

Dmitry V. Krasnikov, PhD, Assistant Professor

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Work experience - Science

Skolkovo Institute of Science and Technology (Moscow), Laboratory of Nanomaterials (2017-curr.time)

Boreskov Institute of Catalysis (Novosibirsk), Laboratory of nanostructured carbon materials (2009-2017)

Work experience - Teaching

Skolkovo Institute of Science and Technology:

- Catalysis (instructor; 2022-2024)
- Aerosol Science and Technology (co-instructor; 2018-2024)
- Industrial immersion coordinator for educational track "physics" (organization of 8-week summer internships for MSc students in industrial companies; 2021-2025)
- Carbon Nanomaterials (lecture on "Mechanisms for nanocarbon formation"; exercise on carbon nanotube growth; 2017 – 2025)
- Design of Chemical Sensors: from Fundamentals to Applications (lecture on "Surface chemistry"; exercise on CVD synthesis of materials; 2021 – 2025)

Novosibirsk State University:

- MOOC "Physical Chemistry" on [Coursera](https://www.coursera.org) and [Lectorium](https://www.lecturium.ru) (2018-curr.time)
- Physical chemistry of Heterogeneous catalysis (instructor; 2017)
- Kinetics of Heterogeneous Catalytic Reactions (instructor; 2016)
- Chemical Kinetics (seminars; 2014-2018)

Professional skills

The fields of expertise: physical chemistry, aerosol science, catalysis, nanotechnology, composites, chemical engineering, and carbon materials. Selected scientific studies performed:

- Advanced optimization of carbon nanotube synthesis with machine learning
- Development of new reactors for carbon nanotube synthesis
- Covalent and non-covalent functionalization of carbon nanotube surface
- One-step production of single-crystal graphene of a cm size
- Multi-level engineering of carbon nanomaterials for optics, electronics, and sensorics
- The synthesis and the processing of polymer composites and suspensions based on nanotubes

Education

Novosibirsk State University (Novosibirsk, Russia), the chair of Catalysis and Adsorption, the Department of Natural Sciences (undergraduate student: 2007- 2012, aver. mark "5.0"; PhD student: 2012 - 2015)

Additional Education

Course of additional education "Innovative Entrepreneurship", Novosibirsk State University (2010)

Course of additional education **sMBA** (from student to master of business administration) (2012-2013)

Online course "Writing in the sciences" (Stanford University; 2016)

Course "Facilitating and Assessing Learning" (Skolkovo Institute of Science and Technology; 2021)

Achievements

h-index: 24 (Scopus) 28 (Google Scholar)

Co-author of 112 scientific papers, 2 books, and 6 patents

Thesis advisor of 8 PhD theses, Scientific (co)advisor of 24 MSc theses and 3 BSc diplomas 2019-2025

Skoltech Faculty Excellence Recognition Awards 2024, 2025

Awardee of All-Russian contest in chemical physics for young scientists 2024

Skoltech award "Innovations in Education" 2023

Award of Moscow government for young scientists 2023

IInd award for oral talk at IV Baikal conference on materials science 2022

Grant of the President of Russia for young scientists providing cutting edge research 2022-2023

Ist award for the poster presentation at IV national congress on catalysis "Ruscatalysis" 2021

Zhores Alferov Scholarship for young scientists in physics and nanotechnology 2020

Winner of mobility grant by Academy of Finland (prof. Esko Kauppinen Aalto University) 2020-2021

