CURRICULUM VITAE

ALEXEY P. SLOBOZHANYUK

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SUMMARY:

In general, my research interests span a broad spectrum of topics in applied electromagnetic and nanophotonics with the main focus on the application of metamaterials for the development of novel devices.

I have authored and co-authored more than 70 scientific contributions published in peer-reviewed journal papers and conference proceedings. In particular, my first-author papers have appeared in several high-impact journals, including Nature Photonics, Advanced Materials, Physical Review Letters, etc. Some of our recent research work were highlighted by international media: Materials Today, Science Daily, Optics & Photonics News. I have won several international awards, including an IEEE Photonics Society Graduate Student Fellowship, IEEE Antennas and Propagation Society Doctoral Research Grant, SPIE Educational Scholarship, and IEEE MTT-S Graduate Fellowship. I have also contributed to the organization of international conferences and several workshops about electromagnetic metamaterials.

EDUCATION:

September 2009 – June 2013: student at ITMO University, Photonics and Optical Informatics Department, (St. Petersburg, Russia), http://en.ifmo.ru/
Title of qualification: **Bachelor of Science**
Title of thesis: Nonlinear metamaterials based on split-ring resonators
Advisor: Prof. Pavel A. Belov

April 15 – 19, 2013: "Industrial antenna design course" IMST Germany, http://www.imst.com/

October 28-30, 2013: "MRI Safety and Numerical Simulation course" St. Petersburg, Russia.

September 2013 – June 2015: student at ITMO University, Photonics and Optical Informatics Department, (St. Petersburg, Russia), http://en.ifmo.ru/
Title of qualification: **Master of Science**, cum laude
Title of thesis: Mechanical nonlinearities in electromagnetic metamaterials
Advisor: Prof. Pavel A. Belov

July 2014 – December 2017: PhD student at The Australian National University, Research School of Physics and Engineering, Nonlinear Physics Centre (Canberra, Australia), http://www.anu.edu.au/
Title of qualification: PhD RS Physics & Engineering
Title of thesis: Manipulating electromagnetic fields with advanced metamaterials
Supervisory Panel: Prof. Yuri S. Kivshar, Dr. Ilya Shadrivov, Dr. David Powell, Dr. Andrey Miroshnichenko.

WORK EXPERIENCE:

December 2017 – till now: Postdoctoral Fellow at The faculty of Physics and Engineering, ITMO University (St. Petersburg, Russia),
https://physics.ifmo.ru/ru/personality/aleksey_slobozhanyuk
Main activities and responsibilities: Realization of novel electromagnetic devices based on the concepts of metamaterials and metasurfaces

July 2017 – July 2018: Postdoctoral Fellow at The Australian National University, Research School of Physics and Engineering, Nonlinear Physics Centre (Canberra, Australia),
http://wwwrsphysse.anu.edu.au/nonlinear/people/AlexeiSlobozhanyuk.shtml
Main activities and responsibilities: Experimental and numerical studies of photonic topological insulators.

July 2014 – June 2017: Research Student at The Australian National University, Research School of Physics and Engineering, Nonlinear Physics Centre (Canberra, Australia),
http://wwwrsphysse.anu.edu.au/nonlinear/people/AlexeiSlobozhanyuk.shtml
Main activities and responsibilities: Experimental and numerical studies of photonic topological insulators; all-dielectric metamaterials and metamaterials for Magnetic Resonance Imaging.

December 2010 – June 2014: Research student at The International Research Centre for Nanophotonics and Metamaterials, ITMO University (St. Petersburg, Russia)
http://old.metalab.ifmo.ru/people/~slobozhanyuk
Main activities and responsibilities: Experimental and numerical studies of electromagnetic metamaterials and metasurfaces; dielectric antennas, nonlinear metamaterials, artificial diamagnetics, metamaterials applications for Magnetic Resonance Imaging.

March-April 2015: Visiting student at The City University of New York, Queens College and The Graduate Center;
Group of Prof. A. Khanikaev (http://www.physics.qc.edu/people/faculty/akhanikaev)
Main activities: Experimental study of topologically protected bianisotropic metamaterials.

November-December 2015: Visiting student at The City University of New York, Queens College and The Graduate Center;
Group of Prof. A. Khanikaev (http://www.physics.qc.edu/people/faculty/akhanikaev)
Main activities: Theoretical study of 3D photonic topological insulators.

November-December 2013: Visiting student in the Department of Radiotherapy, University Medical Center Utrecht, The Netherlands;
Group of Dr. Nico van den Berg (http://www.radiotherapie.nl/research/who-is-who/berg-nico-van-den)
Main activities: Experiments with radiofrequency antennas for high-field MRI.

July-August 2012: Visiting student in the Nonlinear Physics Center (Australian National University);
Group of Prof. Y. S. Kivshar (http://wwwrsphysse.anu.edu.au/nonlinear/)
Main activities: Investigation of microwave metamaterials for confining, guiding and redirecting the flow of electromagnetic radiation.

SCHOLARSHIPS:

1. State Scholarship (Russia, 2009-2015).
2. Academic Senate Scholarship (Russia, 2012).
3. SPIE Educational Scholarship (USA, 2011, 2012, 2013, 2017).
4. Scholarship of the President of the Russia (Russia, 2012, 2014).
5. MTT-S Undergraduate/Pre-graduate Scholarship (USA, 2013).
6. Dynasty Foundation Scholarship (Russia, 2013, 2014, 2015)
7. State Academic Scholarship for excellent achievement in Scientific research (Russia, 2011, 2012, 2013,2014, 2015).
8. The ANU HDR Merit Scholarship (Australia, 2014-2018).
9. ANU PhD Scholarship (International) (Australia, 2014-2018).
10. President of Russian Federation Scholarship for young scientists and PhD students for 2016-2018 (Russia, 2016).
11. IEEE MTT-S Graduate Fellowship (USA, 2016).
12. IEEE Photonics Graduate Fellowship (USA, 2016).
13. President of Russian Federation Scholarship for PhD students for 2016-2017 (Russia, 2016).
14. IEEE Antennas and Propagation Society Doctoral Research Grant 2017-2018 (USA, 2017).

