

**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	National Research Tomsk Polytechnic University
English language proficiency	A2.2
Applicant's postgraduate program	Automation and control
List of research projects of a potential research supervisor (participation/leadership)	<p>– №0-5/2011 ot 22.12.2010g. «Issledovanie potokov vodnoj i organicheskoj fazy po ekstrakcionnomu kaskadu affinazha koncentratov prirodnoho urana na baze centrobezhnyh ekstraktorov i razrabotka algoritma upravleniya» (leadership);</p> <p>– №0-218/2012 ot «18» maya 2012g. «Razrabotka sistemy upravleniya processom uparivaniya reekstrakta urana dlya optimizacii raboty ustanovki ekstrakcionnogo affinazha koncentratov prirodnoho urana na centrobezhnyh ekstraktorah» (leadership);</p> <p>– №0-119/14U ot 06.06.2014 g. «Razrabotka sistemy avtomatizirovannogo upravleniya laboratornym affinazhnym stendom, prednaznachennym dlya otrabotki ekstrakcionno-kristallizacionnoj tekhnologii pererabotki OYAT RU BREST-OD-300» (leadership);</p> <p>– №0-116/14 ot 14.05.2014 g. «Razrabotka koda optimizacii i diagnostiki tekhnologicheskikh processov (KOD TP)» (participation);</p> <p>Gosudarstvennye kontrakty, v tom chisle v ramkah FCP:</p> <p>– 0.396.S.2009 «Komp'yuternoe modelirovanie, avtomatizirovannoe upravlenie i optimizaciya radiohimicheskikh proizvodstv» (leadership);</p> <p>– 0.440.S.2010 «Razrabotka algoritmov kompleksnogo upravleniya tekhnologicheskimi processami vodno-ekstrakcionnoj pererabotki yadernogo topliva» (leadership);</p> <p>– 0.1093.2012B «Issledovaniya i razrabotka sposobov organizacii i programmnyh sredstv dlya postroeniya vysokoproizvoditel'nyh GRID-setej obrabotki eksperimental'nyh dannyh poluchennyh v rezul'tate provedeniya krupnomasshtabnyh eksperimentov na bol'shij issledovatel'skij ustanovkah» (leadership);</p> <p>– 0.756.S.2011 «Razrabotka modelej integral'nyh sistem off-line obrabotki, hraneniya i raspredelennogo analiza dannyh eksperimentov na budushchih nauchnyh megaustanovkah» (leadership);</p> <p>– 0.1444.2014 «Razrabotka programmno-vychislitel'nogo kompleksa dlya komp'yuternogo modelirovaniya novyh materialov na osnove RZM i ocenki ih prochnostnyh svoystv v usloviyah sverhvysokih nagruzok» (leadership);</p> <p>– ZADANIE № 8.3079.2017/PCH «Razrabotka intellektual'nogo datchika differencial'nogo davleniya s uluchshennymi metrologicheskimi i ekspluatacionnymi harakteristikami dlya serijnogo osvoeniya kompleksa novyh priborov strategicheskijh otraslej Rossijskoj Federacii» v rakah Gosudrastroennogo</p>

