

	<p>BYCHKOVA, Elena S. Doctor of Technical Sciences</p>
<p>Scientific interests</p>	<ul style="list-style-type: none"> <li>✓ Development and assessment of the quality of food products of functional, specialized, and therapeutic and prophylactic directions</li> <li>✓ Development of biologically active additives from plant raw materials with high antioxidant activity</li> <li>✓ Study of the process of hydrolysis of high-protein plant materials</li> <li>✓ Research into the microencapsulation process for preserving biologically active substances of plant materials</li> </ul>
<p>List of research projects of a potential supervisor (participation/leadership)</p>	<ul style="list-style-type: none"> <li>✓ Study of the processes occurring during mechanical activation and enzymatic hydrolysis of polymers of plant raw materials and aimed at obtaining low-molecular components of functional foods, grant No. 17-73-10223, Russian Science Foundation (participant)</li> <li>✓ Intelligent biodegradable packaging material for food products, grant No. 23-26-00056, Russian Science Foundation (participant)</li> </ul>
<p>List of possible topics for research</p>	<ul style="list-style-type: none"> <li>✓ Preclinical studies of the influence of biologically active components of functional foods on the vital signs of mice;</li> <li>✓ Assessment of the nutritional value of food products for functional, specialized, and therapeutic and prophylactic purposes</li> <li>✓ Mathematical modeling of processes</li> <li>✓ Development of food products enriched with hydrolysates of high-protein plant materials</li> <li>✓ Development of food products with high antioxidant activity</li> <li>✓ Methodology for the development of food products for functional, specialized, and therapeutic and prophylactic purposes</li> </ul>
<p>Number of publications in journals indexed in the Web of Science, Scopus, RSCI databases over the past 5 years</p>	<p>24</p>
<p>Main publications</p>	<ol style="list-style-type: none"> <li>1. Current achievements in the mechanically pretreated conversion of plant biomass / A. L. Bychkov, E. Podgorbunskikh, E. S. Bychkova, O. Lomovsky // <i>Biotechnology and Bioengineering</i>. – 2019. – Vol. 116, iss. 5. – P. 1231–1244. – DOI: 10.1002/bit.2692510</li> <li>2. Mechanically activated hydrolysis of plant-derived proteins in food industry / A. L. Bychkov, E. S. Bychkova [et al.] // <i>Foods</i></li> </ol>

	<p>and Raw materials. – 2019. – Vol. 7, № 2. – P. 255–263. – DOI: 10.21603/2308-4057-2019-2-255-263</p> <p>3. Mechanically activated enzymatic hydrolysis of pea seeds and its effects on bakery products / E. Bychkova, K. Dome, D. Gosman, N. Beisel, A. Chernonosov // Applied Food Biotechnology. – 2021. – Vol. 8, iss. 3. – P. 213–223. – DOI: 10.22037/afb.v8i3.32756</p> <p>4. The current state and future trends of space nutrition from a perspective of astronauts' physiology / A. L. Bychkov, P. A. Reshetnikova, E. S. Bychkova, E. Podgorbunskikh, V. Koptev // International Journal of Gastronomy and Food Science. – 2021. – Vol. 24. – Art. 100324 (11 p.). – DOI: 10.1016/j.ijgfs.2021.100324</p> <p>5. Bychkov A., Koptev V., Zaharova V., Reshetnikova P., Trofimova E., Bychkova E., Podgorbunskikh E., Lomovsky O. Experimental Testing of the Action of Vitamin D and Silicon Chelates in Bone Fracture Healing and Bone Turnover in Mice and Rats // Nutrients - 2022, Vol. 14, No. 10, pp. 1992</p>
The most significant results of intellectual activity	<ul style="list-style-type: none"> <li>✓ Patent No. 2447703 Russian Federation, IPC A23L 1/39. Fruit, berry and vegetable sauce / I. V. Matseychik, E. S. Dobrydina, O. I. Lomovsky; applicant and patent holder Federal State Budgetary Educational Institution of Higher Education "Novosibirsk State Technical University". – No. 2010132663/13, application. 08/03/2010, publ. 04/20/2012</li> <li>✓ Patent No. 2651604 Russian Federation, IPC A23L 3/00. Canned vegetable salad / E. S. Bychkova, I. O. Lomovsky, O. I. Lomovsky; applicant and patent holder Federal State Budgetary Educational Institution of Higher Education "Novosibirsk State Technical University". – No. 2016127328; application 07/06/2016; publ. 04/23/2018</li> <li>✓ Patent No. 2668315 Russian Federation, IPC A23L 19/00. Canned vegetable salad / E. S. Bychkova, I. O. Lomovsky, O. I. Lomovsky; applicant and patent holder Federal State Budgetary Educational Institution of Higher Education "Novosibirsk State Technical University". – No. 2016127348; application 07/06/2016, publ. 09.28.2018</li> <li>✓ Patent No. 2667783 Russian Federation, IPC A23L 19/00. Canned vegetable salad / E. S. Bychkova, I. O. Lomovsky, O. I. Lomovsky; applicant and patent holder Federal State Budgetary Educational Institution of Higher Education "Novosibirsk State Technical University". – No. 2016127353, application. 07/06/2016, published 09/24/2018</li> </ul>
Requirements for a graduate student	<ul style="list-style-type: none"> <li>✓ Knowledge of analytical methods in the field of assessing the nutritional and biological value of food</li> <li>✓ Availability of skills in the field of preclinical research to substantiate the effectiveness of a food product</li> <li>✓ Knowledge of methods of mathematical modeling and regression analysis</li> <li>✓ Ability to work in a team</li> </ul>

Name of scientific specialties for enrollment as a graduate student	4.3.3 Food systems
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