

Scientific profile structure (portfolio) of potential research supervisor as participant of the International Olympiad in the Association "Global universities" on the postgraduate studies track in 2023-2024.

На английском языке:

University	Samara National Research University
Level of English proficiency	Fluent
Educational program and field of the educational program for which the applicant will be accepted	<i>1.4.1. Inorganic chemistry (chemical sciences)</i>
List of research projects of the potential supervisor (participation/leadership)	Leader of the RSF project 20-73-10250 ‘Development of methods for the analysis of interatomic interactions in crystal structures’ (2020-2025).
List of the topics offered for the prospective scientific research	<ul style="list-style-type: none"> • Study of the features of interatomic interactions in the structures of individual forms of crystals with a large number of studied polymorphs. • Synthesis of new coordination compounds, study of their structure and physicochemical properties, registration of IR and UV spectra, study of thermal decomposition. • Application of methods of crystal chemical analysis using Voronoi–Dirichlet polyhedra to any samples of chemical compounds in order to establish correlations between the composition, structure and properties of crystals.
 <p>Research supervisor: Anton V. Savchenkov, Doctor of Science (chemistry), Samara National Research University</p>	<i>Inorganic and nuclear chemistry</i>
	<p>Supervisor’s research interests</p> <p><i>Synthesis, structure elucidation and relationship among composition/structure/properties of coordination compounds. Implementation of stereoatomic model and Voronoi–Dirichlet tessellation for analysis of crystal structures, including noncovalent interactions, polymorphism, actinide contraction and more.</i></p>
	<p>Research highlights</p> <p><i>In the course of the research work, a modern method of analyzing crystal structures using Voronoi–Dirichlet polyhedra, which is traditionally developed in our scientific school, will be used. Interaction with foreign scientists is possible.</i></p>
	<p>Supervisor’s specific requirements:</p> <p><i>Chemical education required.</i></p>
	<p>Supervisor’s main publications</p> <p><i>Total amount of scientific articles published in journals, indexed in Web of Science, Scopus, RSCI, for the last 5 years: 19.</i></p> <p><i>List of 5 most recent and most important articles:</i></p> <p><i>1. Savchenkov, A. V.; Uhanov, A. S.; Grigoriev, M. S.; Fedoseev, A. M.; Pushkin, D. V.; Serezhkina, L. B.; Serezhkin, V. N. Halogen Bonding in Uranyl and Neptunyl Trichloroacetates with Alkali Metals and Improved Crystal Chemical Formulae for Coordination Compounds. Dalton Trans. 2021, 50 (12), 4210–4218.</i></p>

	<ol style="list-style-type: none"> 2. Serezhkin, V. N.; Savchenkov, A. V. <i>Advancing the Use of Voronoi–Dirichlet Polyhedra to Describe Interactions in Organic Molecular Crystal Structures by the Example of Galunisertib Polymorphs</i>. <i>CrystEngComm</i> 2021, 23 (3), 562–568. 3. Uhanov, A. S.; Sokolova, M. N.; Fedoseev, A. M.; Bessonov, A. A.; Nechaeva, O. N.; Savchenkov, A. V.; Pushkin, D. V. <i>New Complexes of Actinides with Monobromoacetate Ions: Synthesis and Structures</i>. <i>ACS Omega</i> 2021, 6 (33), 21485–21490. 4. Serezhkin, V. N.; Yu, L.; Savchenkov, A. V. <i>ROY: Using the Method of Molecular Voronoi-Dirichlet Polyhedra to Examine the Fine Features of Conformational Polymorphism</i>. <i>Cryst. Growth Des.</i> 2022, 22 (11), 6717–6725. 5. Savchenkov, A.V.; Ahmed, E.; Karothu, D.P.; Naumov, P. <i>Voronoi-Dirichlet Analysis of Elastic and Plastic Molecular Crystals</i>. <i>Cryst. Growth Des.</i> 2023, 23 (9), 6484–6490.
	<p>Results of intellectual activity</p> <ol style="list-style-type: none"> 1. Savchenkov, A. V.; Uhanov, A. S.; Grigoriev, M. S.; Fedoseev, A. M.; Pushkin, D. V.; Serezhkina, L. B.; Serezhkin, V. N. <i>Halogen Bonding in Uranyl and Neptunyl Trichloroacetates with Alkali Metals and Improved Crystal Chemical Formulae for Coordination Compounds</i>. <i>Dalton Trans.</i> 2021, 50 (12), 4210–4218. 2. Serezhkin, V. N.; Savchenkov, A. V. <i>Advancing the Use of Voronoi–Dirichlet Polyhedra to Describe Interactions in Organic Molecular Crystal Structures by the Example of Galunisertib Polymorphs</i>. <i>CrystEngComm</i> 2021, 23 (3), 562–568. 3. Uhanov, A. S.; Sokolova, M. N.; Fedoseev, A. M.; Bessonov, A. A.; Nechaeva, O. N.; Savchenkov, A. V.; Pushkin, D. V. <i>New Complexes of Actinides with Monobromoacetate Ions: Synthesis and Structures</i>. <i>ACS Omega</i> 2021, 6 (33), 21485–21490. 4. Serezhkin, V. N.; Yu, L.; Savchenkov, A. V. <i>ROY: Using the Method of Molecular Voronoi-Dirichlet Polyhedra to Examine the Fine Features of Conformational Polymorphism</i>. <i>Cryst. Growth Des.</i> 2022, 22 (11), 6717–6725. 5. Savchenkov, A.V.; Ahmed, E.; Karothu, D.P.; Naumov, P. <i>Voronoi-Dirichlet Analysis of Elastic and Plastic Molecular Crystals</i>. <i>Cryst. Growth Des.</i> 2023, 23 (9), 6484–6490.