

CURRICULUM VITAE

PERSONAL INFORMATION

Name

PAVEL A. BELOV

Work address

ITMO UNIVERSITY

KRONVERKSKY PR. 49, 197101

ST. PETERSBURG, RUSSIA

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belov@metalab.ifmo.ru

Date of birth

18 December 1977

EDUCATION

• Dates (from – to)

February 2004 – November 2010

• Name of organization

St. Petersburg State University of Information Technologies, Mechanics and Optics, Sablinskaya st. 14, 197101, St. Petersburg, Russia; www.ifmo.ru

Optics and radiophysics

Doctor of Science

Transmission of electromagnetic field distributions with subwavelength resolution by means of extremely anisotropic metamaterials

• Dates (from – to)

May 2001 – November 2006

• Name of organization

Radio Laboratory, Helsinki University of Technology,

PO. Box 3000, FIN-02015 TKK, Espoo, Finland ; www.hut.fi

Radioengineering and electromagnetics

Doctor of Science in Technology, with distinction (second PhD)

Analytical modeling of metamaterials and new principle of sub-wavelength imaging
<http://lib.tkk.fi/Diss/2006/isbn9512283786/>

• Dates (from – to)

May 2001 – September 2004

• Name of organization

Radio Laboratory, Helsinki University of Technology,

PO. Box 3000, FIN-02015 TKK, Espoo, Finland ; www.hut.fi

Radioengineering and electromagnetics

Licentiate in Technology, with distinction

Analytical studies of complex microwave stop band structures

• Dates (from – to)

July 2000 – May 2003

• Name of organization

St. Petersburg Institute of Fine Mechanics and Optics,

Sablinskaya st. 14, 197101, St. Petersburg, Russia; www.ifmo.ru

Optics and radiophysics

Candidate of Science (PhD equivalent)

Analytical modeling of electromagnetic crystals

<ul style="list-style-type: none"> • Dates (from – to) • Name of organization • Principal subjects • Title of qualification awarded <ul style="list-style-type: none"> • Title of thesis • Dates (from – to) • Name of organization • Principal subjects • Title of qualification awarded <ul style="list-style-type: none"> • Title of thesis 	<p>September 1998 – May 2000 St. Petersburg Institute of Fine Mechanics and Optics, Sablinskaya st. 14, 197101, St. Petersburg, Russia; www.ifmo.ru Applied mathematics and computer science Master of Science, cum laude Electromagnetic interaction in regular arrays of scatterers</p> <p>September 1994 – May 1998 St. Petersburg Institute of Fine Mechanics and Optics, Sablinskaya st. 14, 197101, St. Petersburg, Russia, www.ifmo.ru Applied mathematics and computer science Bachelor of Science, cum laude Exact solution of interaction and excitation problems in regular arrays of bianisotropic scatterers</p>
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SCHOLARSHIPS FOR SUPPORT OF STUDIES

- Hudswell International Research Scholarship (IEE, UK, 2003)
- Nokia Scholarship (Nokia comp., Finland, 2003)
- SUMMA Fellowship in Advanced Electromagnetics (USA, 2002)
- IEEE MTTs Fellowship (USA, 2001)
- INTAS Fellowship (Belgium, 2001)
- SPIE Educational Scholarships (USA, 1999, 2000, 2003)
- Grants of International Soros Science Education Program (1995-2000, 2003)
- Grant for PhD students and young scientists of SPIFMO (Russia, 2003)
- Grant of St. Petersburg Administration for young scientists (Russia, 1998/99)
- Scholarship of Russian Federation Ministry of Education (Russia, 1999)
- Personal Scholarship of the President of Russian Federation for the progress in study and scientific research (Russia, 1998)
- Scholarship of St. Petersburg Mayor (Russia, 1997/98)

