

## TFK programme, funded projects 2023, Call for Ukraine

<p><b>Project title:</b> Platform for model based solutions to systemic complexity challenges: bridging leading research schools of Finland and Ukraine by Double Doctor Degree</p>	
<p><b>Coordinator</b></p> <p>Lappeenranta-Lahden teknillinen yliopisto LUT</p> <p>Leonid Chechurin, leonid.chechurin@lut.fi</p>	<p>Mathematics and physics have been playing the role of the foundation for research and education in the field of natural science for ages. At the same time they are very demanding in terms of efforts required to reach certain professional level and the time that is needed to enjoy the returns of their application. Ironically, being the main instruments to understand the complexity of the modern world, to explain it, to predict it and to provide the model based solutions to it, the Fundamental science is the most vulnerable in the time of crisis and suffers first when complexity hits. The same way with art and culture, classical mathematics and physics requires support, especially when it comes to the support of international cooperation as the main tool of idea cross-pollination and synergy.</p> <p>The proposal adds to the excellence in understanding, optimisation and development of complex systems of various nature that is developed as the result of cooperation of the best schools of two countries in the framework of double doctor degree (DDD).</p>
<p><b>Partners</b></p> <p>National University of Kyiv-Mohyla Academy</p> <p>Institute for Condensed Matter Physics, National Academy of Sciences of Ukraine</p> <p>B. Verkin Institute for Low Temperature Physics and Engineering</p>	<p>The objective of the project is to increase the quality of the highest qualification (doctoral) education by strengthening the international partnership of LUT university with international advanced schools and creating a new platform of cooperation in research and education in the fundamental fields of mathematics and physics. The project adds to the strength and reputation of LUT University in the demanding domains of physics and model based decision making by cooperation with one of the best Ukrainian schools in the field, raising the attractiveness of Finnish higher education institutions as partners and education providers. The double doctor degree scheme is proposed with one of the best in the field of mathematics university - National University of Kyiv-Mohyla Academy and two excellent physical research institutions - Institute for Condensed Matter Physics, National Academy of Sciences of Ukraine, Lviv and Verkin Institute for Low Temperature Physics and Engineering of the National Academy of Sciences of Ukraine, to create platform for sustainable science, based on mathematical modelling, and targeted at solving practical challenges in society and industry. The project in great share supports mobility of early stage researchers (ESR). The rest is supervisors' short time visits, minor organisational and technical costs.</p> <p>The countable results are the formal or/and technical agreement on DDD between the partners, at least 4 joint supervision PhD degrees, at least 8 high level scientific publications and 1 pilot joint 4 ECTS digital course of doctoral school level. The project will provide the methodological support for many schools and industries in both countries by serving as the platform for physical studies and mathematical modelling of complex systems.</p>

