trapped positronium in SrF_2 single crystal
Contributed talk at the 14th International Conference on positron annihilation (July 23–28, 2006, Hamilton, Ontario, Canada)

178. 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)

179. Atomic entanglement in carbon nanotubes,
Contributed talk at the 23rd European Material Research Society Conference (May 29–June 2, 2006, Nice, France)

180. Quantum optics phenomena in atomically doped carbon nanotubes,
Invited talk at the XIth International Conference on quantum optics (May 26–31, 2006, Minsk, Belarus)

181. 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)

182. Atomic entanglement in carbon nanotubes,
Contributed talk at the APS March Meeting (March 13–17, 2006, Baltimore, Maryland, USA)

183. 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)

184. Near-field electrodynamical properties of atomically doped carbon nanotubes,
Contributed talk at the NSTI Nanotechnology Conference (May 8–12, 2005, Anaheim, California, USA)

185. 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)

186. 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)

187. Near-field electrodynamical properties of carbon nanotubes,
Contributed talk at the 6th International Conference on nanotechnology in Carbon (October 10–13, 2004, Batz-sur-Mer, France)

188. 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)

189. Near-field electrodynamics 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)

190. 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)

191. 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)

192. Spontaneous decay dynamics in atomically doped carbon nanotubes,
Contributed talk at the 21st European Material Research Society Conference (May 25–28, 2004, Strasbourg, France)

193. Vacuum field effects in atomically doped carbon nanotubes,
Contributed talk at the 21st European Material Research Society Conference (May 25–28, 2004, Strasbourg, France)

194. Spontaneous decay dynamics in atomically doped carbon nanotubes,
Contributed talk at the at the Belgian Workshop on carbon nanosystems (March 15, 2004, Neuiwpoort, Belgium)

195. 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)

196. Positronium quadrupole interactions in crystalline solids,
Contributed talk at the 13th International Conference on positron annihilation (September 7–13, 2003, Kyoto, Japan)

197. 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)

198. 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)

199. Atomic spontaneous decay rate enhancement near a carbon nanotube,
Contributed talk at the Belgian Workshop on carbon nanosystems (May 21, 2003, Namur, Belgium)

200. 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)

201. 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)

202. 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)

203. 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)

204. 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)

205. 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)

206. 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)

207. On explanation of unusual broadening of ACAR narrow peaks in 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)

208. 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)

209. 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)

210. 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)

211. Positronium self-localization in alkali halide crystals,
Contributed talk at the 28th Polish (International) Seminar on positron annihilation (September 8–13, 1996, Jarnołtówek, Poland)

212. 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)

213. 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)

214. 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)

215. 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)

216. Anisotropic magnetic quenching of positronium in a crystal,
Contributed talk at the 10th International Conference on positron annihilation (May 23–29, 1994, Beijing, China)

217. 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)

218. 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)

219. Quadrupole interaction of positronium in a crystal,
Contributed talk at the XIIth International Symposium on nuclear quadrupole resonance (July 19–23, 1993, Zürich, Switzerland)

220. 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)

221. 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)

222. 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)

223. 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)

224. 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)

225. Influence of exchange and quadrupole interactions on the angular distribution of the photons resulting from the 3γ-decay of positronium,
Contributed talk at the All-Union Seminar "Positron annihilation in solids" (September 10–12, 1991, Obninsk, USSR)

226. 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)

227. Crystal field effect on the angular distribution of positronium 3γ-decay quanta,
Contributed talk at the 9th International Conference on positron annihilation (August 26–31, 1991, Szombathely, Hungary)

228. 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)

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List of Publications

(A) Articles in journals:

1. F.-T. Tseng, I.-H. Ho, T.-J. Kuo, S. Gwo, **I. V. Bondarev**, and H. Ahn, ' Confinement-induced nonlocality and optical nonlinearity of transdimensional titanium nitride films in the epsilon-near-zero region '
   Nano Letters (*submitted*)

2. P. Kapri and **I. V. Bondarev**, ' Electromagnetic response nonreciprocity of in-plane isotropic transdimensional plasmonic systems '
   Physical Review B (*under review*)

3. **I. V. Bondarev**, A. Boltasseva, J. B. Khurgin, and V. M. Shalaev, ' Crystallization of the transdimensional electron liquid '
   Nano Letters (*under review*)

4. Q. Wan, D. Vaz, L. Xiang, A. Ramavath, B. Vargo, J. Ye, J. Beaumariage, K. Watanabe, T. Taniguchi, Z. Sun, D. Smirnov, N. Youngblood, **I. V. Bondarev**, and D. W. Snoke, ' Light-induced electron pairing in a bilayer structure '
   Reports on Progress in Physics, Vol. 89, p. 018003, 2026

5. S.-A. Biehs and **I. V. Bondarev**, ' Goos-Hänchen effect singularities in transdimensional plasmonic films '
   Nanophotonics, Vol. 14(25), p. 4513, 2025

6. A. Boltasseva, **I. V. Bondarev**, and V. M. Shalaev, ' Transdimensional materials as a new platform for strongly correlated systems ' —Section 29 of **Roadmap for Photonics with 2D Materials** by F. J. García de Abajo, D. N. Basov, F. H. L. Koppens, *et al.*
   ACS Photonics, Vol. 12, p. 3962, 2025

7. **I. V. Bondarev**, S.-A. Biehs, A. Boltasseva, and V. M. Shalaev, ' Nonlocal effects in transdimensional plasmonics ' —Section 23 of **Nonlocality in Photonic Materials and Metamaterials: Roadmap** by F. Monticone, N. A. Mortensen, A. I. Fernández-Domínguez, *et al.*
   Optical Materials Express, Vol. 15, p. 1544, 2025