WORK EXPERIENCE

<ul style="list-style-type: none"> • Dates (from – to) • Name and address of employer • Occupation or position held <ul style="list-style-type: none"> • Main activities and responsibilities • Dates (from – to) • Name and address of employer • Occupation or position held <ul style="list-style-type: none"> • Main activities and responsibilities 	<p>February 2023 – May 2023 NARXOZ University, Zhandozova, 55 Almaty, Kazakhstan, 050035 https://narxoz.edu.kz</p> <p>Consultancy Consulting, development of a concept for the development of an engineering school</p> <p>April 2021 – present time / April 2017 – March 2021 School of Physics and Engineering / Department of Physics and Engineering http://physics.ifmo.ru ITMO University 49 Kronverksky pr. 197101, St. Petersburg, Russia; www.ifmo.ru</p> <p>Head of School of Physics and Engineering / Dean of Faculty of Physics and Engineering Research in the areas of metamaterials, metasurfaces, plasmonic nanostructures, nanoantennae, homogenization, spatial dispersion, magnetic resonance imaging.</p>
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<ul style="list-style-type: none"> • Dates (from – to) • Name and address of employer 	<p>April 2015 - August 2018 / November 2010 – March 2015 Department of Nanophotonics and Metamaterials, The International Research Centre of Nanophotonics and Metamaterials (The Metamaterials Laboratory); ITMO University, 49 Kronverksky pr. 197101, St. Petersburg, Russia; http://metalab.ifmo.ru/</p>
<ul style="list-style-type: none"> • Occupation or position held <ul style="list-style-type: none"> • Main activities and responsibilities 	<p>Head of Department / Principal Researcher, Head of Centre Research in the areas of metamaterials, metasurfaces, plasmonic nanostructures, nanoantennae, homogenization, spatial dispersion, magnetic resonance imaging.</p>
<ul style="list-style-type: none"> • Dates (from – to) • Name and address of employer 	<p>September 2012– January 2013 Skolkovo Institute of Science and Technology; Bolshoi blvd, 30, bd.1, Moscow, 121205, Russia Russia; www.skoltech.ru</p>
<ul style="list-style-type: none"> • Occupation or position held <ul style="list-style-type: none"> • Main activities and responsibilities 	<p>Founding Fellow Promotion of the new university, invitation of new staff.</p>
<ul style="list-style-type: none"> • Dates (from – to) • Name and address of employer 	<p>Sept. 2007– Nov. 2010 / Feb. 2004 – Nov. 2004 / May 2003 – Jan. 2004 St. Petersburg State University of Information Technologies, Mechanics and Optics; Photonics and Optoinformatics Department, Sablinskaya st. 14, 197101, St. Petersburg, Russia; www.ifmo.ru</p>
<ul style="list-style-type: none"> • Occupation or position held <ul style="list-style-type: none"> • Main activities and responsibilities • Dates (from – to) • Name and address of employer 	<p>Leading Researcher / Associate Professor / Senior Researcher Theoretical and numerical studies of electromagnetic crystals and metamaterials. Undergraduate teaching (electromagnetics, mechanics).</p>
<ul style="list-style-type: none"> • Occupation or position held <ul style="list-style-type: none"> • Main activities and responsibilities • Dates (from – to) • Name and address of employer 	<p>September 2007 – August 2012 School of Electronic Engineering and Computer Science, Queen Mary University of London, Mile End Road, London E1 4NS, UK. www.elec.qmul.ac.uk</p>
<ul style="list-style-type: none"> • Occupation or position held <ul style="list-style-type: none"> • Main activities and responsibilities • Dates (from – to) • Name and address of employer 	<p>EPSRC Advanced Research Fellow Theoretical and experimental studies of subwavelength imaging by means of metamaterials within the framework of EPSRC Advanced Research Fellowship.</p>
<ul style="list-style-type: none"> • Occupation or position held <ul style="list-style-type: none"> • Main activities and responsibilities • Dates (from – to) • Name and address of employer 	<p>June 2005 – August 2007 Department of Electronic Engineering, Queen Mary University of London, Mile End Road, London E1 4NS, UK. www.elec.qmul.ac.uk</p>
<ul style="list-style-type: none"> • Occupation or position held <ul style="list-style-type: none"> • Main activities and responsibilities • Dates (from – to) • Name and address of employer 	<p>Post-doctoral Research Assistant Theoretical and experimental studies of metamaterials: electromagnetic crystals, left-handed media and nanostructures within the framework of EPSRC project.</p>
<ul style="list-style-type: none"> • Occupation or position held <ul style="list-style-type: none"> • Main activities and responsibilities • Dates (from – to) • Name and address of employer 	<p>November 2008 – March 2009 Robert Bosch GmbH, Russian R&D Center, Shvetsova st. 41/15, 198095, St. Petersburg, Russia; http://www.bosch.ru</p>
<ul style="list-style-type: none"> • Occupation or position held <ul style="list-style-type: none"> • Main activities and responsibilities • Dates (from – to) • Name and address of employer 	<p>Research Engineer (Consultancy) Research in the areas of thermoelectric materials and photovoltaic cells, analysis of alternative energy sources</p>
	<p>December 2004 – May 2005 Mobile Communication Division, Telecommunication Network Business, Samsung Electronics Co., Ltd., #94-1, Imsoo-Dong, Gumi-City, Gyeong-Buk, 730-350, Korea; www.samsung.com</p>

- Occupation or position held
 - Main activities and responsibilities
 - Dates (from – to)
- Name and address of employer
- Occupation or position held
 - Main activities and responsibilities
 - Dates (from – to)
- Name and address of employer
- Occupation or position held
 - Main activities and responsibilities

RESEARCH INTERESTS AND BACKGROUND

AWARDS

RESEARCH GRANTS

Research Engineer

Design and numerical simulation of antennas for mobile terminals (ultra-compact, multi-band, wideband) using artificial materials.

