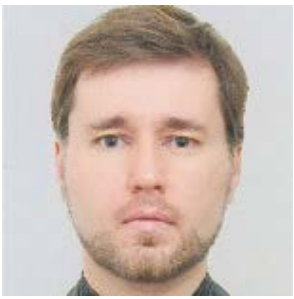


**Portfolio of the academic advisor of the participants of the International Olympiad  
of the Global Universities Association  
on the track of postgraduate studies in 2022-2023**

	<p><b>Pavel R. Goncharov,</b> Ph.D. (Graduate University for Advanced Studies, Japan) Head of Advanced Plasma Research Laboratory Peter the Great St. Petersburg Polytechnic University</p>
<p><b>University</b></p>	<p>Peter the Great St. Petersburg Polytechnic University</p>
<p><b>English proficiency</b></p>	<p>Advanced (C1)</p>
<p><b>Field of study on which the postgraduate student will be enrolled</b></p>	<p><u>PHYSICAL SCIENCE</u> 1.3.9. Plasma physics</p>
<p><b>List of research projects of a potential supervisor (participation / supervision )</b></p>	<ul style="list-style-type: none"> <li>• “Development of numerical and experimental methods for studying the plasma of a spherical tokamak and their application on the Globus-M2 facility” (supervision)</li> <li>• IAEA CRP “Development of fast particle physics basis for compact steady-state fusion neutron sources” (supervision)</li> <li>• “Influence of the anisotropy of the velocity distribution of fast ions on their retention in a new-generation spherical tokamak” (participation)</li> </ul>
<p><b>List of possible research topics</b></p>	<ul style="list-style-type: none"> <li>• Distribution of nuclear fusion products in plasma</li> <li>• Plasma heating and current generation in plasma by suprathreshold particles</li> <li>• Diagnostics of fast particles</li> <li>• Distribution of epithermal recoil ions in collisions with fusion products</li> </ul>
<p><b>Field of study</b></p>	<p>Physics of fast particles in plasma, including fusion products</p>
<p><b>Supervisor’s research interests</b></p>	<p>Energetic and angular distributions of nuclear fusion products. Suprathreshold knock-on particles due to collisions with fusion products. Plasma heating and non-inductive current drive by neutral beam injection. Fast particle diagnostics</p>
<p><b>Research highlights</b></p>	<ul style="list-style-type: none"> <li>• Unique scientific facility Globus-M2.</li> <li>• “Polytechnic” supercomputer center.</li> <li>• Scientific collaboration with Japan (SOKENDAI, NIFS, QST), participation in the IAEA coordinated research activities.</li> </ul>

<b>Supervisor's requirements</b>	<b>specific</b> <ul style="list-style-type: none"> <li>• Advanced Calculus and Mathematical Physics</li> <li>• Computational methods</li> <li>• Fortran and/or C++, high performance computing</li> </ul>
<b>Supervisor's main publications</b>	<ul style="list-style-type: none"> <li>• P.R. Goncharov 2020 Plasma Phys. Control. Fusion 62 072001 <a href="https://doi.org/10.1088/1361-6587/ab8ca1">https://doi.org/10.1088/1361-6587/ab8ca1</a></li> <li>• B.V. Kuteev, ..., P.R. Goncharov et al. 2019 Nuclear Fusion, vol. 59, 076014 <a href="https://doi.org/10.1088/1741-4326/ab14a8">https://doi.org/10.1088/1741-4326/ab14a8</a></li> <li>• P.R. Goncharov 2018 Atomic Data and Nuclear Data Tables, vol. 120, pp. 121-151 <a href="https://doi.org/10.1016/j.adt.2017.05.006">https://doi.org/10.1016/j.adt.2017.05.006</a></li> <li>• A.Yu. Dnestrovskiy, P.R. Goncharov 2017 Fusion Eng. Des., vol. 123, pp. 440-443 <a href="https://doi.org/10.1016/j.fusengdes.2017.03.023">https://doi.org/10.1016/j.fusengdes.2017.03.023</a></li> <li>• P.R. Goncharov 2015 Nucl. Fusion, vol. 55, 063012 <a href="https://doi.org/10.1088/0029-5515/55/6/063012">https://doi.org/10.1088/0029-5515/55/6/063012</a></li> </ul>
<b>Results of intellectual activity</b>	<ul style="list-style-type: none"> <li>• P.R. Goncharov, certificate No. 2015663239 dated December 14, 2015 on the state registration of the computer program "Program for calculating the function of a source of fast particles in plasma upon injection of a neutral beam" <a href="http://www1.fips.ru/Archive/EVM/2016/2016.01.20/DOC/RUNW/000/002/015/663/239/document.pdf">http://www1.fips.ru/Archive/EVM/2016/2016.01.20/DOC/RUNW/000/002/015/663/239/document.pdf</a></li> <li>• P.R. Goncharov, certificate No. 2015614375 dated 04/16/2015 on state registration of the computer program "nSpectr program for calculating the energy and angular distributions of nuclear fusion products" <a href="http://www1.fips.ru/Archive/EVM/2015/2015.05.20/DOC/RUNW/000/002/015/614/375/document.pdf">http://www1.fips.ru/Archive/EVM/2015/2015.05.20/DOC/RUNW/000/002/015/614/375/document.pdf</a></li> <li>• B.V. Kuteyev, V.Yu. Sergeev, P.R. Goncharov, F. Wagner, patent No. 2546333 dated 03.03.2015 for the invention "Method of protection against erosion of the first wall of a nuclear fusion reactor with magnetic confinement" <a href="http://www1.fips.ru/Archive/PAT/2015FULL/2015.04.10/DOC/RUNWC1/000/000/002/546/333/DOCUMENT.PDF">http://www1.fips.ru/Archive/PAT/2015FULL/2015.04.10/DOC/RUNWC1/000/000/002/546/333/DOCUMENT.PDF</a></li> </ul>