AWARDS:

1. The best student at ITMO University 2012 (Russia, 2013).
2. The ITMO University Distinguished Bachelor's Thesis Award in the Physical Sciences/Engineering (Russia, 2013).
3. The best student paper at the "II Russian Congress of young scientists" (Russia, 2013).
4. The best young scientist at ITMO University (Russia, 2013).
5. The ITMO University Distinguished Master's Thesis Award in the Physical Sciences/Engineering (Russia, 2015).
6. Jagadishwar Mahanty Prize 2018 for the best thesis in Physics at Australian National University.

RESEARCH GRANTS:

1. Chief Investigator (CI): Russian Foundation for Basic Research, 260000$ (Russia, 2018-2021).
2. Principal Investigator (PI): Russian Science Foundation, 230000$ (Russia, 2018-2021).
3. Chief Investigator (CI): Grant of the Ministry of Education and Science of the Russian Federation, 538000$ (Russia, 2017-2019).
4. Principal Investigator (PI): Russian Science Foundation, 323000$ (Russia, 2016-2018).
5. Principal Investigator (PI): Russian Science Foundation, 538000$ (Russia, 2015-2017).

PERSONAL RESEARCH GRANTS:

1. Russian Foundation for Basic Research (RFBR) 23 000$ (Russia, 2014-2015).

TRAVEL GRANTS:

1. IEEE Microwave Theory and Techniques Society travel grant (USA, 2012).
2. IEEE Microwave Theory and Techniques Society travel grant (USA, 2013).
3. SPIE travel grant (USA, 2014).

SCIENTIFIC OUTPUT:

Author of 49 papers in scientific journals, 3 patents and 43 reports at international conferences.

Published papers:

1. E. I. Kretov, A. V. Shchelokova, and **A. P. Slobozhanyuk**, Control of the magnetic near-field pattern inside MRI machine with tunable metasurface, *Appl. Phys. Lett*. 115, 061604 (2019)
2. M.A. Zubkov, A.E. Andreychenko, E.I. Kretov, G.A. Solomakha, I.V. Melchakova, V.A. Fokin, C.R. Simovskii, P.A. Belov, **A.P. Slobozhanyuk**, Ultrahigh field MRI: new frontiers and possibilities in human imaging, *Phys. Usp*., 2019.
3. D. V. Zhirihin, S. V. Li, D. Y. Sokolov, **A. P. Slobozhanyuk**, M. A. Gorlach, A. B. Khanikaev, Photonic spin Hall effect mediated by bianisotropy, *Optics Letters*, vol. 44, pp. 1694-1697, 2019.
4. A. A. Gorlach, D. V. Zhirihin, **A. P. Slobozhanyuk**, A. B. Khanikaev, and M. A. Gorlach, Photonic Jackiw-Rebbi states in all-dielectric structures controlled by bianisotropy, *Phys. Rev. B* 99, 205122, 2019
5. **A. P. Slobozhanyuk**, A. V. Shchelokova, X. Ni, S. H. Mousavi, D. A. Smirnova, P. A. Belov, Andrea Alù, Y. S. Kivshar, A. B. Khanikaev, "Near-field imaging of spin-locked edge states in an all-dielectric topological metasurface", *Appl. Phys. Lett*. 114, pp. 31103 (2019).
6. S. Kruk, A. Poddubny, D. Smirnova, L. Wang, **A. Slobozhanyuk**, A. Shorokhov, I. Kravchenko, B. Luther-Davies & Y. Kivshar, "Nonlinear light generation in topological nanostructures", *Nature Nanotechnology* 14, 126 (2019).
7. I. Zivkovic, W. Teeuwisse, **A. Slobozhanyuk**, E. Nenasheva, A. Webb, "High permittivity ceramics improve the transmit field and receive efficiency of a commercial extremity coil at 1.5 Tesla", *Journal of Magnetic Resonance* 299, 59 (2019).
8. E. I. Kretov, A. V. Shchelokova and **A. P. Slobozhanyuk**, "Impact of metasurface eigenmode on the sensitivity enhancement", *Appl. Phys. Lett*. 112, 033501 (2018).
9. E. A. Brui, A. V. Shchelokova, M. Zubkov, I. V. Melchakova, S. B. Glybovski, **A. P. Slobozhanyuk**, "Adjustable subwavelength metasurface for magnetic resonance imaging", *Physica Status Solidi (a)* 1700788, 1 (2018).
10. M. A. Gorlach, X. Ni, D. A. Smirnova, D. Korobkin, D. Zhirihin, **A. P. Slobozhanyuk**, P. A. Belov, A. Alù, A. B. Khanikaev, " Far-field probing of leaky topological states in all-dielectric metasurfaces", *Nature Communications* 9, 909 (2018*)*.
11. X. Ni, D. Purtseladze, D. A. Smirnova, **A. Slobozhanyuk**, A. Alù, and A. B. Khanikaev, "Spin and valley polarized one-way Klein tunneling in photonic topological insulators", *Science Advances*, vol. 4, pp. eaap8802 (2018).
12. D. A. Dobrykh, A. V. Yulin, **A. P. Slobozhanyuk**, A. N. Poddubny, and Yu. S. Kivshar, "Nonlinear Control of Electromagnetic Topological Edge States", *Phys. Rev. Lett.* 121, 163901 (2018).
13. E. A. Brui, A. V. Shchelokova, A. V. Sokolov, **A. P. Slobozhanyuk**, A. E. Andreychenko, V. A. Fokin, P. A. Belov, I. V. Melchakova, "Magnetic Resonance Spectroscopy at 1.5 T with a Hybrid Metasurface", *Jetp Lett*. 108, 423 (2018).
14. S. Kosulnikov, V. Zalipaev, A. Shchelokova, I. Melchakova, S. Glybovski, **A. Slobozhanyuk**, P. Belov , "Mode hopping in arrays of resonant thin wires over a dielectric interface", *Phys. Rev. B* 98, 174302 (2018).
15. A. A. Mikhailovskaya, A. V. Shchelokova, D. A. Dobrykh, I. V. Sushkov, **A. P. Slobozhanyuk** and A. Webb, "A new quadrature annular resonator for 3 T MRI based on artificial-dielectrics", *Journal of Magnetic Resonance* 291, 47-52 (2018).