January 2001 – May 2003

Radio Laboratory, **Helsinki University of Technology**,
PO. Box 3000, FIN-02015 TKK, Espoo, Finland ; www.hut.fi

Researcher

Theoretical and experimental studies of electromagnetic crystals, metamaterials and high-impedance surfaces. Participation in industrial projects (NOKIA research projects, www.nokia.fi). Design and improvement of antennas for mobile terminals and base stations. User head shielding.

February 1996 – December 2000

St. Petersburg Institute of Fine Mechanics and Optics,
Sablinskaya st. 14, 197101, St. Petersburg, Russia; www.ifmo.ru

Research assistant, General Physics Department

Analytical modeling of photonic crystals and bianisotropic materials (non-reflective shields, stealth technology). Participation in research projects (Russian Foundation for Basic Research, www.rfbr.ru).

Metamaterials, plasmonic nanostructures, photonic and electromagnetic crystals, impedance surfaces, with emphasis on analytical, numerical (FDTD, FEM, MOM) and experimental studies of electromagnetic properties. Previously he studied: bianisotropic materials for non-reflective shields at microwave frequencies (stealth-technology), polarization transformers and frequency selective surfaces.

- Award of the Government of St. Petersburg for outstanding achievements in the field of higher education and secondary vocational education (2018)
- Award of the Government of St. Petersburg for scientific and pedagogical activity (2017)
- Premium of President of Russian Federation in science and innovation (2009)
- IET Achievement Award (IET, UK, 2006)
- International Dennis Gabor Award (Novofer foundation, Hungary, 2003)
- URSI Young Scientist Award (Belgium, 2002)
- The Ministry of Education and Science of Russia (Federal Target Program), 30 000 000 Rub (Russia, 2023-2025)
- Priority 2030 Federal Academic Leadership Program, 12 000 000 Rub/year (Russia, 2022-2024)
- The Ministry of Education and Science of Russia (Federal Target Program), 23 400 000 Rub (Russia, 2021-2023)
- Russian Found. for Basic Research, 15 000 000 Rub (Russia, 2019-2022)
- Grant of The Ministry of Education and Science of Russia (Federal Target Program), 30 000 000 Rub (Russia, 2017-2019)
- The Ministry of Education and Science of Russia, 30 000 000 Rub (Russia, 2017-2019)
- The Ministry of Education and Science of Russia (Horizon2020), 30 000 000 Rub (Russia, 2017-2019)
- The Ministry of Education and Science of Russia (BRICS), 21 000 000 Rub (Russia, 2017-2019)
- Russian Science Foundation, 25 500 000 Rub (Russia, 2015-2017)
- Grant of President of Russian Federation for governmental support of young scientists, Doctors of Sciences, 2 000 000 Rub (Russia, 2015-2016)

RESEARCH GRANTS

- Grant of Russian Foundation for Basic Research, 3 000 000 Rub (Russia, 2014-2016)
- Program for Enhancing the Competitiveness ("5-100" Project), 300 000 000 Rub (Russia, 2013-2020)
- Action 1.2.1 grant of Federal Targeted Programme "Scientific and Scientific-Pedagogical Personnel of the Innovative Russia in 2009-2013", Ministry of Education and Science of Russian Federation, 3 500 000 Rub (2009-2011)
- Action 2.1.1 grant of Analytical Ministerial Targeted Programme "Development of scientific potential of high school in 2009-2011", Ministry of Education and Science of Russian Federation, 7 024 556 Rub (2009-2011)
- Grant of President of Russian Federation for governmental support of young scientists, Candidates of Sciences, 1 200 000 Rub (Russia, 2009-2010) and 300 000 Rub (Russia, 2005-2006)
- EPSRC Advanced Research Fellowship, 483 771£ (UK, 2007-2012)

