

# CURRICULUM VITAE (October 8, 2018)

Nikita Rybin

*MSc student at Materials Science Track, Skolkovo Institute of Science and Technology,  
3 Nobel St., Moscow 143026, Russia*

## PERSONAL DATA:

**Date of birth:** 14. 12. 95

**Citizenship:** The Republic of Kazakhstan.

**Phone number:** +7-916-421-29-86.

**E-mail:** [Nikita.Rybin@skoltech.ru](mailto:Nikita.Rybin@skoltech.ru)

## WORK EXPERIENCE:

09.2017

**Skolkovo Institute of Science and Technology.** Materials Designing Laboratory.

MSc Student on Materials Science track. Theme of research: computationally guided discovery of materials with appropriate physical properties, including thermoelectric materials and low-thermal-conductivity compounds. The project is connected with using *ab initio* methods in pair with evolutionary algorithm implemented in USPEX package in order to find materials with high thermoelectric efficiency. Supervisor – Dr. Artem R. Oganov.

09.2018

**Los-Alamos National Laboratory. Theoretical Chemistry Division. Physics and Chemistry of Materials Group.**

Visiting Students Internship. Theme of research: computationally guided development of perovskite materials for gamma and x-ray detectors application. Supervisor – Dr. Sergei Tretiak, co-supervisor – Amanda Neukirch, PhD.

06.2016 – 06.2017

**Novosibirsk Akademgorodok Technopark, Uniscan Research Company.**

Experimental Physicist. Theme of work: development of a contactless method for the steel cable defects control. Automatization of physical experiments. Supervisor – Talgat S. Bakirov, PhD.

10.2014 – 07.2017

**Rzhanov Institute of Semiconductor Physics SB RAS, Laboratory of Nanodiagnostics and Nanolithography.**

Bachelor Student on Physics. Theme of research: surface science investigations using Reflection Electron and Atomic Forced Microscopies. The project was connected with investigation of the atomic processes on silicon during homoepitaxial growth. Director – Alexander V. Latyshev, Russian Academy of Science Academician, Professor. Co-Supervisors – Dmitry I. Rogilo, PhD. Ekaterina E. Rodyakina, PhD.

## EDUCATION

09.2017

**Skolkovo Institute of Science and Technology**, Department of Materials Science.

Student at Computational Materials Discovery Laboratory.

09.2013 – 06.2017

**Novosibirsk State University**, Department of Physics, BD in Semiconductor Physics.

Diploma title “*The Distribution of Adatom Concentration on the Atomically-Clean Si(111) Terraces*”.

09.2010 – 09.2013

**Nazarbayev Intellectual School** in Taldykorgan, Kazakhstan.

(Grade absolute maximum on the Undergraduate School National Subject Exams).

## RESEARCH INTERESTS:

I am working with the modern theory of materials science based on the quantum theory of solids and powerful computational methods. The area of my interest is the computationally guided discovery of materials, by using robust computational approach developed in USPEX algorithm in pair with modern *ab initio* methods and precise charge carriers transport properties investigations.

## RECENT RESEARCH WORK

Now I have three projects going in parallel. The one connects with the calculation transport properties in inorganic solid materials for thermoelectric and thermal barrier application. The second project I have now is connected with the investigation of Nitrogen at high pressure. The third one is connected with the investigations of perovskite materials for gamma and x-ray detectors.

## AWARDS & ACHIEVEMENTS

2016 – Winner of the Schlumberger Students Scholarship.

2015 – Diploma for winning the 3rd place in the International Scientific Students Conference “Student and Scientific-Technical Progress”, Quantum Physics, Solid-state Physics section.

2013 – Diploma for passing school graduation exams with maximum score.

2013 – Diploma for winning the 2nd place in the Region Physics Olympiad.

## PUBLICATIONS

1. D.I. Rogilo, N.E. Rubin, A.V. Latyshev. Nucleation of Two-Dimensional Si Islands Near a Monatomic Step on an Atomically Clean Si(111)-(7×7) Surface. Optoelectronics, Instrumental and Data Processing. 2016. Vol. 52. N3. PP 86-92.
2. D.I. Rogilo, N.E. Rubin, L.I. Fedina, and A.V. Latyshev. Adatom Concentration Distribution on an Extrawide Si(111) Terrace during Sublimation. Optoelectronics, Instrumental and Data Processing. 2016. Vol. 52. N5. PP 201-507.

## CONFERENCES

1. The 55<sup>rd</sup> International Students Scientific Conference “Students and the Progress in Science and Technology”. Quantum Physics Section. Novosibirsk. 2017. Diploma for the second place.
2. The 53<sup>rd</sup> International Students Scientific Conference “Students and the Progress in Science and Technology”. Quantum Physics Section. Novosibirsk. 2015. Diploma for the third place.
3. The 15<sup>th</sup> Russian Scientific Students Conference on Solid State Body Physics. Tomsk. 2016.
4. The 10<sup>th</sup> Conference and the School of Young Scientists and Experts in Topical Problems of Silicon Physics, Material Science, Technology and Diagnostics, Silicon-Based Nanometer Structures and Devices. Russia. Novosibirsk. 2016.
5. The 18<sup>th</sup> Russian Youth Conference on Physics of Semiconductors and Nanostructures, Opto- and Nanoelectronics. Russia. St. Petersburg. 2016.

## SCHOOLS & SEMINARS

2018 – 15<sup>th</sup> USPEX workshop in China, Nankai University; 16<sup>th</sup> USPEX workshop in Russia, Skoltech.

2017 – Invited Student in Physics Winter School of the Higher School of Economics, Russia, Moscow.

2013 – A Member of the Kazakhstan team for Christmas Lectures, UK, London, Royal Institution of the UK.

## SOFTWARE PACKAGES FOR QUANTUM-MECHANICAL CALCULATIONS

Ab initio quantum chemistry calculations: VASP, Quantum ESPRESSO. Post-processing tools for transport properties calculation: Phonopy, Phono3py, BoltzTraP, ShengBTE, EPW.

## COMPUTER SKILLS

Linux (Ubuntu), Origin Lab, Adobe Photoshop, Corel Draw. Programming (C, C++, Python).

## SPEAKING LANGUAGES

Russian – mother tongue, English – fluent, Chinese – began to study.

## HOBBIES

Natural sciences, History, Judo, Swimming, Guitar Music.