**Section b: Curriculum vitae**

**PERSONAL INFORMATION**

Valiev, Rashid:

<https://orcid.org/0000-0002-2088-2608>, Researcher ID: E-1048-2014, Scopus Author ID: 54418187200.

Date of birth: 02.01.1983.

Nationality: Tartar.

* **EDUCATION**

2021 Habilitation in Chemistry (Physical chemistry)

Department of Chemistry/N. I. Lobachevsky State University of Nizhny Novgorod, Russia

2012 PhD in physics (Optics)

Department of Optics and Spectroscopy/Tomsk State University, Russia

Prof. Victor N. Cherepanov

2008 Diploma specialist (Physics)

Department of Quantum field theory/Tomsk State University, Russia

* **CURRENT POSITION**

2019 –2025 Researcher

Department of Chemistry /University of Helsinki/Finland

* **PREVIOUS POSITIONS**

2012 – 2014 Docent

Department of Optics and Spectroscopy/Tomsk State University, Russia

2014 – 2017 Postdoc

Department of Theoretical Chemistry and Biology/Royal Institute of Technology/ Sweden

2017 – 2019 Postdoc

Department of Chemistry / University of Helsinki/Finland

2018 – 2018 Visiting Scientist

The Faculty of Electrical Engineering and Information Technology/ Dortmund University/Germany

2017 – 2019 Postdoc

Department of Chemistry / University of Helsinki/Finland

* **FELLOWSHIPS AND AWARDS**

2017 Young scientist of year /Tomsk State University/Russia

2018 RU 2018665396, patent for model (RATES-1.0, the photophysical calculations), <https://www.elibrary.ru/item.asp?id=39306745>

2019 RU 2019661703, patent for model (RATES-2.0, the photophysical calculations),

<https://www.elibrary.ru/item.asp?id=40880414>

2017 – 2020 Head of the Russian Scientific Foundation grant, project No. 17-73-20012, “The new electroluminescence materials for the fabrication of high-efficient organic light emitting (OLEDs)/Tomsk State University/Russia

* **MAJOR COLLABORATIONS**

Prof. Hans Ågren, The upconverted nanoparticles (theory and experiments), Department of Theoretical Chemistry and Biology, Royal Institute of Technology, Sweden

Dr. Heike Fliegl, Stability, magnetism and aromaticity of molecules (theory),

Managing Director of Material Digital, Karlsruhe institute of technology, Germany

Dr. Michael Pittelkow, OLEDs design and fabrication, The Department of Chemistry, University of Copenhagen, Denmark

Prof. Matti Rissanen, air aerosol pollution and atmospheric research (experiment),

Department of Physics, Tampere University, Finland

Prof. Miguel Monge, OLEDs fabrication and nanotechnology, Departamento de Quı́mica, Universidad de la Rioja, Spain

Prof. Paras N. Prasad, The upconverted nanoparticles (experiment), Natural Science Complex, University of Buffalo, USA

Dr. Oleksiy Lyutakov, Nanotechnology (solid state experiment), department of solid state engineering, University of Chemistry and Technology, Czech Republic

Prof. Christian Wöhler, Image analysis, machine learning and space research, the Faculty of Electrical Engineering and Information Technology, Dortmund Technical University, Germany

**The list of relevant publications**

1) X. Wang, **R. R. Valiev**, T. Y. Ohulchanskyy, H. Ågren, Ch. Yang, G. Chen. Dye-sensitized lanthanide-doped upconversion nanoparticles, *Chem. Soc. Rev.* **2017**, 46, 4150–4167.

2) Siddharth Iyer, Matti P. Rissanen, **Rashid Valiev**, Shawon Barua, Jordan E. Krechmer, Joel Thornton, Mikael Ehn & Theo Kurtén. Molecular mechanism for rapid autoxidation in α-pinene ozonolysis, *Nature Communications*, **2021**, 12, 878.