16. M. A. Gorlach, D. A. Dobrykh, **A. P. Slobozhanyuk**, P. A. Belov, and M. Lapine, "Nonlinear symmetry breaking in photo-metamaterials", *Phys. Rev. B* 97, 115119 (2018).
17. A. V. Shchelokova, **A. P. Slobozhanyuk**, I. V. Melchakova, S. B. Glybovski, A. G. Webb, Yu. S. Kivshar, P. A. Belov, " Locally Enhanced Image Quality with Tunable Hybrid Metasurfaces", *Phys. Rev. Appl.* 9, 014020 (2018).
18. A. Shchelokova, **A. Slobozhanyuk**, P. de Bruin, I. Zivkovic, E. Kallos, P. Belov, A. Webb, "Experimental investigation of a metasurface resonator for in-vivo imaging at 1.5 T", *Journal of Magnetic Resonance* 286, 78 (2018).
19. D. Vestler, I. Shishkin, E. A. Gurvitz, M. E. Nasir, A. Ben-Moshe, **A. P. Slobozhanyuk**, A. V. Krasavin, T. Levi-Belenkova, A. S. Shalin, P. Ginzburg, G. Markovich, and A. V. Zayats, Circular dichroism enhancement in plasmonic nanorod metamaterials, *Optics Express* 26, 17841 (2018).
20. **A. P. Slobozhanyuk**, S. H. Mousavi, X. Ni, D. Smirnova, Y. S. Kivshar, A. B. Khanikaev, "Three-Dimensional All-Dielectric Photonic Topological Insulator", *Nature Photonics* 11, 130–136 (2017).
21. J. D. Baena, S. B. Glybovski, J. P. del Risco, **A. P. Slobozhanyuk**, and P. A. Belov "Broadband and Thin Linear-to-Circular Polarizers Based on Self-Complementary Zigzag Metasurfaces", *IEEE Transactions on Antennas & Propagation*, doi: 10.1109/TAP.2017.2717964 (2017).
22. **Alexey Slobozhanyuk**, Yuri Kivshar and Alexander Khanikaev, "Topological Photonics Goes Three-Dimensional", *Optics and Photonics News*, Year in Optics 2017, 28, 56 (2017).
23. S. Kruk, **A. P. Slobozhanyuk**, D. Denkova, A. Poddubny, I. Kravchenko, A. Miroshnichenko, D. Neshev and Y. Kivshar, "Edge states and topological phase transitions in chains of dielectric nanoparticles", *Small* 13, 1603190 (2017).
24. R. Schmidt, **A. P. Slobozhanyuk**, P. A. Belov and A. Webb, "Flexible and compact hybrid metasurfaces for enhanced ultra high field in vivo magnetic resonance imaging", *Scientific Reports* 7 , 1678 (2017).
25. **A. P. Slobozhanyuk**, A. N. Poddubny, I. S. Sinev, A. K. Samusev, Y. F. Yu, A. I. Kuznetsov, A. E. Miroshnichenko and Yu. S. Kivshar, "Enhanced spin Hall effect with subwavelength topological edge states", *Laser & Photonics Reviews* 10, 137–146 (2016).
26. **A. P. Slobozhanyuk**, A. N. Poddubny, A. J. E. Raaijmakers, C. A. T. van den Berg, A. V. Kozachenko, I. A. Dubrovina, I. V. Melchakova, Yu. S. Kivshar, P. A. Belov, "Enhancement of magnetic resonance imaging with metasurfaces", *Advanced Materials* 28, 1832 (2016).
27. **A. P. Slobozhanyuk**, A. B. Khanikaev, D. S. Filonov, D. A. Smirnova, A. E. Miroshnichenko and Y. S. Kivshar, "Experimental demonstration of topological effects in bianisotropic metamaterials", *Scientific Reports* 6, 22270 (2016).
28. M. A. Gorlach, M. Song, **A. P. Slobozhanyuk**, A. A. Bogdanov, P. A. Belov, "Topological transition in coated wire medium", *Phys. Status Solidi RRL* 10, 900-904 (2016).
29. I. I. Shishkin, D. A. Baranov, **A. P. Slobozhanyuk**, D. S. Filonov, S. Lukashenko, A. K. Samusev, and P. A. Belov, "Microwave platform as a valuable tool for characterization of nanophotonic devices", *Scientific Reports* 6, 35516 (2016).
30. **A. P. Slobozhanyuk**, A. N. Poddubny, A. E. Miroshnichenko, I. S. Sinev, I. S. Mukhin, A. K. Samusev, and Y. S. Kivshar, "Subwavelength Topological States of Light," *Optics and Photonics News*, Year in Optics 2015, Vol. 26, No. 12, p. 61, (2015).
31. **A. P. Slobozhanyuk**, P. Ginzburg, D. A. Powell, I. Iorsh, A. S. Shalin, P. Segovia, A. V. Krasavin, G. A. Wurtz, V. A. Podolskiy, P. A. Belov, and A. V. Zayats, " Purcell effect in hyperbolic metamaterial resonators", *Phys. Rev. B* 92, 195127 (2015).