TRAVEL GRANTS

- Presidential Lecturer (OIST, Japan, 2019)
- Invited Sackler Lecturer (TAU, Israel, 2018)
- Erasmus Europhotonics Visiting Professor (Fresnel Institute, France, 2015)
- Two SPIE Visiting Lecturer Grants (USA, both 2009)
- OSA Distinguished Visiting Lecturer Award (USA, 2008)
- Raj Mittra Travel Grant (USA, 2008)
- Researcher Exchange Grant, British Council, 3 890 £ (UK, 2007)
- International Travel Grant, Royal Academy of Engineering (UK, 2005)
- Travel Grant of Russian Foundation of Basic Research (Russia, 2004)
- Travel Grant of Federal Program «Integration» (Russia, 2000, 2003)
- SPIE Travel Grant (USA, 2002)

MEMBERSHIP IN PROFESSIONAL SOCIETIES AND COMMISSIONS

A member of IEEE (Institute of Electrical and Electronics Engineers, www.ieee.org) AP-S (Antennas and Propagation Society, www.ieeeaps.org), MTT-S (Microwave Theory and Techniques Society, www.mtt.org), SPIE (International Society for Optics and Photonics, www.spie.org), OSA (Optical Society of America, www.osa.org), ISMRM (International Society for Magnetic Resonance in Medicine, www.ismmr.org).

ORGANIZATION OF CONFERENCES

- General Chair of Annual International Conference "Metanano", Russia <http://metanano.ifmo.ru/> (since 2016, every year)
- Organizer of the Workshop on Metamaterials of Annual International Conference "Days on Diffraction", St. Petersburg, Russia <http://math.nw.ru/DD/> (since 2006, every year)
- Local chair of 6th International Congress on Advanced Electromagnetic Materials in Microwaves and Optics (Metamaterials 2012), St. Petersburg, Russia, 17-22 September 2012, <http://congress2012.metamorphose-vi.org/>

REVIEWING FOR JOURNALS

- Science, Physical Review Letters, Physical Review A, B and E
- Optics Express, Optics Letters, Journal of Optics A: Pure and Applied Optics
- Journal of Optical Society of America A and B, Journal of Nanophotonics,
- New Journal of Physics, Applied Physics Letters, Metamaterials,
- Photonics and Nanostructures - Fundamentals and Applications
- IEEE Trans. Antennas & Propagation, IEEE Antennas & Wireless Prop. Lett.
- IET Proc. Microwaves, Antennas & Propagation

SCIENTIFIC OUTPUT

Author of more than 260 papers in scientific journals, 18 book chapters, and more than 300 reports at international conferences.

PHD STUDENT SUPERVISION

- Alexander Krasnok (2013)
- Alexey Orlov (2015)
- Alexander Chebykin (2016)
- Maxim Gorlach (2017)
- Konstantin Ladutenko (2017)
- Alexey Slobozhanyuk (double program with Australian National University, 2017)
- Sergei Kosulnikov (double program with Aalto University, 2017)
- Mikhail Omelyanovich (double program with Aalto University, 2018)
- Pavel Voroshilov (double program with Aalto University, 2018)
- Eugene Koreshin (2024)
- Rustam Balafendiev (expected 2025)

Papers in referred journals:

2024

1. Y. Li, S. Wan, S. Deng, Z. Deng, B. Lv, C. Guan, J. Yang, A. Bogdanov, P. Belov, J. Shi "Independent control of circularly polarized light with exceptional topological phase coding metasurfaces", *Photonics Research*, Vol. 12, No. 3, pp. 534-542, 2024
2. Jim A. Enriquez, R. Balafendiev, A. J. Millar, C. R. Simovskii, P. Belov "Uniform Field in Microwave Cavities Through the Use of Effective Magnetic Walls", *Physical Review Applied*, 2024
3. Jim A. Enriquez, E. Koreshin, J. P. Del Risco, P. Belov, J. Domingo Baena "Dispersion characteristics of a glide-symmetric square-patch metamaterial with giant anisotropy", *Physical Review B*, vol. 110, 2024
4. D. Sakhno, R. Balafendiev, P. Belov "Anisotropy in a wire medium resulting from the rectangularity of a unit cell", *Physical Review B*, vol. 110, 2024
5. Yi. Li, S. Wan, R. Zhao, Z. Zhu, W. Li, C. Guan, J. Yang, A. Bogdanov, P. Belov, Jinhui Shi "Huygens' metasurface: from anomalous refraction to reflection", *Optics Communications*, pp. 130648, 2024

