

## EDUCATION

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<b>Nanyang Technological University (NTU), Singapore</b> PhD (Materials Science & Engineering)	<b>2017 – 2022</b>
<b>Moscow Institute of Physics and Technology, Russia</b> Master of Science (Applied Mathematics & Physics) <b>First Class Honours</b> / CGPA: 4.95/5.00	<b>2014 – 2016</b>
<b>Moscow Institute of Physics and Technology, Russia</b> Bachelor of Science (Applied Mathematics & Physics) CGPA: 4.53/5.00	<b>2010 – 2014</b>

## EXPERIENCE

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<b>Oak Ridge National Laboratory (ORNL), Oak Ridge, TN, USA</b> Postdoctoral Research Associate	<b>2022 – current</b>
<b>Nanyang Technological University (NTU), Singapore</b> Graduate Research Associate PhD Dissertation: Revealing Nanoscale Lithiation and Dissolution Pathways by <i>In Situ</i> Cryogenic Electron Microscopy.	<b>2017 – 2022</b>
<b>Technological Institute for Superhard and Novel Carbon Materials, Moscow, Russia</b> Intern Researcher Conducted TEM characterization of novel carbon-based materials to reveal a process-structure-property relationship.	<b>2013 – 2016</b>

## SKILLS

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### Imaging:

- Hands-on expertise with Aberration-Corrected Scanning Transmission Electron Microscopes: JEOL ARM-200F, JEOL GrandARM 300, imaging, and spectroscopy at room/cryo temperatures.
- Nion instruments (UltraSTEM 100, MACSTEM)
- Atomic resolution STEM imaging (HAADF, ADF, ABF, BF), Electron Diffraction.
- Electron Energy Loss Spectroscopy (EELS), monochromated EELS, quantitative and qualitative chemical analysis.
- Energy Dispersive X-ray (EDX, or EDS) spectroscopy for chemical/elemental analysis.
- Simulations of imaging contrast (Dr.Probe).
- Experienced with the following *in situ* TEM holders: Cryo-temperature (double-tilt HennyZ, Gatan Elsa), Liquid/electrochemical, electrical/heating (Protochips), Tomography (Gatan).
- SEM: surface imaging and EDS chemical analysis.

### Samples preparation:

- Preparation of electron transparent samples using Dual-beam FIB-SEM system (Zeiss Crossbeam 540).
- Contact of thin samples to MEMS devices using FIB-SEM for *in situ* TEM experiments.

### Software & Data Analysis:

- Gatan Digital Micrograph, ImageJ, JEMS, VESTA, Dr.Probe, Python, Hyperspy, and Atomap packages.

**Languages:** Proficient in English and Russian.

**Hobbies:** sport and traveling.

## **PUBLICATIONS/CONFERENCES**

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**Publications:** 12 refereed journal articles.

**Conference Presentations:** 13 refereed presentations at international conferences.

## **LEADERSHIP / CO-CURRICULAR ACTIVITIES**

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### **Teaching Fellow (NTU):**

- Assisted in teaching two NTU undergraduate courses ranging in size from 10 to 150 students.  
Topics included: Mechanical Behavior of Materials, laboratory technique: Microstructure of Materials.
- Prepared course materials, including laboratory experiments, lectures, exams, homework, and practice problems.
- Led weekly laboratory, problem-solving, and discussion sections for groups of 10-30 students.
- Graded exams and weekly homework.

**Symposium assistant (June 2019)**, ICMAT 10<sup>th</sup> International Conference on Materials for Advanced Technologies, Singapore.

**Symposium assistant (Nov 2017)**, International workshop on Advanced and In situ Microscopies of Functional Nanomaterials and Devices, Singapore.

## **AWARDS AND ACHIEVEMENTS**

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IFSM Young Scientists Assembly Award to attend 19<sup>th</sup> International Microscopy Congress (2018) | Award for the best scientific microscopy image, NTU, Singapore (2017) | NTU Research Scholarship (tuition + stipend) (2017-2021) | Presidential Scholarship for Scientific Achievements, MIPT (2015-2016) | MIPT Project 5-100 Award – sponsored international research internship in University of Muenster, Germany (2015) | MIPT Scholarship for Masters degree: tuition fees and stipend fully covered (2014-2016) | MIPT Scholarship for Bachelors degree: tuition fees and stipend fully covered (2010-2014).