32. **A. P. Slobozhanyuk**, A. N. Poddubny, A. E. Miroshnichenko, P. A. Belov, and Y. S. Kivshar, "Subwavelength topological edge states in optically resonant dielectric structures", *Phys. Rev. Lett.* 114, 123901 (2015).
33. J. D. Baena, J. P. del Risco, **A. P. Slobozhanyuk**, S. B. Glybovski, and P. A. Belov, "Self-Complementary Metasurfaces for Linear-to-Circular Polarization Conversion", *Phys. Rev. B.* **92**, 245413 (2015).
34. A. E. Krasnok, **A. P. Slobozhanyuk**, C. R. Simovski, S. A. Tretyakov, A. N. Poddubny, A. E. Miroshnichenko, Y. S. Kivshar, and P.A. Belov, "An antenna model for the Purcell effect", *Scientific Reports* (Nature Publishing Group) 5, 12956 (2015).
35. I. S. Sinev, I. S. Mukhin, **A.P. Slobozhanyuk**., A. N. Poddubny, A. E. Miroshnichenko, A. K. Samusev and Y. S. Kivshar, "Mapping plasmonic topological states at the nanoscale", *Nanoscale* 7, 11904-11908 (2015).
36. A. A. Stashkevich, Y. Roussigné, A. N. Poddubny, S.-M. Chérif, Y. Zheng, F. Vidal, I. V. Yagupov, **A. P. Slobozhanyuk**, P. A. Belov, Y. S. Kivshar, "Anomalous polarization conversion in arrays of ultrathin ferromagnetic nanowires", *Phys. Rev. B* **92**, 214436 (2015).
37. A. V. Shchelokova, I. V. Melchakova, **A. P. Slobozhanyuk**, E. A. Yankovskaya, C. R. Simovski, P.A. Belov, "Experimental realization of invisibility cloaking", *Phys. Usp.*, 185, 181-206 (2015).
38. **A. P. Slobozhanyuk**, P. V. Kapitanova, D. S. Filonov, D. A. Powell, M. Lapine, I. V. Shadrivov, P. A. Belov, R. C. Mc Phedran and Y. S. Krishar, "Nonlinear interaction of meta-atoms through optical coupling", *Appl. Phys. Lett.*, 104, 014104 (2014).
39. **A. P. Slobozhanyuk**, A. N. Poddubny, A. E. Krasnok, and P. A. Belov, "Magnetic Purcell factor in wire metamaterials", *Appl. Phys. Lett*., vol. 104, pp. 161105 (2014).
40. **A. P. Slobozhanyuk**, I. V. Melchakova, A. V. Kozachenko, D. S. Filonov, C. R. Simovski, and P. A. Belov, "An Endoscope Based on Extremely Anisotropic Metamaterials for Applications in Magnetic Resonance Imaging", *Journal of Communications Technology and Electronics*, vol. 59, pp. 562-570 (2014)
41. D. S. Filonov, ***A. P. Slobozhanyuk***, *A. E.* Krasnok, P. A. Belov, E. A. Nenasheva, B. Hopkins, A. E. Miroshnichenko, and Y. S. Kivshar, "Near-field mapping of Fano resonances in all-dielectric oligomers", *Appl. Phys. Lett.*, 104, 021104 (2014).
42. A. N. Poddubny, A. E. Miroshnichenko, **A. P. Slobozhanyuk** and Y. S. Kivshar, "Topological Majorana states in zigzag chains of plasmonic nanoparticles", *ACS Photonics*, vol. 1, pp. 101–105 (2014).
43. R. S. Savelev, **A. P. Slobozhanyuk**, A. E. Miroshnichenko, Y. S. Kivshar, and P. A. Belov, "Subwavelength waveguides composed of dielectric nanoparticles", *Phys. Rev. B.*, 89, 035435 (2014).
44. **A. P. Slobozhanyuk**, M. Lapine, D. A. Powell, I. V. Shadrivov, Y. S. Kivshar, R. C. McPhedran, and P. A. Belov, "Flexible helices for nonlinear metamaterials", *Advanced Materials* 25, 840-4 (2013).
45. **A.P. Slobozhanyuk**, I.V. Melchakova, C.R. Simovski, P.A. Belov, "Experimental verification of enhancement of evanescent waves inside a wire medium", *Appl. Phys. Lett.*, 103, 051118 (2013).
46. P. A. Belov, **A. P. Slobozhanyuk**, D. S. Filonov, I. V. Yagupov, P. V. Kapitanova, C. R. Simovski, M. Lapine and Y. S. Kivshar, "Broadband isotropic mu-near-zero metamaterials", *Appl. Phys. Lett*. 103, 211903 (2013).
47. M. V. Rybin, P. V. Kapitanova, D. S. Filonov, **A. P. Slobozhanyuk**, P. A. Belov, Y. S. Kivshar, and M. F. Limonov, "Fano resonances in antennas: General control over radiation patterns", *Phys. Rev. B* 88, 205106 (2013).
48. P. V. Kapitanova, **A. P. Slobozhnanyuk**, I. V. Shadrivov, P. A. Belov, and Y. S. Kivshar, "Competing nonlinearities with metamaterials", *Appl. Phys. Lett.*, 101, 231904 (2012).

49. A. V. Chshelokova, P. V. Kapitanova, A. N. Poddubny, D. S. Filonov, **A. P. Slobozhanyuk**, Y. S. Kivshar, and P. A. Belov “Hyperbolic Transmission-Line Metamaterials”, *J. Appl. Phys*. 112, 073116 (2012).
50. **A P. Slobozhanyuk**, P. V. Kapitanova, I. V. Shadrivov, P. A. Belov, and Yu. S. Kivshar, “Metamaterials with Tunable Nonlinearity”, *JETP Lett*. 95, 613-617 (2012).
51. D. S. Filonov, A. E. Krasnok, **A. P. Slobozhanyuk**, P. V. Kapitanova, E. A. Nenasheva, Y. S. Kivshar, and P. A. Belov "Experimental verification of the concept of all-dielectric nanoantennas", *Appl. Phys. Lett*. 100, 201113 (2012).
52. D. S. Filonov, **A. P. Slobozhanyuk**, P. A. Belov and Y. S. Kivshar, “Double-shell metamaterial coatings for plasmonic cloaking”, *Phys. Status Solidi RRL* 6, No. 1, 46–48 (2012).

