	NIKITIN, Andrey A. Candidate of Technical Science
Research interests	Power engineering: scientific research is carried out in the field of thermodynamic and thermophysical processes
Features of the PhD program	Applied research that finds customers among the business community, both in the Russian market and in international multinational corporations
List of the supervisor's research projects (participation/supervision)	✓ Comparative analysis of pharmaceutical refrigeration cabinets, Customer Carel RUS (project manager) ✓ Development of a mathematical model and an algorithm for calculating a split air conditioning system, Customer LG Electronics (project manager) ✓ Development of a method for calculating the cooling system, Customer of Littransservice LLC (responsible executor) ✓ Development of a line of embedded air heat exchangers, Customer ITMO University (participant) ✓ Development of an integrated adaptive system for distributed regulation of indoor microclimate, Customer ITMO University (participant) ✓ Resource-saving and environmentally safe technologies of hydrocarbon energy and low-temperature systems, Customer ITMO University (participant) ✓ Optimization of heat and mass transfer processes and design solutions in life support systems, Customer ITMO University (responsible executor)
List of potential thesis topics	✓ Improving the energy efficiency of life support systems ✓ Energy modeling of buildings and structures ✓ Mutual integration of engineering systems ✓ Optimization of building engineering systems management systems ✓ Green construction ✓ Improving the efficiency of heat pumps
Publications in the last five years	19 (Scopus / Web of Science / RSCI)
Key publications	1. Nikitin A., Deymi-Dashtebayaz M., Baranov I.V., Sami S., Nikitina V., Abadi M.K., Rumiantceva O. Energy, exergy, economic and environmental (4E) analysis using a renewable multi-generation system in a near-zero energy building with hot water and hydrogen storage systems//Journal of Energy Storage, 2023, Vol. 62, pp. 106794 2. Nikitin A.A., Farahnak M., Deymi-Dashtebayaz M., Muraveinikov S.S., Nikitina V.A., Nazeri R. Effect of ice thickness and snow cover depth on performance optimization of ground source heat pump based on the energy, exergy, economic

	and environmental analysis//Renewable Energy, 2022, Vol. 185, pp. 1301-1317 3. Mehrpooya M., Mousavi S.A., Delpisheh M., Zaitsev A.V., Nikitin A.A. 4E assessment and 3D parametric analysis of an innovative liquefied natural gas production process assisted by a diffusion–absorption refrigeration unit//Chemical Papers, 2022, Vol. 76, No. 8, pp. 5231-5252 4. Deymi-Dashtebayaz M., Baranov I.V., Nikitin A., Davoodi V., Sulin A., Norani M., Nikitina V. An investigation of a hybrid wind-solar integrated energy system with heat and power energy storage system in a near-zero energy building-A dynamic study//Energy Conversion and Management, 2022, Vol. 269, pp. 116085 5. Deymi-Dashtebayaz M., Nikitin A., Norani M., Nikitina V., Hekmatshoar M., Shein V. Comparison of two hybrid renewable energy systems for a residential building based on sustainability assessment and emergy analysis//Journal of Cleaner Production, 2022, Vol. 379, pp. 134592
Key IPs	PhD students can be awarded grants in the field of energy efficiency. Developments in the field of energy efficiency have been implemented at more than 30 enterprises of the food, pharmaceutical, oil and chemical, metallurgical industries, in the field of civil and industrial construction.
Supervisor's specific requirements	✓ Experience in publishing highly rated articles Q1/Q2 ✓ Experienced user of SimuLink, SimsCape, Ansys, EnergyPlus (at least one of the listed software packages) ✓ Ability to use devices for monitoring energy and thermodynamic parameters, experience in processing measurement results
Code of the subject area of the PhD program	1.3.14 Thermal Physics and Theory of Heat Engineering 2.1.3 Heating, Ventilation, Air Conditioning, Gas Supply and Lighting 2.4.8 Machines, Devices, and Processes of Cryogenic, Air Conditioning, and Life Support Systems