PERMIN DMITRY ALEKSEEVICH

University	Lobachevsky State University of Nizhni Novgorod
Level of English proficiency	Advanced
Educational program and field of the educational program for which the applicant will be accepted	1.4. Chemical Sciences 1.4.1 Inorganic chemistry
List of research projects of the potential supervisor (participation/leadership)	1. Grant RSF 22-73-10084 Laser nanoceramics based on MgO-FE2O3 composite materials doped with Tm, Ho and Er ions (2022-2025) - Head of the project 2. RSF Grant 19-73-10127 “Composite IR transparent materials based on magnesium oxides and rare earth elements" (2019-2021) – Head of the project 3. RSF grant 18-13-00355 “Synthesis of new magneto-optical media of near and medium IR wavelength ranges based on rare earth element oxides" (2018-2020) – Participant 4. Research within the framework of the "Priority 2030" program-463-99_2021-2023 New laser nanoceramic materials based on fluorapatite and rare earth elements – Head of the project 5. RFBR grant 16-33-60153 mol_a_dk "New laser ceramics based on disordered oxides of rare earth metals – scandium, yttrium and lutetium" (2016-2018) - Head of the project 6. RFBR grant 14-03-31940 mol a "Self-propagating high-temperature synthesis of nanodispersed scandium oxide powders for optical ceramics" (2014-2015) - Head of the project
List of the topics offered for the prospective scientific research	IR-transparent ceramics based on magnesium oxide and oxides of rare earth elements Production of laser ceramics based on yttrium oxide by hot pressing Production of optical ceramics based on fluorapatite Production of hydroxyapatite nanopowders
 Research supervisor: Dmitry A. Permin Candidate of Science (Chemistry)	**Materials Sciences** **Supervisor’s research interests** Approaches to the synthesis of highly dispersed powders of rare earth element oxides that form the basis of ceramic laser materials in the near-infrared range, as well as the development of approaches to obtaining new IR materials based on composite and anisotropic ceramics. **Research highlight** The work is carried out using a complex of technological and research equipment for the successful completion of tasks for the synthesis of nanopowders (muffle furnaces, mills of various types, spray drying, etc.), compaction (uniaxial and isostatic presses), sintering (furnaces of various types – atmospheric, vacuum, hot pressing, hot isostatic pressing), processing (grinding and polishing machines), interference coating installations, general laboratory equipment. The research is carried out in a close cooperation with other departments of UNN State University (Faculty of Radiophysics, NIFTI UNN State University) and academic institutions, primarily ICHPS RAS.

(Russia) (Lobachevsky State University of Nizhny Novgorod)	**Supervisor's specific requirements** - knowledge of the basics of inorganic chemistry and methods of inorganic synthesis - good command of English and Russian
	Supervisor's main publications Over the past 5 years, 30 publications have been published in journals indexed by Web of Science, Scopus, RSCI, including 1. Permin D. A. et al. Effect of SHS powder processing on structure formation and optical transmittance of MgO–Y2O3 composite ceramic // Ceramics International. 2024. Vol. 50. No. 16. pp. 28947-28954. 2. Permin D. A. et al. Dy2O3–MgO composite ceramics: Fabrication and properties // Ceramics International. 2024. Vol. 50. No. 7. pp. 10940-10946. 3. Nazmutdinov M. et al. Fabrication and study of the strontium fluoroarsenate Sr5(AsO4)3F (SFAs) transparent ceramics // Open Ceramics. 2024. Vol. 17. p. 100543. 4. Eremeev K. et al. Spectroscopy of thulium ions in solid-solution sesquioxide laser ceramics: Inhomogeneous spectral line broadening, crystal-field engineering and C3i sites // Optical Materials. 2024. Vol. 148. p. 114791. 5. Permin D. A. et al. Erbium-Doped Lu2O3-MgO and Sc2O3-MgO IR-Transparent Composite Ceramics // Nanomaterials. 2023. Vol. 13. No. 10. p. 1620.
	Results of intellectual activity -