Accepted papers:

Submitted papers:

1. A. Andreychenko, A. Shchelokova, A. Mikhailovskaya, V. Ivanov, I. Sushkov, E. Nenasheva, I. Melchakova, P. Belov, A. Slobozhanyuk, "Targeted clinical MRI", *Nature Communications* (under review).

Patents:

1. **A. P. Slobozhanyuk**, A. N. Poddubny, P.A. Belov, "Magnetic resonance imaging system", patent has been filled, # 2015126987 (03.07.2015); patent in Russia has been received (# 2601373).
2. **A. P. Slobozhanyuk**, A. Shchelokova, S. Glybovski, A. Hurshkainen, P. Belov, S. Enoch, R. Abdeddaim, A. Nikulin "Magnetic resonance imaging coil", patent in Russia has been received (# 183997).
3. **A. P. Slobozhanyuk**, E. Kretov, A. Shchelokova, A. Andreychenko, "Radiofrequency coil for breast magnetic resonance imaging", patent in Russia has been received (# 190567).

***Conference papers*:**

1. **A. P. Slobozhanyuk**, D. S. Filonov, M. K. Khodzitsky, P. A. Belov, “Influence of interface plane angle on transmission properties of superlens”, Proc. of Days on Diffraction’2011, 2011, Vol. 1, pp 171-172, St. Petersburg, Russia, 30 May – 3 June;
2. **A. P. Slobozhanyuk**, D. S. Filonov, M. K. Khodzitsky, P. A. Belov, “Various designs of superlens. MRI applications” VII International Conference of Young Scientists and Specialists "Optics-2011", 2011, pp. 677-679, St. Petersburg, Russia, October 17-21;
3. D. S. Filonov , **A. P. Slobozhanyuk**, M. K. Khodzitsky, P. A. Belov “Simulation of plasmonic cloak” [In Russian], VII International Conference of Young Scientists and Specialists "Optics-2011", 2011, pp. 679-681, St. Petersburg, Russia, October 17-21;
4. **A. P. Slobozhanyuk**, M. Lapine, P. A. Belov, I. V. Shadrivov, Y. S. Kivshar, “Spiral particles for constructing nonlinear metamaterials”, Proc. of Days on Diffraction’2012, 2012, pp. 175-176, St. Petersburg, Russia, 28 May – 1 June 3;
5. D. S. Filonov, A. E. Krasnok, A. E. Miroshnichenko, **A. P. Slobozhanyuk,** P. V. Kapitanova, Y. S. Kivshar and P. A. Belov, “Testing the concept of all-dielectric optical nanoantennas at microwaves”, Proc. of Days on Diffraction’2012, 2012, pp. 134-135, St. Petersburg, Russia, 28 May – 1 June 3;

6. **A. P. Slobozhanyuk**, M. Lapine, P. A. Belov, Y. S. Kivshar, “Nonlinear metamaterials based on spiral resonators” [In Russian], Proc. Of conference “RF Microelectronics”, 2012, vol. 2, pp. 50-54, St. Petersburg, Russia, 4-7 June;
7. D. S. Filonov, A. E. Krasnok, A. E. Miroshnichenko, **A. P. Slobozhanyuk**, P. V. Kapitanova, Y. S. Kivshar, P. A. Belov, “Modeling of Optical Dielectric Nanoantennas at Microwaves”, Proc. of 2012 IEEE AP-S/USNC-URSI Symposium, 2012, Chicago, Illinois, USA, July 8-14;
8. **A. P. Slobozhanyuk**, D. S. Filonov, M. Lapine, P. A. Belov, I. V. Shadrivov, Y. S. Kivshar, “Nonlinear spiral metamaterials”, Proc. of 2012 IEEE AP-S/USNC-URSI Symposium, 2012, Chicago, Illinois, USA, July 8-14;
9. **A. P. Slobozhanyuk**, M. Lapine, I. V. Shadrivov, Y. S. Kivshar and P. A. Belov1, “Novel way for constructing flexible metamaterials with nonlinear chirality”, Proc. of 6th International Congress on Advanced Electromagnetic Materials in Microwaves and Optics (Metamaterials’2012), 2012, pp.824-826, St. Petersburg, Russia, September 17-22.
10. **A. P. Slobozhanyuk**, I.V. Melchakova, P.A. Belov, “Experimental demonstration of evanescent waves enhancement inside wire metamaterial slab”, Proc. of 4th International Conference on Matamaterials, Photonic Crystals and Plasmonics (META'13) , 2013, Sharjah, United Arab Emirates, March 18-22.
11. **A. P. Slobozhanyuk**, I. V. Melchakova, A. V. Kozachenko, C. R. Simovski and P. A. Belov, " Improving sensitivity of magnetic resonance imaging with highly anisotropic metamaterials", Proc. of Days on Diffraction’2013, 2013, pp. 114-115, St. Petersburg, Russia, 27 - 31 May.
12. **A. P. Slobozhanyuk**, P. A. Belov, M. Lapine, R. C. McPhedran, D. A. Powell, I. V. Shadrivov and Y. S. Kivshar, “Novel nonlinear chiral metamaterials”, Proc. of 2013 IEEE AP-S/USNC-URSI Symposium, 2013, Orlando, Florida, July 7- 13.
13. **A. P. Slobozhanyuk**, P. V. Kapitanova, D. S. Filonov, P. A. Belov, M. Lapine, I. V. Shadrivov, D. A. Powell and Y. S. Kivshar, “Photosensitive SRR-metamaterials”, Proc. of 2013 IEEE AP-S/USNC-URSI Symposium, 2013, Orlando, Florida, July 7- 13.
14. **A. P. Slobozhanyuk**, I. V. Melchakova, A. V. Kozachenko, C. R. Simovski and P. A. Belov, “Wire metamaterial: enhancement of evanescent waves and application for improvement of Magnetic Resonance Imaging”, Proc. of 7th International Congress on Advanced Electromagnetic Materials in Microwaves and Optics (Metamaterials’2013), 2013, Bordeaux, France, September 16-19.
15. **A. P. Slobozhanyuk**, P. V. Kapitanova, I. V. Shadrivov, D. S. Filonov, D. A. Powell, P. A. Belov, M. Lapine, and Y. S. Kivshar, “Light coupling in microwave metamaterials”, Proc. of 7th International Congress on Advanced Electromagnetic Materials in Microwaves and Optics (Metamaterials’2013), 2013, Bordeaux, France, September 16-19.
16. **A. P. Slobozhanyuk**, I. V. Melchakova, A. V. Kozachenko, P. A. Belov, C. R. Simovski, "Wire metamaterial for the improvement of magnetic resonance imaging," Microwave & Optoelectronics Conference (IMOC), 2013 SBMO/IEEE MTT-S International , vol., no., pp.1,3, 4-7 Aug. 2013; doi: 10.1109/IMOC.2013.6646485.
17. A. E. Krasnok, D. S. Filonov, **A. P. Slobozhanyuk**, P. A. Belov, C. R. Simovski and Y. S. Kivshar, "Superdirective magnetic nanoantennas with effect of light steering: Theory and experiment," Microwave & Optoelectronics Conference (IMOC), 2013 SBMO/IEEE MTT-S International , vol., no., pp.1,3, 4-7 Aug. 2013; doi:10.1109/IMOC.2013.6646491
18. **A. P. Slobozhanyuk**, A. N. Poddubny, A. J. E. Raaijmakers, C. A. T. van den Berg, I. V. Melchakova, A. V. Kozachenko, Y. S. Kivshar and P. A. Belov, “Manipulation the near field with wire metamaterials”, IEEE MTT-S International Microwave Workshop Series on RF and Wireless Technologies for Biomedical and Healthcare Applications, 2013, Singapore, December 9-11.