	<p>zadaniya «Nauka» (proektnaya chest', prikladnaya NIR) (leadership);</p> <p>– Dogovor na vypolnenie NIOKR №18.11-101/2021 ot 27.04.2022 «Razrabotka i proizvodstvo kompleksa programmyh i tekhnicheskikh sredstv dlya intellektual'nyh informacionno-upravlyayushchih sistem i priborov s peredachej dannyh dlya tekhnologicheskikh processov» (participation).</p>
<p>List of possible research topics</p>	<p>Mathematical modeling of industrial processes and physical plants;</p> <p>– Development of algorithms and components of automatic control systems;</p> <p>– Development of instrumentation and automation equipment for physical plants.</p>
<div data-bbox="240 669 580 1099" data-label="Image"> </div> <p>Research supervisor: Alexey G. Goryunov, Doctor of Science (Tomsk Polytechnic University)</p>	<p>Natural and exact sciences 1.02. Computer and Information Sciences, Computer Science - Software Engineering</p>
	<p>Supervisor's research interests (detailed description of research interests):</p>
	<p><u>Mathematical modeling and simulation physical plant</u></p> <p><u>Control systems;</u></p> <p><u>Methods for measurements parameters and variables of technological processes</u></p>
	<p>Research highlights (if applicable):</p> <p><i>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.)</i></p> <p>Solving interdisciplinary problems in the field of nuclear technology, using the unique software and equipment of the TPU School of Nuclear Technology Engineering.</p>
<p>Supervisor's specific requirements:</p> <ul style="list-style-type: none"> <li>• Nuclear physics</li> <li>• Electronics</li> <li>• Microprocessor systems</li> <li>• Mathematical modeling and simulation of physical processes</li> </ul>	
<p>Supervisor's main publications (22 papers in journals indexed by Web of Science, Scopus, RSCI for the last 5 years, list up to 5 most significant publications with the publication details):</p> <ul style="list-style-type: none"> <li>• Goryunov A.G., Stepanov B.P., Suhanov E.A. Formirovanie sposobov upravleniya pri organizacii sistem bezopasnosti // Nauchno-tekhnicheskij vestnik Povolzh'ya. 2022. № 2. S. 75-77.</li> <li>• Sumin G.V., Denisevich A.A., Goryunov A.G., Livencov S.N. Razrabotka sistemy izmereniya raskhodov radioaktivnyh zhidkostej radiohimicheskikh proizvodstv // Izvestiya vuzov. Fizika. 2021. T. 64. № 2-2 (759). S. 106-112.</li> <li>• Nadezhdin I.S., Goryunov A.G. Single-chip Solution for Electronics Unit of a Smart Pressure Sensor // Sensor Review. 2020. T. 40. № 5. P. 529-534.</li> <li>• Nadezhdin, I.S., Goryunov, A.G. Differential Pressure Transmitter with Unified Electronics Unit (2020) // IEEE</li> </ul>	

	<p>Sensors Journal, 20 (18), art. no. 9090166, pp. 10460-10468. БД: Scopus CiteScore 6.0. WoS IF: 3.301.</p> <ul style="list-style-type: none"> <li>• Nadezhdin, I.S., Gozhimov, A.I., Goryunov, A.G., Colombo, S., Manenti, F. Uranyl nitrate crystallizer performance with changing solution level // (2019) Heliyon, 5 (5), art. no. e01693. Scopus CiteScore 2.1.</li> <li>• Goryunov, A.G., Egorova, O.V., Kozin, K.A., Liventsov, S.N., Liventsova, N.V., Shmidt, O.V. Optimization and Diagnostics Code for Technological Processes: Radiochemical Production Simulator // (2018) Atomic Energy, 124 (5), pp. 321-325. Scopus CiteScore 0.7. WoS IF: 0.298.</li> <li>• Nadezhdin, I.S., Goryunov, A.G., Liventsov, S.N., Shmidt, O.V. Development of a Mathematical Model for Denitration of Actinide Nitrates under the Action of UHF Radiation // (2018) Radiochemistry, 60 (4), pp. 371-377. Scopus CiteScore 1.1. WoS IF: 0.2.</li> <li>• Pletnev, A.O., Goryunov, A.G., Liventsov, S.N., Gozhimov, A.I., Kasheev, V.A., Manenti, F. Control system of storage containers filling in the uranyl nitrate crystallization process in a linear crystallizer // (2018) Chemical Engineering Transactions, 70, pp. 1429-1434. Scopus CiteScore 1.5.</li> </ul>
	<p>Intellectual property rights (if applicable) (list key intellectual deliverables) Patent (in Russia) №2657711, 14.06. 2017 «Комплекс для моделирования химико-технологических процессов»</p>