

## CV: Ivan Iorsh

### Personal information

Family name, First name: **Iorsh, Ivan**

Researcher unique identifiers:

**ORCID ID - [0000-0003-4992-6122](https://orcid.org/0000-0003-4992-6122), ResearcherID - [J-3540-2015](https://pubs.rsos.royalsocietypublishing.org/author/Ivan-Iorsh/J-3540-2015).**

Date of birth: **08/11/1986**

Nationality: **Russian**

URL: [metalab.ifmo.ru/people/~iorsh](http://metalab.ifmo.ru/people/~iorsh)

### Education

- 2012      PhD  
Department of Nanotechnology, Academic University RAS, Russia.  
Prof. Mikhail Kaliteevskii.
- 2013      PhD  
Condensed Matter Theory, Department of Physics, Durham University, UK.  
Prof. Richard A. Abram.
- 2009      Master  
Department of Nanotechnology, Academic University RAS, Russia.

### Current position(s)

- 2015 – present      Associate Professor  
  
Department of Nanophotonics and Metamaterials, ITMO University,

### Previous positions

- 2016 – 2017      Research Associate  
School of Physical and Mathematical Sciences, NTU University, Singapore.
- 2013 – 2015      Research Associate  
Department of Nanophotonics and Metamaterials, ITMO University, Russia.

### Teaching activities

- 2014 – Current      Lecturer – Advanced topics in quantum mechanics, ITMO University.
- 2015 – 2016      Lecturer – Introduction to Feynman Diagrams in many-body problem,  
Academic University RAS, Russia.

### Early achievements track-record.

**Publications:** Published 90 papers (**6 Physical Review Letters, 1 Nature Photonics, 1 Nano Letters, 1 Laser Photonics Reviews, 2 Nanoscale, 20 Physical Review B, 7 Applied Physics Letters** etc)

**h-index 26** (Google Scholar) and **21** (Scopus)

Number of total citations 3090 (Google Scholar) and 2007 (Scopus)

**8** Invited talks at international conferences and workshops

### Prizes, honors and awards.

- Dynasty foundation award for PhD students (2011-2013).
- Grant of the President of Russian Federation (2014-2018).

- Award of the best cycle of research articles in *Letters to Journal of Experimental and Theoretical Physics (JETP Letters)*, 2015. JETP Letters is the most influential Russian physics journal. I have been awarded a prize of the best cycle of research articles for the several papers on plasmonics with graphene nanostructures that were published there.
- Russian Foundation for Basic Research postdoc fellowship (2016-2018).

### **Research Support income.**

- Russian Science Foundation Grant, ~80K USD per annum, 2017-2019, “High quality subwavelength resonators based on bound states in the continuum.” Principal investigator.
- Grant of Ministry of Russian Federation ~80K USD per annum, 2017-2019, “Topological phase transitions and multiphoton processes in metasurfaces.” Principal investigator.
- Russian Foundation for Basic Research, ~20K USD per annum, 2016-2018, “Generation of entangled photon pairs in nonlinear metamaterials and metasurfaces.” Principal investigator
- Grant of President of Russian Federation, ~10K USD per annum, 2018-2020, “strong light-matter coupling in TMDC monolayers,” Principal investigator.

### **Patents.**

- Optically controlled spin transistor, Russian patent # 170009.

### **Organization of the conferences**

- Head of the Program Committee Chair of the international conference METANANO 2016.
- Member of the Program Committee Chair of the international conference METANANO 2017, 2018, OECS 2019.

### **Positions of trust.**

- Member of the ITMO University Research Council
- Member of the ITMO Fellowship Program Committee.
- Reviewer of the Russian Science Foundation.
- Reviewer of Physical Review Letters, PRB, PRA, ACS Photonics and Nano Letters.

### **Supervision of Master and PhD students**

- Vanik Shahnazaryan - 2017 PhD Student defence - strong light-matter coupling in nanostructures.
- Mehedi Hasan, 2016 Master Student – topological edge state engineering with external illumination
- Anton Ovcharenko, 2016 Master Student – spin angular momentum of light in hyperbolic metasurfaces.
- Currently two Master Students (defence 2019): Gulnaz Rahmanova and Sergey Krasikov and 2 PhD Students (defence planned 2020) Stas Kolodny and Valera Kozin.

### **Major collaborations**

1. Australian National University, Nonlinear Physics Centre, headed by Yuri Kivshar. Collaboration in the field of graphene plasmonics, and hyperbolic metamaterials.
2. Denmark Technical University, Group of Andrei Lavrinenko. Collaboration in the field of anisotropic and chiral metasurfaces.
3. Southampton University, UK. Professor Alexey Kavokin. Collaboration on exciton-

polariton physics in metamaterial structures.

4. Group of Professor Pallab Bhattacharya, Michigan University, USA. Collaboration on the polariton laser kinetics.
5. Group of Professor Maurice Skolnick, University of Sheffield, UK. Collaboration on exciton-polariton polariton lattices.
6. Group of Professor Ivan Shelykh, University of Iceland. Collaboration on the effect of strong light-matter coupling in low-dimensional nanostructures.
7. Group of Professor Timothy Liew, Nanyang Technological University. Collaboration on exciton-polariton lattices