EdCrunch Award OOC "For the ability to clearly explain the most abstract ideas"	2018
Best oral presentation of IV Scientific Conference "Boreskov Readings"	2017
I st award in the contest of scientific researches of Boreskov Institute of Catalysis	2015
Diplomas in the contest for young scientist researches of Boreskov Institute of Catalysis	2014, 2016
Winner of personal grant of Prokhorov fund	2013
Scholarship students of "British Petroleum" (2013, Schlumberger (2012) "Baker Hughes" (2011,2010)	
Zamaraev stipend for PhD students of Boreskov Institute of Catalysis	2013
Winner of personal grant for innovative research ("U.M.N.I.C." program of RF)	2013-2015
"EFCATs PhD student award" at XI and XII European congresses on catalysis	2013, 2015
Stipend of the President of Russia for PhD students providing innovative research	2012-2014
Diploma for best talk at workshop "Nanocarbons in electric and medical applications"	2012
Stipend of federal scholarship program of V. Potanin's foundation	2012
2nd place Diploma of scientific works of all-Russian contest of students and PhD students	2012
Academicians G. K. Boreskov and K. I. Zamaraev Stipend	2010-2011
Diplomas Scientific Students' Conference "Student and Scientific-Technological Advance"	2010-2012
V.A. Koptug stipend of the Municipality Novosibirsk	2009-2010
1st place Diploma in the I regional student Olympiad in the field of nanotechnology	2009
Stipend of Scientific Council of Department of Natural Sciences of the NSU	2008
3rd place Diploma all-Siberian school Olympiad in chemistry	2007

Additional activities

Secretary of organizing committee for conferences and workshops: "Applied Nanotoxicology and Nanotechnology" (2013). "Electromagnetic Properties of Novel Materials" (2018, 2024), "Bilateral (Russia-Finland) Conference on Functional Materials" (2020), Resonant Nanophotonics Educational Workshop (2023, 2024); member of organizing committee of "GEN-Y" (Sochi, 2019): Skoltech Cross-Disciplinary Conference

Additional skills

Languages: English (CAE), Spanish (beginner) **Sports:** swimming
PC: HyperChem, Mathcad, Microsoft Office (VBA), Origin, Corel Draw, Photoshop, Matlab, SolidWorks

Selected peer-reviewed publications

1. Artem K. Grebenko, **Dmitry V. Krasnikov**, Anton V. Bubis , *et al.* "High-Quality Graphene Using Boudouard Reaction" **Advanced Science** (2022), 2200217, [10.1002/advs.202200217](https://doi.org/10.1002/advs.202200217)
2. Ilya V. Novikov, **Dmitry V. Krasnikov**, Il Hyun Lee, *et al.* "Aerosol CVD Carbon Nanotube Thin Films: From Synthesis to Advanced Applications - A Comprehensive Review" **Advanced Materials** (2025), 2413777 [10.1002/adma.202413777](https://doi.org/10.1002/adma.202413777)
3. **Dmitry V. Krasnikov**, Eldar M. Khabushev, Andrey Gaev, *et al.* "Machine Learning Methods for Aerosol Synthesis of Single-walled Car-bon Nanotubes" **Carbon**, (2023) 202, 76 [10.1016/j.carbon.2022.10.044](https://doi.org/10.1016/j.carbon.2022.10.044)
4. Arina V. Radivon, ..., **Dmitry V. Krasnikov**, ..., Maria G. Burdanova "Expanding THz vortex generation functionality with advanced spiral zone plates based on single-walled carbon nanotube films" **Advanced Optical Materials** (2024), 12, 2303282 [10.1002/adom.202303282](https://doi.org/10.1002/adom.202303282)
5. Kirill V. Voronin, ..., **Dmitry V. Krasnikov**, ..., Valentyn Volkov "Programmable Carbon Nanotube Networks: Controlling Optical Properties Through Orientation and Interaction" **Advanced Science** (2024), 2404694 [10.1002/advs.202404694](https://doi.org/10.1002/advs.202404694)

Media

- [Artificial Neural Networks for nanotube synthesis](#)
- [Optimal activation of the catalyst for nanotube growth](#)
- [Carbon monoxide turns into large defectless graphene crystal under ambient pressure](#)
- [Carbon nanotube based filters \(in Russian\)](#)
- [Why do we need to protect ourselves from aerosols \(interview on a radio in Russian\)?](#)