19. **A. P. Slobozhanyuk**, P. V. Kapitanova, D. S. Filonov, D. A. Powell, M. Lapine, I. V. Shadrivov, P. A. Belov, R. C. Mc Phedran and Y. S. Krishar, “Optical channels for nonlinear metamaterials", in Proc. of SPIE Photonics Europe 2014 - Photonics, Optics, Lasers, Micro- and Nanotechnologies, 2014, Brussels, Belgium, 14-17 April.
20. **A. P. Slobozhanyuk**, A. N. Poddubny, A. J. E. Raaijmakers, C. A. T. van den Berg, I. V. Melchakova, A. V. Kozachenko, Y. S. Kivshar and P. A. Belov, “Near-field manipulation by metasurface for increased sensitivity of Magnetic Resonance Imaging”, Days on Diffraction’2014, 2014, St. Petersburg, Russia, 26 - 30 May.
21. **A. P. Slobozhanyuk**, A. N. Poddubny, A. E. Krasnok and P. A. Belov, "Demonstration of the magnetic Purcell effect in wire metamaterials", SPIE Optics and Photonics 2014, San Diego, USA, 2014, 17-21 August.
22. **A. P. Slobozhanyuk**, P. V. Kapitanova, D. S. Filonov, D. A. Powell, I. V. Shadrivov, M. Lapine, P. A. Belov, R. C. McPhedran, and Y. S. Kivshar, " Microwave interaction with visible light ", SPIE Optics and Photonics 2014, San Diego, USA, 17-21 August, 2014.
23. **A. P. Slobozhanyuk** and P.A. Belov (Invited talk), "Application of wire metamaterial for Magnetic Resonance Imaging", The 35th PIERS, 2014, Guangzhou (Canton), China, 25-28 August.
24. **A. P. Slobozhanyuk**, "Hyperbolic metamaterials for medical application", 2nd International Workshop on Hyperbolic Metamaterials, 2014, Canberra, Australia, 4-5 December.
25. **A. P. Slobozhanyuk**, A. V. Shchelokova, A. N. Poddubny, " Usage of meta-resonators for improvement of magnetic resonance imaging", Days on Diffraction’2015, 2015, St. Petersburg, Russia, 25 - 30 May.
26. **A. P. Slobozhanyuk** (Invited talk), "Metamaterials-inspired technologies for improvement of Magnetic Resonance Imaging", Colloquia - the Physics Department of Queens College, CUNY, New York City, NY, USA December 2, 2015
27. **A. P. Slobozhanyuk**, "Metamaterials for MRI", oral talk at the seminar of department of Radiology, Leiden University Medical Center, Leiden, Netherlands, March 10, 2016.
28. **A. P. Slobozhanyuk**, H. Mousavi, X. Ni, D. A. Smirnova, Y. S. Kivshar, and A. B. Khanikaev, "All-Dielectric Three-Dimensional Photonic Topological Metacrystals", Conference on Lasers and Electro-Optics (CLEO), San Jose, California, USA 5–10 June 2016.
29. **A. P. Slobozhanyuk** (Invited talk), " Metamaterial-based Resonators for Magnetic Resonance Imaging", META’16, the 7th International Conference on Metamaterials, Photonic Crystals and Plasmonics, Torremolinos (Málaga), Spain, 25 -28 July 2016.
30. **A. P. Slobozhanyuk**, A. N. Poddubny, P. A. Belov and Y. S. Kivshar, "Metasurfaces provide a new way for building magnetic resonance imaging scanners", 2016 IEEE International Symposium on Antennas and Propagation/USNC-URSI National Radio Science meeting, Fajardo, Puerto Rico, June 26 - July 1, 2016.
31. M. A. Gorlach, **A. P. Slobozhanyuk**, I. S. Sinev, A. K. Samusev, I. S. Mukhin, Y. F. Yu, A. I. Kuznetsov, A. E. Miroshnichenko, P. A. Belov, A. N. Poddubny and Yu. S. Kivshar, (Invited talk) "Topological edge states in one-dimensional arrays: towards nonlinear topological photonics", the International Conference on Coherent and Nonlinear Optics (ICONO-2016), Minsk, Belarus, 26-30 September, 2016.
32. **A. P. Slobozhanyuk**, R. Schmidt, P. A. Belov, A. G. Webb, (Keynote talk), "Thin metasurfaces for magnetic resonance imaging incorporating high permittivity materials", Progress In Electromagnetics Research Symposium 2017, St. Petersburg, Russia, 22-25 May, 2017.
33. **A. P. Slobozhanyuk**, A. N. Poddubny, A. B Khanikaev, Y. S. Kivshar, " Observation of Topological Edge States in One-, Two-, and Three-dimensional Electromagnetic Structures", Progress In Electromagnetics Research Symposium 2017, St. Petersburg, Russia, 22-25 May, 2017.