3) G. Chen, W. Shao, **R. Valiev**, T. Ohulchanskyy, G. He, H. Ågren, P. Prasad, “Efficient Broadband Upconversion of Near‐Infrared Light in Dye‐Sensitized Core/Shell Nanocrystals”, *Advanced Optical Materials,* **2016***,* 4, 1760-1766.

4) Chang‐Keun Lim, Melissa Maldonado, Robert Zalesny, **Rashid Valiev**, Hans Ågren, Anderson S. L. Gomes, Jie Jiang, Ruth Pachter, Paras N. Prasad. Interlayer‐Sensitized Linear and Nonlinear. Photoluminescence of Quasi‐2D Hybrid Perovskites Using Aggregation‐Induced Enhanced Emission Active Organic Cation Layers. *Adv. Funct. Mater*. **2020**, 30, 1909375

5) Guanying Chen, Jossana Damasco, Hailong Qiu, Wei Shao, Tymish Y. Ohulchanskyy, **Rashid R. Valiev**, Xiang Wu, Gang Han, Yan Wang, Chunhui Yang, Hans Ågren and Paras N. Prasad. Energy Cascaded Upconversion in an Organic Dye-Sensitized Core/Shell Fluoride Nanocrystal. *Nano letters*, **2015**, 5, 7400-7407.

6) Haichun Liu, Kai Huang, **Rashid R. Valiev**, Qiuqiang Zhan,Yong Zhang, Hans Ågren. Photon Upconversion Kinetic Nanosystems and Their Optical Response, *Laser and Photonics Reviews*, **2018**,12, 1700144.

7) Glib V. Baryshnikov, **Rashid R. Valiev**, Artem V. Kuklin, Dage Sundholm, Hans Ågren. Cyclo[18]carbon: Insight into Electronic Structure, Aromaticity, and Surface Coupling. *J. Phys. Chem. Lett.* **2019**, 10, 6701-6705.

8) Elena Miliutina, Olga Guselnikova, Natalia S. Soldatova, Polina Bainova, Roman Elashnikov, Přemysl Fitl, Theo Kurten, Mekhman S. Yusubov, Václav Švorčík, **Rashid R. Valiev**, Mohamed M. Chehimi, Oleksiy Lyutakov, and Pavel S. Postnikov. Can Plasmon Change Reaction Path? Decomposition of Unsymmetrical Iodonium Salts as an Organic Probe. *J. Phys. Chem. Lett.* **2020**, 11, 14, 5770–5776.

9) **R. R. Valiev** et al: The blue vibronically resolved electroluminescence of azatrioxa[8]circulene, *Chem. Phys. Lett.* **2019**, 732 , 136667.

10) **R. R. Valiev** et al: Intersystem crossings drive atmospheric gas-phase dimer formation, *J. Phys. Chem. A*, **2019**, 123, 6596.

11) **R. R. Valiev** et al: First-principles calculations of anharmonic and deuteration effects on the photophysical properties of polyacenes and porphyrinoids, *PCCP*, 2020, 22, 22314.

12) **R. Valiev** et al: First-principles method for calculating the rate constants of internal-conversion and intersystem-crossing transitions. *PCCP*, **2018**, 20, 6121.

13) **R. R. Valiev** et al: Calculating rate constants for intersystem crossing and internal conversion in the Franck–Condon and Herzberg–Teller approximations, *PCCP*, **2019**, 21, 18495.

14) **R. R. Valiev** et al: Fast estimation of the internal conversion rate constant in photophysical applications, *PCCP*, **2021**, 23, 6344 – 6348.

15) **R. R. Valiev** et al: Photolysis of diatomic molecules as a source of atoms in planetary exospheres, *Astron. Astrophys*. 2020, 633, A39.

16) L. V. Begunovich, A. V. Kuklin, G. V. Baryshnikov, **R. R. Valiev**, H. Ågren: Single-layer polymeric tetraoxa[8]circulene modified by s-block metals: toward stable spin qubits and novel superconductors, Nanoscale 13, 4799, 202