

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 2025-2026.

University	Samara University
Level of English proficiency	(Upper-Intermediate)
Educational program and field of the educational program for which the applicant will be accepted	<i>2.5.15 - Thermal, electric rocket engines and power installations of aircraft</i>
List of research projects of the potential supervisor (participation/leadership)	<ol style="list-style-type: none"> 1. FSSS-2020-0019 "Investigation of the processes of conversion of low-potential energy of cryoproduct in various energy systems and installations". Within the framework of the state program of the Russian Federation, Fundamental research "For long-term development and ensuring the competitiveness of society and the state" (47 GP) is carried out by the university. Source of funding of the Ministry of Education and Science of the Russian Federation (2020-2024) - Head of works. 2. Contract No. ENG-00058-2020. Calculation of elements of cryogenic onboard gas fuel system . RariTEK Engineering LLC. (2020) - Head of Works. 3. Contract No. ENG-00113-2020. Investigation of the stress-strain state of the cryogenic onboard gas-fuel system of the vessel. RariTEK Engineering LLC. (2020) - Head of Works. 4. Contract No. 01-20-u-90/20. Investigation of the LNG reception, storage and regasification system. LLC "Yugorsky Machine-Building Plant". (2020) - Head of Works. 5. Contract 48/18//0402/21/18 .Investigation of thermal emissions during drilling of sheet parts made of special alloys (PJSC "Salyut"), (2018) - Head of work. 6. Contract 410/184 (43/17) "Energy survey of the reconstructed 4th span of building No. 17 (PJSC "Salyut"), (2017) - contractor. 7. Predictive research and analysis of ways to improve the efficiency of power plants through the use of high-speed distribution mechanisms of fuel supply systems. "Relay-F-IM-S". - Performer - MSU Mechanics Research Institute, 2014-2015 8. Creation of a family of import-substituting energy-saving installations based on the use of innovative technologies for desalination of seawater and distillate production from wastewater with a capacity of up to 10 cubic meters/hour. Contract under PP No. 218 dated 09.04.2010. - contractor - JSC Metalist-Samara, 2016-2018
List of the topics offered for the prospective scientific research	<ol style="list-style-type: none"> 1. Improving the cooling efficiency of turbine blades of GTE. 2. Improving the efficiency of the gas turbine engine through the use of a highly efficient heat exchanger-regenerator. 3. Development and creation of a methodology for determining the characteristics of low-temperature power plants using low-potential cryoproduct heat. 4. Development of effective methods of energy storage based on cryogenic energy converters. 5. Development of experimental and theoretical methods for modeling work processes in cryogenic storage complexes during refueling, storage and selection of cryogenic product.

	<p>6. Development of a pulsating bidirectional turbine for the utilization of acoustic energy.</p> <p>7. Development and research of working processes of a highly efficient cryogenic engine for an unmanned aerial vehicle.</p> <p>8. Development and research of working processes of onboard cryogenic pulsation coolers of the IR receiver.</p> <p>9. Creation of an internal combustion engine with internal heat recovery in a cycle (ICE-R)</p>
 <p>Research supervisor: Dmitry A. Uglanov, Doctor of Science (ITMO)</p>	<p><i>Aerospace engineering</i></p>
	<p>Supervisor's research interests</p> <p><i>Cryogenics, liquefied natural gas, heat and mass transfer, engines and power plants, energy-saving technologies, GTD cooling systems, heat exchange intensification</i></p>
	<p>Research highlights (<i>при наличии</i>)</p> <p><i>Scientific research will be carried out in the laboratory of cryogenic technology and research of the processes of conversion of low-potential energy of cryoproduct in various energy systems and installations</i></p>
	<p>Supervisor's specific requirements:</p> <p><i>Know the basics of thermodynamics, heat transfer, hydro-gas dynamics</i></p>
	<p>Supervisor's main publications</p> <p>1. Dovgyallo A.I., Uglanov D.A., Blagin E.V. etc. <i>Technique for Using the Indicative Library of Characteristic Fields in the Design of Low-Temperature Power Plants with Low-Grade Heat Utilization // Chemical and Petroleum Engineering 2022. — Vol. 57. Issue 11-12. — P. 930-939 (индексируется в Web of Science Core Collection и Scopus); https://link.springer.com/article/10.1007/s10556-022-01028-w</i></p> <p>2. An R., Niu W., Fang W. etc. <i>Active Vibration Control for Aeroengines // Lecture Notes in Electrical Engineering. — 2022. — Vol. 799 LNEE. — P. 1115-1124 (индексируется в Web of Science Core Collection и Scopus); https://link.springer.com/chapter/10.1007/978-981-16-5912-6_82</i></p> <p>3. Kedam N., Uglanov D.A., Blagin E.V. etc. <i>Heat transfer factor j and friction factor f correlations for offset strip fin and wavy fin of compact plate-fin heat-exchangers // CASE STUDIES IN THERMAL ENGINEERING 2021. — Vol. 4. 2020 (индексируется в Web of Science Core Collection и Scopus); https://www.sciencedirect.com/science/article/pii/S2214157X21007152</i></p> <p>4. Dovgyallo A.I., Uglanov D.A., Vorotyntseva K.E. etc. <i>About The Efficiency of Energy Production by Recovering the Latent Heat of Vaporization of LNG during Regasification // Chemical and Petroleum Engineering 2020. — Vol. 6. Issue 5-6. — P. 360-366 (индексируется в Web of Science Core Collection и Scopus); https://link.springer.com/article/10.1007/s10556-020-00782-z</i></p> <p>5. Dovgyallo A.I., Uglanov D.A., Vorotynceva K. E. etc. <i>Rankine Cycle Efficiency under Maximum Power Generation Condition as Applied to Low-Temperature Power Plant Using a Cryoproduct as the Working Substance // Chemical and Petroleum Engineering 2020. — Vol. 56. Issue 5-6. — P. 423-432 2019 (индексируется в Web of Science Core</i></p>

	Collection u Scopus); https://link.springer.com/article/10.1007/s10556-020-00790-z .
	<p>Results of intellectual activity (при наличии)</p> <ol style="list-style-type: none"> 1. A device for obtaining additional electricity in the process of refueling cars// Dovgyallo A.I., Sarmin D.V., Uglanov D.A., Tsapkova A.B., Shimanov A.A.// 2014-12-20 No. 148865 F17C 9/02 2. Thermoacoustic engine// Dovgyallo A.I., Nekrasova S.O., Uglanov D.A. 2016-11-20 No.166131 utility model 3. Power plant. Dovgyallo A.I., Nekrasova S.O., Uglanov D.A., Tsapkova A.B.// 2016-08-20 No.164117 utility model 4. Cryogenic gasifier pump. Dovgyallo A.I., Uglanov D.A., Tsapkova A.B., Shimanov A.A. 2017-04-11 No.170011 utility model 5. Cryogenic power plant for cooling the refrigerator car chamber. Uglanov D.A., Shimanova A.B., Shimanov A.A., Aksenova D.K., Samin D.V. 2018103277. No.185107