Curriculum vitae

GENERAL INFORMATION

Full Name: **Andrey Rybakov**
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ResearcherID: **W-6960-2019**
Date of Birth: **30th October 1997**
Languages: **English, Russian**

EDUCATION

2021-now	**PhD**. ICMol, University of Valencia. Supervisor: Prof. Eugenio Coronado. 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.

EXPERIENCE

12.2023-01.2024	**Research stay**. Department of Physics, University of Oviedo. Oviedo, Spain.
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.

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.

OPEN SOURCE PROJECTS

2024-now	**Magnopy**. Magnon dynamics and spiral ground states (magnopy.org).
2023-now	**Wulfric**. Crystal, Lattice, Atoms, K-path. (wulfric.org)
2022-now	**RAD-tools**. Plotting for condense matter (rad-tools.org).

ORAL PRESENTATIONS

16-20 September 2024	**Magnons on an Island 2024**. Relevance of the higher harmonics of the spiral cone magnetic ground states. Texel, Netherlands.
19-24 May 2024	**17th European School on Molecular Nanoscience (ESMolNa2024)**. Twisted magnetic multilayers of CrSBr. Cuenca, Spain.
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 2020	**63 All-Russian Scientific Conference in Moscow Institute of Physics and Technology**. Double Exchange Clusters as a New Class of Cells for Quantum Cellular Automata with Additional Functions. Dolgoprudny, Russia.
18-24 November 2019	**62 All-Russian Scientific Conference in Moscow Institute of Physics and Technology**. 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

18-22 July 2022	**4th International Advanced School on Magnonics (MAGNETOFON)**. Porto, Portugal.
16-20 May 2022	**Wannier 2022 Summer School**. Trieste, Italy.
2-6 October 2023	**First steps with SIESTA: from zero to hero**. Online.

PUBLICATIONS

- Ruiz A. M., Rivero-Carracedo G., Rybakov A., Dey S., Baldoví J. J. *Towards molecular controlled magnonics* **Nanoscale Advances, 2024.** 6, 13, 3320-3328.
  doi.org/10.1039/d4na00230j
- Rivero-Carracedo G., Rybakov A., Baldoví J. J. *Magnon Sensing of NO, NO2 and NH3 Gas Capture on CrSBr Monolayer* **Chemistry - A European Journal, 2024.**
  doi.org/10.1002/chem.202401092
- Rybakov A., Boix-Constant C., Alba Venero D., van der Zant H. S. J., Mañas-Valero S., Coronado E. *Probing Short-Range Correlations in the van der Waals Magnet CrSBr by Small-Angle Neutron Scattering* **Small Science, 2024.**
  doi.org/10.1002/smsc.202400244
- 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.
  doi.org/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.
  doi.org/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.
  doi.org/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.
  doi.org/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.
  doi.org/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.
  doi.org/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.

  doi.org/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.

  doi.org/10.1021/acs.jpcc.9b05942