

# Carbon Photonics

National Research Nuclear University MEPhI (Moscow Engineering Physics Institute)

Degree or qualification is awarded: **Master Degree**

Language of study: **Russian**

Mode of study: **full-time**

Duration: **2 years**

Availability of free education: **yes**

Price: **196 820 rubles per semester**

Programme curator: **Zavestovskaya I.N.**

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**Objectives of the program:** Formation of the students knowledge of the physical laws of interaction of optical radiation with carbon and carbon like materials, including various types of nanostructures and photonic crystals, as well as knowledge of methods of synthesis and study of these materials and skills to use them in the given conditions.

**Graduate Departments:** Department of laser micro and nanotechnology (№ 87).

**Area of professional activity:** Laser micro- and nano technologies, interaction of radiation with carbon and carbon like materials, optics, spectroscopy, and colloid chemistry, photonics.

**Objects of professional activity:** spectrometric studies, optical and electron microscopy, computer simulation, synthesis of nanostructures. Investigation of the interaction of optical radiation with carbon and carbon like nano- and microstructures, photonic crystals. Developing methods and instruments for in-depth study and practical application of these materials.

**Features of the curriculum:** The educational process is based on a combination of deep fundamental physical and mathematical and engineering preparation. