OKSANA N. SHERSTNEVA

University	National Research Lobachevsky State University of Nizhny Novgorod
Level of English proficiency	B2
Educational program and field of the educational program for which the applicant will be accepted	1.5. Biological Sciences 1.5.2. Biophysics
List of research projects of the potential supervisor (participation/leadership)	1. Spectral characteristics as predictors of drought tolerance in wheat (RSF, No. 23-26-00212, 2023-2024). Research team leader. 2. Bread of Russia (the Ministry of Science and Higher Education of the Russian Federation, agreement No. 075-15-2021-1066, 2021-2023). 3. Project of the Ministry of Science and Higher Education of the Russian Federation "Creation and development of a world-class scientific centre "Photonics Centre" (agreement No. 075-15-2020-927, 2020-2025). 4. Electrical signaling as a potential basis for the development of new methods for maintaining plant productivity during the development of soil drought (RSF, No. 21-74-10088, 2021-2024). 5. Phenotyping based on active chlorophyll fluorescence for the breeding process improvement (RFBR, No. 17-29-08026, 2018-2020). 6. Analysis of a specificity of functional response parameters in higher plants under influence of different local stimuli» (State task, No. 6.3199.2017/ПЧ, 2017-2019).
List of the topics offered for the prospective scientific research	1. Search for phenotypic predictors of yield and tolerance of agricultural plants to the action of biotic and abiotic factors 2. Development of approaches to early detection of stress in plants in laboratory and field conditions 3. Study of optical properties with physiological and structural features of plant tissues and organs
 Research supervisor: Oksana N. Sherstneva	**Biology and biotechnology** **Supervisor's research interests** • Development of approaches to non-invasive plant phenotyping to accelerate the breeding process • Early detection of stress in plants caused by abiotic and biotic factors • Remote methods of plant research. Imaging systems. Image processing. **Research highlights** The postgraduate student's work will be carried out (depending on the topic chosen) using the following methods: • PAM fluorometry, including PAM imaging, • hyperspectral and multispectral imaging, • infrared imaging,

Candidate of Biology Sciences (Russia) (Lobachevsky State University of Nizhny Novgorod)	• laser scanning confocal microscopy, • spectrofluorometry, • assessment of biochemical parameters of plants, • analysis and processing of fluorescent, thermal, and hyper- and multispectral images.
	Supervisor's specific requirements • Basic knowledge of biophysics and physiology of higher plants • Knowledge of basic methods of statistical data analysis; skills in working with statistical packages • Good command of English
	Supervisor's main publications ORCID: 0000-0001-8497-7676 WoS (h-index 12) 20 publications Scopus (h-index 12) 20 publications 1. Sherstneva O., Khlopkov A., Gromova E., Yudina L., Vetrova Y., Pecherina A., Kuznetsova D., Krutova E., Sukhov V., Vodeneev V. Analysis of chlorophyll fluorescence parameters as predictors of biomass accumulation and tolerance to heat and drought stress of wheat (*Triticum aestivum*) plants. Functional Plant Biology. 2021, 49(2), 155-169. DOI: 10.1071/FP21209 2. Grishina A., Sherstneva O., Grinberg M., Zdobnova T., Ageyeva M., Khlopkov A., Sukhov V., Brilkina A., Vodeneev V. Pre-Symptomatic Detection of Viral Infection in Tobacco Leaves Using PAM Fluorometry. Plants (Basel). 2021, 10(12), 2782. DOI: 10.3390/plants10122782 3. Khlopkov A., Sherstneva O., Ladeynova M., Grinberg M., Yudina L., Sukhov V., Vodeneev V. Participation of calcium ions in induction of respiratory response caused by variation potential in pea seedlings // Plant Signaling and Behavior. 2021, 1869415. DOI: 10.1080/15592324.2020.1869415 4. Yudina L., Sherstneva O., Sukhova E., Grinberg M., Mysyagin S., Vodeneev V., Sukhov V. Inactivation of H^+-ATPase participates in the influence of variation potential on photosynthesis and respiration in peas // Plants (Basel). 2020, 11(9), 1-21. DOI: 10.3390/plants9111585 5. Yudina L., Sukhova E., Sherstneva O., Grinberg M., Ladeynova M., Vodeneev V., Sukhov V. Exogenous abscisic acid can influence photosynthetic processes in peas through a decrease in activity of H^+-ATP-ase in the plasma membrane // Biology (Basel). 2020, 9(10), 1-24. DOI: 10.3390/biology9100324
	Results of intellectual activity 1. Sherstneva O.N., Khlopkov A.D., Gromova E.N., Iudina L.M., Kuznetsova D.V., Sukhov V.S., Vodeneev V.A. METHOD FOR PREDICTING WHEAT PRODUCTIVITY BASED ON CHLOROPHYLL FLUORESCENCE INDICES. Pat. RU 2792444 C1, Date of publication: 22.03.2023 Bull. № 9.