# Curriculum vitae

### GENERAL INFORMATION

Full Name: Andrey Rybakov

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ORCID: 0000-0002-9924-3576 Scopus Author ID: 57210452927 ResearcherID: W-6960-2019 Date of Birth: 30th October 1997 Languages: English, Russian

### **EDUCATION**

2021-now PhD. ICMol, University of Valencia, Valencia, Spain.

2019-2021 Master in Applied Mathematics and Physics (with Honors). Moscow Institute of

Physics and Technology. Supervisor: Prof. Andrew Palii. Dolgoprudny, Russia.

2015-2019 BSc in Applied Mathematics and Physics (with Honors). Moscow Institute of Physics

and Technology. Supervisor: Prof. Andrew Palii. Dolgoprudny, Russia.

#### OPEN SOURCE PROJECTS

2022-now RAD-tools. Python package for spin Hamiltonian and magnons.

### FELLOWSHIPS AND AWARDS

2021-now GRISOLIA pre-doctoral fellowship. Valencian Regional Government. Spain.

2019 Scholarship named after N.N. Semenov. Moscow Institute of Physics and Technology.

Russia

2016 Excellence scholarship. Foundation for the development of innovative education in the field

of natural sciences. Russia.

# ORAL PRESENTATIONS

6-10 March 2023 MATSUS23 and Sustainable Technology Forum València (STECH23). Modelling

the dynamics of spin waves in 2D limit. Valencia, Spain.

23-29 November 63 All-Russian Scientific Conference in Moscow Institute of Physics and Technol-

2020 ogy. Double Exchange Clusters as a New Class of Cells for Quantum Cellular Automata with

Additional Functions. Dolgoprudny, Russia.

18-24 November 62 All-Russian Scientific Conference in Moscow Institute of Physics and Technol-

ogy. Comparison of Theoretical Models of Cells for Molecular Quantum Cellular Automata

Based on Mixed Valence Molecules. Dolgoprudny, Russia.

#### POSTER PRESENTATIONS

5-8 April 2022 European Conference on Molecular Spintronics. Magnon straintronics in the 2D van

der Waals ferromagnet CrSBr. Dortmund, Germany.

20-24 June 2022 Frontiers in Quantum Materials and Devices. Magnon straintronics in the 2D van der

Waals ferromagnet CrSBr. Valencia, Spain.

# SCHOOLS

2019

18-22 July 2022 4th International Advanced School on Magnonics (MAGNETOFON). Porto.

Portugal.

16-20 May 2022 Wannier 2022 Summer School. Trieste, Italy.

#### **EXPERIENCE**

2021-now **Pre-doctoral Fellow**. ICMol, University of Valencia. Valencia, Spain.

2018-2021 Research assistant. Laboratory of Molecular Magnetic Nanomaterials, Institute of Problems

of Chemical Physics. Chernogolovka, Russia.

# **PUBLICATIONS**

• Ruiz A. M., Esteras D. L., Rybakov A., Baldoví J. J. Tailoring spin waves in 2D transition metal phosphorus trichalcogenides via atomic-layer substitution **Dalton Transactions**, 2022. 51, 44, 16816–16823.

10.1039/D2DT02482A

• Boix-Constant C., Mañas-Valero S., Ruiz A. M., Rybakov A., Konieczny K. A., Pillet S., Baldoví J. J., Coronado E. Probing the Spin Dimensionality in Single-Layer CrSBr Van Der Waals Heterostructures by Magneto-Transport Measurements Advanced Materials, 2022. 34, 41, 2204940.

10.1002/adma.202204940

• Esteras D. L., Rybakov A., Ruiz A. M., Baldoví J. J. Magnon straintronics in the 2D van der Waals ferromagnet CrSBr from first-principles Nano Letters, 2022. 22, 21, 8771–8778.

10.1021/acs.nanolett.2c02863

• Palii A., Clemente-Juan J. M., Rybakov A., Aldoshin S., Tsukerblat B. Toward multifunctional molecular cells for quantum cellular automata: exploitation of interconnected charge and spin degrees of freedom Physical Chemistry Chemical Physics, 2021. 23, 26, 14511–14528.

10.1039/D1CP00444A

• Palii A., Clemente-Juan J. M., Rybakov A., Aldoshin S., Tsukerblat B. Exploration of the double exchange in quantum cellular automata: proposal for a new class of cells Chemical Communications, 2020. 56, 73, 10682–10685.

10.1039/D0CC04135A

• Palii A., Clemente-Juan J. M., Aldoshin S., Korchagin D., Rybakov A., Zilberg S., Tsukerblat B. *Mixed-valence magnetic molecular cell for quantum cellular automata: Prospects of designing multifunctional devices through exploration of double exchange* The Journal of Physical Chemistry C, 2020. 124, 46, 25602–25614.

10.1021/acs.jpcc.0c08186

• Palii A., Rybakov A., Aldoshin S., Tsukerblat B. Semiclassical versus quantum-mechanical vibronic approach in the analysis of the functional characteristics of molecular quantum cellular automata Physical Chemistry Chemical Physics, 2019. 21, 30, 16751–16761.

10.1039/C9CP02516B

• Palii A., Zilberg S., Rybakov A., Tsukerblat B. Double-dimeric versus tetrameric cells for quantum cellular automata: A semiempirical approach to evaluation of cell-cell responses combined with quantum-chemical modeling of molecular structures The Journal of Physical Chemistry C, 2019. 123, 36, 22614–22623.

10.1021/acs.jpcc.9b05942