2023

6. N. Kowitt, R. Balafendiev, D. Sun, M. Wooten, A. Droster, M. Gorlach, K. van Bibber, P. Belov "Tunable wire metamaterials for an axion haloscope", *Physical Review Applied*, Vol. 20, pp. 044051, 2023.
7. R. Gaponenko, M. Sidorenko, D. Zhirihi, I. Rasskazov, A. Moroz, K. Ladutenko, P. Belov, A. Shcherbakov "Experimental demonstration of superdirective spherical dielectric antenna", *Journal of Applied Physics*, Vol. 134, pp. 014901, 2023.
8. A. Larin, Y. Sun, A. Mozharov, E. Ageev, O. Pashina, F. Komissarenko, I. Mukhin, M. Petrov, S. Makarov, P. Belov, D. Zuev "All-optical generation of static electric field in a single metal- semiconductor nanoantenna", *Light: Science and Applications*, Vol. 12, pp. 137, 2023.
9. Y. Sun, D. Zhao, Z. Zhang, N. Garg, B.V. Bogdanov, P.R. Senyushkin, M. Su, D.A. Zuev, S. Kumar, A.K. Ganguli, Y. Song, P. Belov "Green printed hybrid optical dielectric nanostructures on a mirror", *Photonics and Nanostructures - Fundamentals and Applications*, Vol. 55, pp. 101147, 2023.
10. Sakhno D., E. Koreshin, P. Belov "Controlling the dispersion of longitudinal waves via the affine deformation of the interlaced wire medium", *Photonics and Nanostructures - Fundamentals and Applications*, Vol. 55, pp. 101150, 2023.
11. E. Koreshin, I. Matchenya, G. Karsakov, D. Ilin, I. Iorsh, P. Belov "Electrostatic screening in a wire medium", *Physical Review B*, Vol. 107, No. 11, pp. 115170, 2023.
12. A. Millar, S. Anlage, R. Balafendiev, P. Belov, K. Van Bibber, J. Conrad, M. Demarteau, A. Droster, K. Dunne, A. Rosso, J. Gudmundsson, H. Jackson, G. Kaur, T. Klaesson, N. Kowitt, M. Lawson, A. Leder, A. Miyazaki, S. Morampudi, H. Peiris, H. Roising, G. Singh, D. Sun, J. Thomas, F. Wilczek, S. Withington, M. Wooten, J. Dilling, M. Febbraro, S. Knirck, C. Marvinney "Searching for dark matter with plasma haloscopes", *Physical Review D*, Vol. 107, No. 5, pp. 055013, 2023.

2022

13. E. Koreshin, D. Sakhno, N.A. Olekhno, A.N. Poddubny, P. Belov "Emulating quantum photon-photon interactions in waveguides by double-wire media", *Photonics and Nanostructures - Fundamentals and Applications*, Vol. 53, pp. 101104, 2022.
14. A. Mikhailovskaya, K. Grotov, D. Vovchuk, A. Machnev, D.A. Dobrykh, R.E. Noskov, K. Ladutenko, P.A. Belov, P.B. Ginzburg "Superradiant Scattering Limit for Arrays of Subwavelength Scatterers", *Physical Review Applied*, Vol. 18, No. 5, pp. 054063, 2022.
15. K.V. Baryshnikova, S.S. Kharintsev, P.A. Belov, N.A. Ustimenko, S.A. Tretyakov, C.R. Simovski "Metalenses for subwavelength imaging", *Physics-Uspekhi*, Vol. 65, No. 4, pp. 355-378, 2022.
16. D. Sakhno, E. Koreshin, P. Belov "Quadraxial metamaterial", *Optics Letters*, vol. 47, pp. 4451, 2022.
17. R. Balafendiev, C. Simovski, A.J. Millar, P. Belov "Wire metamaterial filled metallic resonators", *Physical Review B*, vol. 106, 2022.
18. S. Wan, K. Wang, F. Wang, C. Guan, Wenjiaa Li, Jianlonga Liu; A. Bogdanov, P. Belov "Topologically enabled ultrahigh-Q chiroptical resonances by merging bound states in the continuum", *Optics Letters*, vol. 47, pp. 3291, 2022.
19. Zhu Yining, Luo Hao, Yang Chenying, Qin Bing, Ghosh Pintu, Kaur Sandeep, Shen Weidong, Qiu Min, P. Belov, Li Qiang "Color-preserving passive radiative cooling for an actively temperature-regulated enclosure", *Light: Science and Applications*, 11(1), 122, 2022.