8. P. Das, S. Rudra, D. Rao, S. Banerjee, A. I. Kamalasanan Pillai, M. Garbrecht, A. Boltasseva, **I. V. Bondarev**, V. M. Shalaev, and B. Saha, ' Electron-confinement-induced plasmonic breakdown in metals '
   Science Advances, Vol. 10, p. eadr2596, 2024

9. M. D. Pugh, S. F. Islam, and **I. V. Bondarev**, ' Anisotropic photon emission enhancement near carbon nanotube metasurfaces '
   Physical Review B, Vol. 109, p. 235430, 2024

10. P. Rodriguez-Lopez, D.-N. Le, **I. V. Bondarev**, M. Antezza, and L. M. Woods, ' Giant anisotropy and Casimir phenomena: The case of carbon nanotube metasurfaces '
    Physical Review B, Vol. 109, p. 035422, 2024

11. **I. V. Bondarev**, M. D. Pugh, P. Rodriguez-Lopez, L. M. Woods, and M. Antezza, ' Confinement-induced nonlocality and Casimir Force in transdimensional systems '
    Physical Chemistry Chemical Physics, Vol. 25, p. 29257, 2023

12. H. Salihoglu, J. Shi, Z. Li, Z. Wang, X. Luo, **I. V. Bondarev**, S.-A. Biehs, and S. Shen, ' Nonlocal near-field radiative heat transfer by transdimensional plasmonics '
Physical Review Letters, Vol. 131, p. 086901, 2023

13. S.-A. Biehs and **I. V. Bondarev**, ' Far- and near-field heat transfer in transdimensional plasmonic film systems '
Advanced Optical Materials, Vol. 11, p. 2202712, 2023

14. **I. V. Bondarev**, ' Controlling single-photon emission with ultrathin transdimensional plasmonic films '
Annalen der Physik, Vol. 535, p. 2200331, 2023

15. **I. V. Bondarev** and Yu. E. Lozovik, ' Magnetic-field-induced Wigner crystallization of charged interlayer excitons in van der Waals heterostructures '
Communications Physics (Nature), Vol. 5, p. 315, 2022

16. D. Shah, M. Yang, Z. Kudyshev, X. Xu, V. M. Shalaev, **I. V. Bondarev**, and A. Boltasseva, ' Thickness-dependent Drude plasma frequency in transdimensional plasmonic TiN'
Nano Letters, Vol. 22, p. 4622, 2022

17. Z. Sun, J. Beaumariage, Q. Wan, H. Alnatah, N. Hougland, J. Chisholm, Q. Cao, K. Watanabe, T.Taniguchi, B. Hunt, **I. V. Bondarev**, and D. W. Snoke, ' Charged bosons made of fermions in bilayer structures with strong metallic screening '
Nano Letters, Vol. 21, p. 7669, 2021

18. **I. V. Bondarev**, O. L. Berman, R. Ya. Kezerashvili, and Yu. E. Lozovik, ' Crystal phases of charged interlayer excitons in van der Waals heterostructures '
Communications Physics (Nature), Vol. 4, p. 134, 2021

19. **I. V. Bondarev** and C. M. Adhikari, ' Collective excitations and optical response of ultrathin carbon nanotube films '
Physical Review Applied, Vol. 15, p. 034001, 2021

20. C. M. Adhikari and **I. V. Bondarev**, ' Controlled exciton-plasmon coupling in a mixture of ultrathin periodically aligned single-wall carbon nanotube arrays '
Journal of Applied Physics, Vol. 129, p. 015301, 2021

21. C. M. Adhikari and **I. V. Bondarev**, ' Optical response of ultrathin periodically aligned single-wall carbon nanotube films '
MRS Advances, Vol. 5, p. 2685, 2020

22. **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

23. 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

24. **I. V. Bondarev**, ' Finite-thickness effects in plasmonic films with periodic cylindrical anisotropy (Invited) '
Optical Materials Express, Vol. 9, p. 285, 2019

25. **I. V. Bondarev**, H. Mousavi, and V. M. Shalaev, ' Optical response of finite-thickness ultrathin plasmonic films '
MRS Communications, Vol. 8, p. 1092, 2018

26. **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

27. **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

28. 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

29. **I. V. Bondarev** and A. Popescu, ' Exciton Bose-Einstein condensation in double-walled carbon nanotubes '
MRS Advances, Vol. 2, p. 2401, 2017

30. **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

31. **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)

32. M. F. Gelin and **I. V. Bondarev**, ' One-dimensional transport in hybrid metal–semiconductor nanotube systems '
Physical Review B, Vol. 93, p. 115422, 2016

33. 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

34. **I. V. Bondarev** and A. V. Gulyuk, ' Electromagnetic SERS effect in carbon nanotube systems '
Superlattices and Microstructures, Vol. 87, p. 103, 2015

35. **I. V. Bondarev**, ' Plasmon enhanced Raman scattering effect for an atom near a carbon nanotube '
Optics Express, Vol. 23, p. 3971, 2015

36. **I. V. Bondarev**, ' Relative stability of neutral and charged exciton complexes in quasi-one-dimensional semiconductors '
Physical Review B, Vol. 90, p. 245430, 2014

37. **I. V. Bondarev** and A. V. Meliksetyan, ' Possibility for exciton Bose-Einstein condensation in carbon nanotubes '
Physical Review B, Vol. 89, p. 045414, 2014

38. 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

39. T. Hertel and **I. V. Bondarev**, ' Editorial: Photophysics of carbon nanotubes and nanotube composites '
Chemical Physics, Vol. 413, p. 1, 2013

40. 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)

41. 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

42. 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

43. **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

44. 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

45. **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)

46. **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)

47. **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

48. **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)

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