34. **A. Slobozhanyuk**, Y. Kivshar, A. Shchelokova, I. Melchakova, S. Glybovski, P. Belov, A. Webb, "Tunable hybrid metasurfaces for image quality enhancement", IEEE Antennas and Propagation & USNC/URSI National Radio Science Meeting, 2017 IEEE International Symposium, San Diego, USA, 9-14 July 2017.
35. **A. Slobozhanyuk**, Y. Kivshar, A. Poddubny, A. Khanikaev, "Photonic topological edge states in metallic and all-dielectric structures", IEEE Antennas and Propagation & USNC/URSI National Radio Science Meeting, 2017 IEEE International Symposium, San Diego, USA, 9-14 July 2017.
36. A. V. Shchelokova, **A. P. Slobozhanyuk**, I. V. Melchakova, S. B. Glybovski, A. G. Webb, Y. S. Kivshar, and P. A. Belov, "Tunable hybrid metasurfaces for MRI applications", AIP Conference Proceedings 1874, 030033 (2017).
37. **A. P. Slobozhanyuk** (Invited talk), " Tunable Hybrid Metasurfaces for Magnetic Resonance Imaging", META'17, the 8th International Conference on Metamaterials, Photonic Crystals and Plasmonics, Incheon - Seoul, South Korea, 25 -28 July 2017.
38. A. Shchelokova, R. Schmidt, **A. Slobozhanyuk**, T. Kallos, A. Webb, P. A. Belov, "Enhancement of magnetic resonance imaging with metasurfaces: From concept to human trials", 11th International Congress on Engineered Materials Platforms for Novel Wave Phenomena (Metamaterials), Marseille, France, 27 Aug.-2 Sept. 2017.
39. **A. P. Slobozhanyuk**, A. V. Shchelokova, X.Ni, S. H.Mousavi, D.A. Smirnova, P.A. Belov, A.Alù, Y. S. Kivshar, and A.B. Khanikaev, All-dielectric topological meta-optics, CLEO: QELS_Fundamental Science 2018, San Jose, USA 13–18 May 2018.
40. **A. P. Slobozhanyuk**, "Multimodal metasurfaces applications in magnetic resonance imaging", METANANO 2018, Sochi, Russia, 17 - 21 Sep. 2018.
41. **A. P. Slobozhanyuk**, Yu. S. Kivshar, A. B. Khanikaev (Invited talk), "Experimental studies of all-dielectrictopologically nontrivialstructures", PIERS 2018, Toyama, Japan, 1 - 4 Aug. 2018.
42. **A. P. Slobozhanyuk** (Invited talk), "Metasurfaces: from fundamental ideas of topological photonics to applications in magnetic resonance imaging", IEEE Radio and Antenna Days of the Indian Ocean, Mauritius, 15 - 18 Oct. 2018.
43. **A. P. Slobozhanyuk** (Invited talk), "Metasurfaces application in magnetic resonance imaging", 8th Biennial Western Sydney University Symposium on NMR, MRI and Diffusion, Campbelltown, Australia, 8 - 9 Nov. 2018.

MEMBERSHIP IN PROFESSIONAL SOCIETIES:

A member of SPIE, IEEE (AP-S, MTT-S, Photonics-S), Institution of Engineering and Technology (IET), American Physical Society. (SPIE ID: 3393206 ; IEEE ID: 91246473, IET ID: 1100422661; APS ID: 61195176).

ACTIVITY IN OPTICS AND PHOTONICS:

2011

1. Participation in organization of seminar CST (Computer Simulation Technology) company (May 31, ITMO University, Saint Petersburg, Russia), as member of organizing committee.
2. Participation in organization of international conference "Days on Diffraction'2011" (May 30 – June 3, Saint Petersburg, Russia), as a member of organizing committee; http://www.pdmi.ras.ru/~dd/index.php

3. Participation in organization of VII International Conference of Young Scientists and Specialists “Optics-2011”(October 17-21, ITMO University, Saint Petersburg, Russia), as a member of organization committee; http://conf-opt.ifmo.ru/index.php?page=metaschool.php
4. Organization of **24** workshops about “Metamaterials, Electromagnetics and Photonics” (Jan. 1 – Dec. 31, 2011, Laboratory “Metamaterials”, ITMO University), http://phoi.ifmo.ru/metamaterials/events/
5. Organization the workshop “Magic of invisibility on basis of metamaterials” within the School kids Festival (November 26, ITMO Univesity) (http://spie.ifmo.ru/?a=outreach_school_kids) .

2012

1. Participation in organization of international conference “Days on Diffraction’2012” (28 May – 1 June 3, St. Petersburg, Russia, 2012), as a member of organizing committee, http://www.pdmi.ras.ru/~dd/index.php
2. Participation in organization of 6th International Congress on Advanced Electromagnetic Materials in Microwaves and Optics (Metamaterials’2012), (September 17-22, St. Petersburg, Russia, 2012), as a member of local organizing committee, http://congress2012.metamorphose-vi.org/
3. Organization of **23** workshops about “Metamaterials, Electromagnetics and Photonics” (Jan. 1 – Dec. 31, 2012, Laboratory “Metamaterials”, ITMO University), http://phoi.ifmo.ru/metamaterials/events/
4. Participation in organization of Second Scientific School kids Festival (January 20, ITMO University, Saint Petersburg, Russia) http://spie.ifmo.ru/?a=outreach_school_kids
5. Organization of annual middle school course "Photonics makes our life better" (September 12, St. Petersburg, Russia, 2012) as a local organizer.