20. K. Grotov, D. Vovchuk, S. Kosulnikov, I. Gorbenko, L. Shaposhnikov, K. Ladutenko, P. Belov, P. Ginzburg "Genetically Designed Wire Bundle Super-Scatterers", *IEEE Transactions on Antennas and Propagation*, Vol. 70, No. 10, pp. 9621 - 9629, 2022.
21. M. A. C. Moussu, R. Abdeddaim, M. Dubois, E. Georget, A. G. Webb, E. Nenasheva, P. Belov, S. Glybovski, L. Ciobanu, S. Enoch "Reply to Comments on "A Semi-Analytical Model of High-Permittivity Dielectric Ring Resonators for Magnetic Resonance Imaging", *IEEE Transactions on Antennas and Propagation*, vol. 70, pp. 3131-3131, 2022.
22. V. Vorobyev, A. Shchelokova, A. Efimtcev, J.D. Baena, R. Abdeddaim, P. Belov, I.V. Melchakova, S. Glybovski "Improving B1+ homogeneity in abdominal imaging at 3 T with light, flexible, and compact metasurface", *Magnetic Resonance in Medicine*, Vol. 87, No. 1, pp. 496-508, 2022.
23. S. Kosulnikov, D. Vovchuk, E. Roman, A. Machnev, V. Kozlov, K. Grotov, K. Ladutenko, P. Belov, P. Ginzburg "Circular wire-bundle superscatterer", *Journal of Quantitative Spectroscopy and Radiative Transfer*, vol. 279, pp. 108065, 2022.

2021

24. M. Song, P. Jayathurathnage, E. Zanganeh, M. Krasikova, P. Smirnov, P. Belov, P. Kapitanova, C. Simovski, S. Tretyakov, A. Krasnok "Wireless power transfer based on novel physical concepts", *Nature Electronics*, vol. 4, pp. 707-716, 2021.
25. D. Sakhno, E. Koreshin, P. Belov "Longitudinal electromagnetic waves with extremely short wavelength", *Physical Review B*, vol. 104, 2021.
26. A. Slobozhanyuk, A. Shchelokova, A. V. Kozachenko, I. Melchakova, A. J.E. Raaijmakers, C. A.T. van den Berg, P. Belov, A. G. Webb "Visualization of Metasurface Eigenmodes with Magnetic Resonance Imaging", *Physical Review Applied*, vol. 16, 2021.
27. D. Hmelevskaya, D. Markina, V. V. Fedorov, G. A. Ermolaev, A. V. Arsenin, V. S. Volkov, A. S. Goltaev, Yu. M. Zadiranov, I. Tzibizov, A. Pushkarev, A. Samusev, A. Shcherbakov, P. Belov, I. Mukhin, S. Makarov "Directly grown crystalline gallium phosphide on sapphire for nonlinear all-dielectric nanophotonics", *Applied Physics Letters*, vol. 118, pp. 201101, 2021.
28. S. A. Kuznetsov, V. Lenets, M. Tumashov, A. Sayanskiy, P. A. Lazorskiy, P. Belov, J. D. Baena, S. Glybovski "Self-complementary metasurfaces for designing terahertz deflecting circular-polarization beam splitters", *Applied Physics Letters*, vol. 118, pp. 131601, 2021.
29. P. Tonkaev, S. Anoshkin, A. Pushkarev, R. Malureanu, M. Masharin, P. Belov, A. Lavrinenko, S. Makarov "Acceleration of radiative recombination in quasi-2D perovskite films on hyperbolic metamaterials", *Applied Physics Letters*, vol. 118, pp. 091104, 2021.

2020

30. P.V. Kapitanova, E. Zanganeh, N. Pavlov, M. Song, P.A. Belov, A.B. Evlyukhin, A.E. Miroshnichenko "Seeing the Unseen: Experimental Observation of Magnetic Anapole State Inside a High-Index Dielectric Particle", *Annalen der Physik*, Vol.532, pp. 2000293, 2020.
31. N.D. Pavlov, I. Stenishchev, A. Ospanova, P.A. Belov, P.V. Kapitanova, A. Basharin "Toroidal Dipole Mode Observation In Situ", *Physica status solidi (b)*, Vol. 257, No. 3, pp. 1900406, 2020.
32. M. Song, A. Krasnok, R. Yafyasov, P.A. Belov, P.V. Kapitanova "Obstruction tolerant metasurface-based wireless power transfer system for multiple receivers", *Photonics and Nanostructures - Fundamentals and Applications*, Vol. 41, pp. 100835, 2020.
33. M. Song, P. Smirnov, E.M. Puhtina, E. Zanganeh, S.B. Glybovski, P.A. Belov, P.V. Kapitanova "Multi-mode metamaterial-inspired resonator for near-field wireless power transfer", *Applied Physics Letters*, Vol. 117, No. 8, pp. 083501, 2020.
34. A.A. Hurshkainen, B. Steensma, S.B. Glybovski, I.J. Voogt, I.V. Melchakova, P.A. Belov, Van Den Berg C., Raaijmakers A. "A parametric study of radiative dipole body array coil for 7 Tesla MRI", *Photonics and Nanostructures - Fundamentals and Applications*, Vol. 39, pp. 100764, 2020.
35. A.D. Sinelnik, I.I. Shishkin, X. Yu, K.B. Samusev, P.A. Belov, M.F. Limonov, P.B. Ginzburg, M.V. Rybin "Experimental observation of intrinsic light localization in photonic icosahedral quasicrystals", *Advanced Optical Materials*, Vol. 8 (21), pp. 2001170, 2020.
36. A. Markvert, M. Song, S.B. Glybovski, P.A. Belov, C.R. Simovski, P.V. Kapitanova "Metasurface for Near-Field Wireless Power Transfer with Reduced Electric Field Leakage", *IEEE Access*, Vol. 8, pp. 40224-40231, 2020.
37. K. Lezhennikova, R. Abdeddaim, A.A. Hurshkainen, A. Vignaud, M. Dubois, P. Jomin, D. Berrahou, A. Raaijmakers, N. Avdievich, I.V. Melchakova, S. Enoch, P.A. Belov, C.R. Simovski, S.B. Glybovski "Constructive near-field interference effect in a birdcage MRI coil with an artificial magnetic shield", *Physical Review Applied*, Vol. 13, No. 6, pp. 064004, 2020.

