

# Dmitry Dobrykh

## PERSONAL INFORMATION

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**Date of birth:** 26 April 1995

**Mobile phone:** +7 904 618 93 25

**Email:** d.dobrykh@metalab.ifmo.ru, dobrykhd@yandex.ru

## EDUCATION BACKGROUND

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**Dates:** September 2017 – present time

**Name of organization:** Saint Petersburg National Research University of Information Technologies, Mechanics and Optics, Department of Photonics and Optical Informatics (ITMO University)

**Contact data:** 197101, Russia, Saint Petersburg, 49 Kronverkskiy av.

**Website:** <http://en.ifmo.ru/>

**Title of qualification:** Master of Science in Photonics and Optical Informatics

**Title of thesis:** Tunable electromagnetic structures with topological states

**Dates:** September 2013 – June 2017

**Name of organization:** Saint Petersburg National Research University of Information Technologies, Mechanics and Optics, Department of Photonics and Optical Informatics (ITMO University)

**Title of qualification:** Bachelor of Science in Photonics and Optical Informatics

**Title of graduation work:** Wireless Coil for MRI Based on a Periodic Split-Loop Array

## EMPLOYMENT HISTORY

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**Dates:** April 2015 – Present time

**Title:** Engineer

**Work place:** Saint Petersburg National Research University of Information Technologies, Mechanics and Optics, Department of Nanophotonics and Optical Informatics (ITMO University), The International Research Centre for Nanophotonics and Metamaterials.

**Contact data:** 199034, Russia, Saint Petersburg, Birjevaja line V.O., 14.

**Tel.:** +7 904 618 93 25

**Website:** <https://metalab.ifmo.ru/people/~dobrykh>

**Dates:** October 2014 – January 2015

**Title:** Shop assistant

**Work place:** Ltd “KEY”.

## PROFESSIONAL SKILLS

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**Languages:**

- Russian: native speaker
- English: upper intermediate

**Math/Simulation software:**

- EM simulation: CST Microwave Studio, Comsol Multiphysics
- Math software: Mathcad, MatLab, Python.
- Other software: Microsoft Office, CorelDraw, Inscap.

## **MEMBERSHIPS AND ACTIVITIES**

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- A member of IEEE (Institute of Electrical and Electronics Engineers, [www.ieee.org](http://www.ieee.org)) (ID: 94096187).
- A member of SPIE (Society of Photo-Optical Instrumentation Engineers [www.spie.org](http://www.spie.org)) (ID: 4170236).

## **LIST OF REFEREED PROCEEDINGS AND TALKS**

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### **1. Dielectric resonator antenna for coupling to NV centers in diamond**

Polina Kapitanova, Vladimir Soshenko, Vadim Vorobyov, Dmitry Dobrykh, Stepan Bolshedvorskiih, Vadim Sorokin and Alexey Akimov // AIP Conference Proceedings, vol. 1874, pp. 30017, 2017  
[DOI: 10.1063/1.4998046]

### **2. A metasolenoid-like resonator for MRI applications**

A. V. Shchelokova, D. A. Dobrykh, S. B. Glybovski, I. V. Melchakova, P. A. Belov // Engineered Materials Platforms for Novel Wave Phenomena (Metamaterials), 2017 11th International Con, pp. 82-84, 2017

[DOI: 10.1109/MetaMaterials.2017.8107846]

### **3. Tunable water-based microwave metasurface**

Kapitanova, P., Odit, M., Dobrykh, D., Andryeuskii, A., Lavrinenko, A.V., Belov, P. // 11th European Conference on Antennas and Propagation, EUCAP 2017, pp. pp.2599-2602, 2017

[DOI: 10.23919/EuCAP.2017.7928190]

### **4. Metasurface-based wireless coils for magnetic resonance imaging**

Alena V. Shchelokova, Dmitry A. Dobrykh, Alexey P. Slobozhanyuk, Stanislav B. Glybovski, Mikhail A. Zubkov, Ekaterina A. Brui, Irina V. Melchakova, Pavel A. Belov // 2017 IEEE International Conference on Microwaves, Antennas, Communications and Electronic Systems, 2017

[DOI: 10.1109/COMCAS.2017.8244854]

### **5. A Wireless Coil for MRI Based on a Periodic Split-Loop Array (Oral)**

Dmitry Dobrykh, Alena Shchelokova, Stanislav Glybovski, Mikhail Zubkov, Ekaterina Bruy, Dmitry Dmitriev, Alexander Kozachenko, Andrey Sokolov, Alexander Efimtcev, Vladimir Fokin, Irina Melchakova, Niko van den Berg and Pavel Belov // Metanano-2017.

### **6. Nonlinear control of electromagnetic topological edge states (Oral)**

D. A. Dobrykh, A. V. Yulin, A. P. Slobozhanyuk, A. N. Poddubny, and Yu. S. Kivshar // Metanano-2018.

## **LIST OF PAPERS**

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### **1. Nonlinear symmetry breaking in photometamaterials**

M.A. Gorlach, D.A. Dobrykh, A.P. Slobozhanyuk, P.A. Belov, M. Lapin // Physical Review B, vol. 97, pp. 115119, 2018

[DOI: 10.1103/PhysRevB.97.115119]

### **2. Volumetric Wireless Coil Based on Periodically Coupled Split-Loop Resonators for Clinical Wrist Imaging**

Alena V. Shchelokova, Cornelis A.T. van den Berg, Dmitry A. Dobrykh, Stanislav B. Glybovski, Mikhail A. Zubkov, Ekaterina A. Brui, Dmitry S. Dmitriev, Alexander V. Kozachenko, Alexander Y. Efimtcev, Andrey V. Sokolov, Vladimir A. Fokin, Irina V. Melchakova, Pavel A. Belov // Magnetic Resonance in Medicine, 2018.

[DOI: 10.1002/mrm.27140]

**3. A new quadrature annular resonator for 3 T MRI based on artificial-dielectrics**

Anna Mikhailovskaya, Alena Shchelokova, Dmitry Dobrykh, Ivan Sushkov, Alexey Slobozhanyuk, Andrew Webb // Journal of Magnetic Resonance, vol. 291, pp. 47-52, 2018

[DOI: <https://doi.org/10.1016/j.jmr.2018.04.010>]

**4. Experimental observation of hybrid TE-TM polarized surface waves supported by hyperbolic metasurface**

Oleh Y. Yermakov, Anna A. Hurshkainen, Dmitry A. Dobrykh, Polina V. Kapitanova, Ivan V. Iorsh, Stanislav B. Glybovski, Andrey A. Bogdanov // Phys. Rev. B, vol. 98, pp. 195404, 2018

[DOI: [10.1103/PhysRevB.98.195404](https://doi.org/10.1103/PhysRevB.98.195404)]

**5. Nonlinear control of electromagnetic topological edge states**

D. A. Dobrykh, A. V. Yulin, A. P. Slobozhanyuk, A. N. Poddubny, and Yu. S. Kivshar // *Phys. Rev. Lett.*, 2018.

[DOI: [10.1103/PhysRevLett.121.163901](https://doi.org/10.1103/PhysRevLett.121.163901)]

**6. 3D uniform manipulation of NV centers in diamond using dielectric resonator antenna**

P. Kapitanova, V. V. Soshenko, V. V. Vorobyov, D. Dobrykh, S. V. Bolshedvorskii, V. N. Sorokin, A. V. Akimov // JETP Letters, vol. 108, pp. 625, 2018.

[DOI: [DOI: 10.1134/S0370274X1821004X](https://doi.org/10.1134/S0370274X1821004X)]