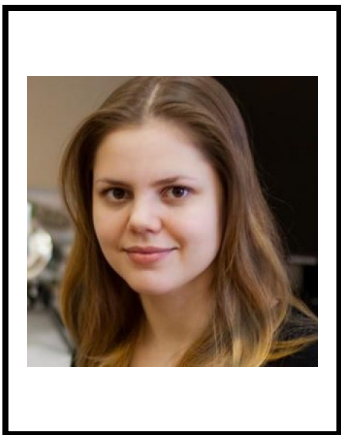


OKSANA N. SHERSTNEVA

University	National Research Lobachevsky State University of Nizhny Novgorod
Level of English proficiency	Upper-intermediate
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)	<ol style="list-style-type: none"> 1. Spectral characteristics as predictors of drought tolerance in wheat (RSF, No. 23-26-00212, 2023-2024). Research team leader. 2. 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). 3. Bread of Russia (the Ministry of Science and Higher Education of the Russian Federation, agreement No. 075-15-2021-1066, 2021-2023). 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).
List of the topics offered for the prospective scientific research	<ol style="list-style-type: none"> 1. Development of approaches to predicting crop yield and stress tolerance of agricultural plants based on optical imaging to accelerate the breeding process 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
 <p>Research supervisor: Oksana N. Sherstneva</p> <p>Candidate of Biology Sciences (Russia) (Lobachevsky State University of Nizhny Novgorod)</p>	Biophysics
	Supervisor's research interests <ul style="list-style-type: none"> • 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 <p>The postgraduate student's work will be carried out (depending on the topic chosen) using the following methods:</p> <ul style="list-style-type: none"> • PAM fluorometry, including PAM imaging, • hyperspectral and multispectral imaging, • infrared imaging, • laser scanning confocal microscopy, • spectrofluorometry,

	<ul style="list-style-type: none"> • assessment of biochemical parameters of plants, • analysis and processing of fluorescent, thermal, and hyper- and multispectral images. <p>Supervisor's specific requirements</p> <ul style="list-style-type: none"> • 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 <p>Supervisor's main publications</p> <p>ORCID: 0000-0001-8497-7676 WoS (h-index 13) 27 publications Scopus (h-index 13) 26 publications</p> <ol style="list-style-type: none"> 1. Abdullaev F., Churikova D., Pirogova P., Lysov M., Vodeneev V., <u>Sherstneva O.</u> Search of Reflectance Indices for Estimating Photosynthetic Activity of Wheat Plants Under Drought Stress. <i>Plants</i>. 2025, 14, 91. DOI: 10.3390/plants14010091 2. Abdullaev F., Pirogova P., Vodeneev V., <u>Sherstneva O.</u> Chlorophyll fluorescence in wheat breeding for heat and drought tolerance. <i>Plants</i>. 2024, 13, 2778. DOI: 10.3390/plants13192778 3. <u>Sherstneva O.</u>, Abdullaev F., Kior D., Yudina L., Gromova E., Vodeneev V. Prediction of biomass accumulation and tolerance of wheat seedlings to drought and elevated temperatures using hyperspectral imaging. <i>Frontiers in Plant Science</i>. 2024, 15, 1344826. DOI: 10.3389/fpls.2024.1344826 4. Grishina A., <u>Sherstneva O.</u>, Mysyagin S., Brilkina A., Vodeneev V. Detecting plant infections: prospects for chlorophyll fluorescence imaging. <i>Agronomy</i>. 2024, 14, 2600. DOI: 10.3390/agronomy14112600 5. <u>Sherstneva O.</u>, 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 (<i>Triticum aestivum</i>) plants. <i>Functional Plant Biology</i>. 2021, 49(2), 155-169. DOI: 10.1071/FP21209 <p>10 papers in WoS and Scopus during 2020-2025.</p>
	<p>Results of intellectual activity</p> <ol style="list-style-type: none"> 1. Grishina A.I., <u>Sherstneva O.N.</u>, Ageeva M.N., Zdobnova T.A., Grinberg M.A., Sukhov V.S., Brilkina A.A., Vodeneev V.A. Method of presymptomatic detection of viral infections in plants using PAM fluorometry. Pat. RU 2836375 C1, Date of publication: 14.03.2025 Bull. № 8. 2. <u>Sherstneva O.N.</u>, 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.

