	BOGDANOV, Andrey A. Candidate of Science
Research interests	Theoretical nanophotonics and metamaterials: ✓ Bound states in the continuum ✓ Surface Waves ✓ Plasmonics ✓ Photonics ✓ Metamaterials and Metasurfaces ✓ Microcavities ✓ Solid State Physics and Physics of Semiconductors
Features of the PhD program	Studying on this scientific program gives you the opportunity to immerse yourself in the research world of nanophotonics, nano-optics and physics of metasurfaces and metamaterials. On this program, you can engage in theoretical and numerical and experimental physics. For this, all the necessary conditions and resources are provided, from computers to modern experimental equipment located in two experimental laboratories at the university.
List of the supervisor's research projects (participation/supervision)	✓ Bound states in the continuum in photonic structures ✓ Resonant metasurfaces for biosensorics ✓ Singular points in photonic nanostructures
List of potential thesis topics	✓ Bound states in the continuum in photonic structures ✓ Resonant metasurfaces for biosensorics ✓ Singular points in photonic nanostructures
Publications in the last five years	150 (Scopus / Web of Science)
Key publications	1. Masharin M.A., Samusev A.K., Bogdanov A.A., Iorsh I.V., Demir H.V., Makarov S.V. Room-Temperature Exceptional-Point-Driven Polariton Lasing from Perovskite Metasurface//Advanced Functional Materials, 2023, Vol. 33, No. 22, pp. 2215007 2. Poleva M., Frizyuk K., Baryshnikova K.V., Evlyukhin A.B., Petrov M.I., Bogdanov A. Multipolar theory of bianisotropic response of meta-atoms//Physical Review B, 2023, Vol. 107, No. 1, pp. L041304 3. Krasikova M., Krasikov S., Melnikov A., Baloshin Y., Marburg S., Powell D., Bogdanov A. Metahouse: noise-insulating chamber based on periodic structures//Advanced Materials Technologies, 2023, Vol. 8, No. 1, pp. 2200711 4. Dyshlyuk A.V., Proskurin A., Bogdanov A.A., Vitrik O.B. Scattering Amplitude of Surface Plasmon Polariton Excited by a Finite Grating//Nanomaterials, 2023, Vol. 13, No. 14, pp. 2091

	5. Krasikov S., Tranter A., Bogdanov A., Kivshar Y. Intelligent metaphotonics empowered by machine learning//Opto-Electronic Advances, 2022, Vol. 5, No. 3, pp. 210147
Supervisor's specific requirements	✓ Knowledge of the basics of electrodynamics, optics, quantum mechanics and mathematical physics ✓ Experience with mathematical packages (e.g. MatLab or Wolfram Mathematica) ✓ Experience with packages for numerical modeling of physical processes (e.g. COMSOL Multiphysics)
Code of the subject area of the PhD program	1.3.3 Theoretical Physics 1.3.4 Radio Physics 1.3.6 Optics 1.3.8 Condensed State Physics 2.2.4 Instruments and Methods of Measurement (By Measurement Type) 2.2.7 Photonics