38. A.V. Shchelokova, V.A. Ivanov, A.A. Mikhailovskaia, E.I. Kretov, I. Sushkov, S. Serebryakova, E. Nenasheva, I.V. Melchakova, P.A. Belov, A.P. Slobozhanyuk, A. Andreychenko "Ceramic resonators for targeted clinical magnetic resonance imaging of the breast", *Nature Communications*, Vol. 11, No. 1, pp. 3840, 2020.
39. M.A. Moussu, S.B. Glybovski, R. Abdeddaim, C. Craeye, S. Enoch, D. Tihon, S.A. Kurdjumov, M. Dubois, E. Georget, A.G. Webb, P.A. Belov, L. Ciobanu "Imaging of two samples with a single transmit/receive channel using coupled ceramic resonators for MR microscopy at 17.2 T", *NMR in Biomedicine*, Vol. 33, No. 11, 2020.
40. M.A. Moussu, R. Abdeddaim, M. Dubois, E. Georget, A.G. Webb, E. Nenasheva, P.A. Belov, S. Glybovski, L. Ciobanu, S. Enoch "A Semi-Analytical Model of High-Permittivity Dielectric Ring Resonators for Magnetic Resonance Imaging", *IEEE Transactions on Antennas and Propagation*, Vol. 68, No. 8, pp. 6317-6329, 2020.
41. M. Su, Y. Sun, B. Chen, Z. Zhang, X. Yang, S. Chen, Q. Pan, D.A. Zuev, P.A. Belov, Y. Song "A fluid-guided printing strategy for patterning high refractive index photonic microarrays", *Science Bulletin*, Vol. 66 (3), pp. 250-256, 2020.
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2. A.E. Krasnok, P.A. Belov, A.E. Miroshnichenko, A.I. Kuznetsov, B.S. Luk'yanchuk and Y.S. Kivshar, Chapter “All-Dielectric Optical Nanoantennas” in Book “Progress in Compact Antennas”, 2014 ISBN 978-953-51-1723-0.

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CURRICULUM
VITAE

Conference presentations:

2024

1. Jim A. Enriquez, J. Domingo Baena, P. Belov "Exploring Dispersion Characteristics of a Glide-Symmetric Square Patch Metamaterial", 2024 Eighteenth International Congress on Artificial Materials for Novel Wave Phenomena (Metamaterials), September 9-14, 2024, Crete, Greece
2. G. Zmaga, A. Kuzmin, Y. Sun, Qi. Pan, M. Su, Y. Song, D. Zuev, P. Belov "Molecular detection using plasmonic nanostructures of particular geometry", 2024 International Conference Laser Optics (ICLO), July 1-5, 2024, Saint-Petersburg, Russia
3. P. Belov, A. Jandaliyeva, N. Mikhailov, A. Vdovenko, M. Siganov, E. Maiorov, P. Seregin and A. Shchelokova "Room-Sized Helmholtz-Type Resonator for Ubiquitous Wireless Power Transfer", IEEE Wireless Power Technology Conference and Expo (WPTCE2024), May 8-11, 2024, Kyoto, Japan
4. A. Jandaliyeva, A. Vdovenko, M. Siganov, L. Suleiman, P. Seregin, M. Udrov, A. Shchelokova, P. Belov "Design and demonstration of the volumetric resonator with uniform magnetic field distribution for wireless power transfer", 2024 IEEE Wireless Power Technology Conference and Expo (WPTCE2024), May 8-11, 2024, Kyoto, Japan
5. N. Mikhailov, M. Abrosimova, A. Jandaliyeva, M. Siganov, P. Belov, A. Shchelokova "Multi-Object Charging in Room-Sized Weakly Coupled WPT System", 2024 IEEE Wireless Power Technology Conference and Expo (WPTCE2024), May 8-11, 2024, Kyoto, Japan
6. M. Gorlach, P. Belov "Tunable Microwave Cavity for Axion Dark Matter Search", PIERS 2024, April 21-25, 2024, Chengdu, Sichuan, China

