

**Researcher profile (portfolio) form for potential research supervisors of postgraduate track participants in the Global Universities Association International Olympiad for graduate and postgraduate applicants 2023-2024.**

University	Tomsk Polytechnic University
English language proficiency	A2.1
Applicant's postgraduate program	2.6.8 Technology of rare, trace and radioactive elements
List of research projects of a potential research supervisor (participation/leadership)	1. Development of scientific and technological bases for creation and modification of implants with topology of triply periodic surfaces of minimal energy by means of additive manufacturing techniques with improved functional properties (participation), 2. Development and study of physical mechanisms of composite micro-generators based on piezopolymers and piezoelectric nanoparticles (executor), 3. Government Order grant № 218 (on tungsten topics, executor), 4. Government Order Science - Project (Applied) grant № 0.1743.GZP.2017 (on fluorine-bromate topics of alkali and alkaline earth metals, executor), 5. Development of technology for creating biocompatible materials based on hydroxyapatite for medical applications and scientific research in the field of nanosystems and materials" Department of Entrepreneurship Development and Real Sector of Economy of Tomsk region (head), 6. Development of technology for creating biocompatible materials based on hydroxyapatite" (START) of the Foundation for Assistance to Small Innovative Enterprises in Science and Technology (head).
List of possible research topics	Surface modification of titanium and its alloys
 <p>Research supervisor: Liliia A. Leonova, PhD in Technical Sciences (Tomsk Polytechnic University)</p>	Calcium phosphate-based biocoats/sorbents
	Supervisor's research interests (detailed description of research interests): Research topics at the intersection of chemistry/chemical engineering and medicine: - development of a medical material based on hydroxyapatite; - chemical treatment of titanium implants; - investigation of coatings based on titanium oxynitrides/
	Research highlights (if applicable): Specify the key highlights of the program that make it stand out from others. (Use of unique equipment, collaboration with foreign scientists and research centers, financial support for graduate students, etc.) Financial support for graduate students under the Priority 2023 program
	Supervisor's specific requirements: This section is to be filled out if there are any requirements to a graduate student (required background/courses completed/ methods learned/ specific software knowledge and skills, etc.) <ul style="list-style-type: none"> <li>• Methods of analytical control, instrumental methods, chemical methods</li> <li>• Aim to defend a dissertation</li> <li>• Academic writing (reports, articles), public speaking</li> </ul>
	Supervisor's main publications (specify a total number of publications in journals indexed by Web of Science, Scopus, RSCI

	<p>for the last 5 years, list up to 5 most significant publications with the publication details):</p> <ol style="list-style-type: none"> <li>1. E. L. BOYTSOVA, L. A. LEONOVA. INVESTIGATING THIN TI-O-N FILMS DEPOSITED VIA REACTIVE MAGNETRON SPUTTERING. BULLETIN OF THE RUSSIAN ACADEMY OF SCIENCES: PHYSICS, 2018, VOL. 82, NO. 9, PP. 1143–1147.</li> <li>2. E.L. BOYTSOVA, L.A. LEONOVA. INVESTIGATION OF NITROGEN OXIDE-GENERATING SURGICAL IMPLANT COATINGS (NO). CHEMISTRY FOR SUSTAINABLE DEVELOPMENT, 2018, NO 26. PP. 443-447.</li> <li>3. E.L. BOYTSOVA, L.A. LEONOVA. NITROGEN-DOPED TITANIUM DIOXIDE NANOFILMS FOR MEDICAL APPLICATIONS. IZVESTIYA VUZOV: CHEMISTRY AND CHEMICAL TECHNOLOGY. IVANOV STATE CHEMICAL-TECHNOLOGICAL UNIVERSITY (ISTU), 2020, VOL. 63. PP. 54-59.</li> <li>4. E.L. BOYTSOVA, L.A. LEONOVA. INVESTIGATION OF THE STRUCTURE AND PROPERTIES OF PERSPECTIVE MEDICAL MATERIALS BASED ON TI-O-N SYSTEM / BOOK OF ABSTRACTS IN 6 VOLUMES « XXI MENDELEEV CONGRESS IS HELD UNDER THE AUSPICES OF THE INTERNATIONAL UNION OF PURE AND APPLIED CHEMISTRY» SAINT PETERSBURG, 9–13 SEPTEMBER, 2020, VOL. 2B. PP. 68.</li> </ol>
	<p>Intellectual property rights (if applicable) (list key intellectual deliverables)</p> <ol style="list-style-type: none"> <li>1. Patent 2391117 Russian Federation, IPC C1. Method of obtaining hydroxyapatite [Text] / Guzeyeva T.I., Guzeyev V.V., Karlov A.V., Leonova L.A.; applicant and patent holder State Educational Institution of Professional Education Tomsk Polytechnic University. - No. 2008138834; application. 30.09.2008; publ. 10.06.2010.</li> <li>2. Patent 2396093 Russian Federation, IPC C1. Selective etchant for titanium [Text] / Guzeeva T.I., Guzeev V.V., Leonova L.A.; applicant and patent holder State Educational Institution of Professional Education Tomsk Polytechnic University. - No. 2009108586; application. 10.03.2009; publ. 10.08.2010.</li> </ol>