

Направление подготовки 03.04.02 Физика

Профиль – Quantum Physics for Advanced Materials Engineering

Язык обучения – английский.

This Master's program is devoted to the study of macroscopic quantum phenomena discovered in nano-structured materials and quantum devices created within the last 20-30 years in the search for components for quantum electronics. At the same time the program addresses the basic physical principles of correlated electron systems and devices of quantum electronics, as well as some important manufacturing techniques and measurements of physical and chemical characteristics of quantum-sized structures and metamaterials.

Перечень изучаемых дисциплин

- 1 курс – Modern Quantum Physics of Solids, Electron Theory of Metals, Foreign Language (English/Russian), Project Management, Term Research Project #1, Spectroscopic Methods for Materials Characterization, Technology and Materials of Quantum Electronics, Physics of Low Dimensional Systems, Electronic Properties of Quantum Confined Semiconductor Heterostructures, Introduction to Path Integral Methods in Condensed Matter Physics, Foreign Language (English/Russian), Management of Quality, Term Research Project #2.
- 2 курс – Quantum Electronic Properties of Nanosystems, Physics of Liquid-crystal Membranes, Experimental Methods in Low-dimensional Systems, Superconducting Circuits and Qubits, Phase Diagrams of Multicomponent Systems, Modern Methods of Atomistic Simulations, Foreign Language (English/Russian), Intellectual Properties Rights Protection, Term Research Project #3, Master's Thesis.