

# **“Spectral optimization: from mathematics to physics and advanced technologies/SOMPATY” project of HORIZON 2020 in Uzbekistan**

In 2019, for the first time in Uzbekistan, a grant from the HORIZON 2020 Foundation was won for the implementation of a project “Spectral optimization: from mathematics to physics and advanced technologies/SOMPATY” with a duration of 48 months. However, due to the pandemic, the project was delayed and officially launched in December 2021.

The main aim of the project is to develop mathematical models for the transport of nonlinear waves, solitons and quantum quasiparticles in low-dimensional structures that underlie modern optoelectronic networks, nanoelectronic, nanomechanical devices, as well as to apply these models for the functional optimization of such devices.

More than 10 scientific groups from 7 countries of Europe and Central Asia participate in this project. The project brings together more than 100 scientists working in the field of physics and applied mathematics. It is noteworthy that the team from Uzbekistan is the only team that includes specialists in both physics and applied mathematics

From Uzbekistan, a scientific group of prof. D.U. Matrasulov from Turin Polytechnic University in Tashkent is involved in this project. Currently, it is also the only HORIZON project, which is being implemented in Uzbekistan.

The participants of the seminar hold a weekly scientific online seminar, where every time a participant of one of the

teams present a report. To date, scientific staff from Uzbekistan have made presentations up to 4 times.