2013

1. Organization of **24** workshops about “Metamaterials, Electromagnetics and Photonics” (Jan. 1 – Nov. 1, 2013, Laboratory “Metamaterials”, ITMO University), http://phoi.ifmo.ru/metamaterials/events/
2. Participation in organization of international conference “Days on Diffraction’2013” (May 27 – 31, St. Petersburg, Russia, 2013), as a member of organizing committee, http://www.pdmi.ras.ru/~dd/index.php
3. Organization of the lecture for students and researchers “Metamaterials: Technology of the Future” given by Prof. Vladimir Shalaev in ITMO University (September 26, 2013, St. Petersburg, Russia).
4. Organization of the MR course “MRI Safety and Numerical Simulation” given by Dr. Mikhail Kozlov in ITMO university (October 28-30, 2013, St. Petersburg, Russia).

2014

1. Participation in organization of international conference “Days on Diffraction’2014” (26-30 May, St. Petersburg, Russia, 2014), as a member of organizing committee, http://www.pdmi.ras.ru/~dd/index.php
2. Organization of the MRI course given by Prof. C. A. T. van den Berg in ITMO university (February 3-5, 2014, St. Petersburg, Russia).
3. Public lecture at ITMO university "Applications of metamaterials", September 15, 2014, St. Petersburg, Russia.

2015

1. Participation in organization of international conference “Days on Diffraction’2015” (25-29 May, St. Petersburg, Russia, 2015), as a member of organizing committee, http://www.pdmi.ras.ru/~dd/index.php

2016

1. Participation in organization of conference “International Conference on Metamaterials and Nanophotonics METANANO - 2016" (5 - 9 September, 2016 Anapa, Russia), as a member of organizing committee, http://metanano.ifmo.ru/2016/

2017

1. Public lecture at Research School of Physics and Engineering in the framework of mid-term seminar "Manipulating Electromagnetic Fields with Advanced Metamaterials", (10th February, 2017, Canberra, Australia), https://physics.anu.edu.au/events/?EventID=590.
2. Public lectures for undergraduate students "Role of topology in physics: from Nobel prize to topological photonics", February-March 2017 (Saint Petersburg, Russia).
3. Special session organization " Photonic topological insulators: fundamental physics and state-of-the-art devices" in the framework of the "8th International Conference on Metamaterials, Photonic Crystals and Plasmonics (META 2017)" (25 - 28 July 2017, Incheon-Seoul, Korea), as a special session organizer (together with Prof. Andrey Miroshnichenko), http://metaconferences.org/ocs/index.php/META17/index/pages/view/sessions#.WJ_djW-LSpo
4. Participation in organization of conference “International Conference on Metamaterials and Nanophotonics METANANO - 2017" (18 - 22 September, 2017 Vladivostok, Russia), as a member of technical program committee, http://metanano.ifmo.ru/
5. Special session organization "Topological photonics" in the framework of the conference “International Conference on Metamaterials and Nanophotonics METANANO - 2017" (18 - 22 September, 2017 Vladivostok, Russia), as a special session organizer.
   Special session organization " Novel Materials and Techniques For Magnetic Resonance Imaging" in the framework of the conference “International Conference on Metamaterials and Nanophotonics METANANO - 2017" (18 - 22 September, 2017 Vladivostok, Russia), as a special session organizer (together with Dr. Stanislav Glybovski).

2018

1. Organization of the 13th International Symposium on Nanophotonics and Metamaterials (4-8 June, St. Petersburg, Russia, 2018), as a general chair, https://metasymposium.ifmo.ru/.

2019

2. Organization of the ITMO Open Science conference (8 February, St. Petersburg, Russia, 2019), as a general chair, https://openscience.itmo.ru/.

ACTIVITY IN STUDENT CHAPTERS:

I was the lead organizer of the IEEE "ITMO - Saint Petersburg Student Branch" (2011).

http://osc.pep-a.me/ieee-2/
President of IEEE "ITMO - Saint Petersburg Student Branch" (**2011-2012**)
President of IEEE MTTS ITMO - Saint Petersburg Student Branch Chapter (**2011 – 2013**)
Vice - President of IEEE APS ITMO - Saint Petersburg Student Branch Chapter (**2011 – 2013**)
Vice - President of IEEE Photonics ITMO - Saint Petersburg Student Branch Chapter (**2011 – 2012**)
Member of OSA Student Chapter of National Research University ITMO (**2011-2012**)
Member of SPIE Student Chapter of National Research University ITMO (**2011 – 2015**)
Member of Optical Student Chapter (OSC) of National Research University ITMO (**2011-2015**)
Member of SPIE Student Chapter of Australian National university (2015 - till now)

REVIEWER:

Science Advances (AAAS); Laser & Photonics Reviews, Advanced Optical Materials (Wiley Online Library); Scientific Reports (Nature Publishing Group); ACS Photonics, The Journal of Physical Chemistry C (ACS Publications); Applied Physics Letters, Journal of Applied Physics, Review of Scientific Instruments (American Institute of Physics); Optics Express, Optics Letters, Chinese Optics Letters (OSA Publishing), and International Journal of Antennas and Propagation (Hindawi Publishing Corporation)

REFERENCES:

Prof. Pavel A. Belov, Head of the Metamaterials Laboratory at ITMO University, St. Petersburg, Russia, email: belov@metalab.ifmo.ru
Prof. Yuri S. Kivshar, Head of Nonlinear Physics Centre at The Australian National University, Canberra, Australia, email: ysk@internode.on.net