2023

7. P. Belov " New Phystech: the path from a laboratory within the framework of a megagrant to a faculty", Current issues of thermophysics and physical fluid dynamics, March 19-24, Sheregesh, Russia (virtual)
8. P. Belov, D. Sakhno, E. Koreshin "Longitudinal electromagnetic waves supported by interlaced wire medium in wide frequency range", Days on Diffraction 2023, June 5-9, 2023, Saint-Petersburg, Russia
9. P. Belov "Studies of electromagnetic metamaterials in Russia and former USSR", IEEE HISTELCON 2023, September 07-09, 2023, Florence, Italy (virtual)
10. P. Belov, A. Jandaliyeva, A. Vdovenko, M. Siganov, L. Suleiman, P. Seregin, M. Udrov, A. Shchelokova "Volumetric Resonator Based on Split Loops for Wireless Power Transfer", Metamaterials 2023: The 17th International Congress on Artificial Materials for Novel Wave Phenomena, September 11-16, 2023, Crete, Greece

2022

11. P. Belov "Metamaterials: from left-handed media to hyperbolic metamaterials", Quantum Connection Summer School, June 21-22, 2022, Stockholm, Sweden
12. P. Belov "Metamaterial-inspired and ceramic-based structures for clinical MRI applications", IEEE 5th International Conference on Electronic Information and Communication Technology, August 21-23, 2022, Hefei, China (virtual)
13. P. Belov "Wire Metamaterial Use For Dark Matter Detection" (Metamaterials 2022: The 16th International Congress on Artificial Materials for Novel Wave Phenomena), September 12-17, 2023, Siena, Italy (virtual)
14. R. Balafendiev, C. Simovski, A. Millar, P. Belov "Wireless power transmission using new physical principles", VI International conference "Information technologies and technical controls" (ICCT-2022), October 3-7, 2022, Astrakhan, Russia (virtual)
15. P. Belov "Metamaterials Discussion", Oakridge workshop, October 21-22, 2022 (virtual)

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16. D. Sakhno, E. Koreshin, P. Belov "Longitudinal waves with extremely short wavelength in interlaced wire media", conference Metamaterials 2021: 15th International Congress on Artificial Materials for Novel Wave Phenomena, 20-25 September 2021, New York, USA
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 20. Markvart A., Song M., Belov P.A., Simovski C.R., Kapitanova P.V. “Parametric study of metamaterial-inspired resonator for wireless power transfer”, METANANO 2019, 15-19 July 2019, St. Petersburg, Russian Federation
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25. P. Belov “Hybrid nanophotonics for sensing, thermometry and generation of white light at the nanoscale”, Discussions on Nano & Mesoscopic Optics DINAMO, 21-22 April 2019, Galapagos, Ecuador
26. Zografi G., Petrova M.I., Petrov M.I., Belov P.A., Komissarenko F.E., Makarova E.K., Pushkarev A.P., Sun Y., Ghosh P., Li Q., Qiu M., Makarov S.V., Zyuzin M.V. “Semiconductor resonant all-optical temperature sensor and thermal release trigger of encapsulated anti-cancer drugs for in vitro studies”, 6th International School and Conference "Saint Petersburg OPEN 2019": Optoelectronics, Photonics, Engineering and Nanostructures, 22–25 April 2019, Saint Petersburg, Russian Federation
27. Al-Naima K., Belov P.A., Kivshar Y.S., Alexander S.S., Baryshnikova K.V., Saianskii A.D., Terekhov P.D., Gurvitz E.A., Canos Valero A., Karabchevski A., Kapitanova P.V., Evlyukhin A.B. “Non-Huygens invisible metasurfaces”, 2019 PhotonIcs & Electromagnetics Research Symposium - Spring (PIERS- Spring), 17-20 June, 2019, Rome, Italy
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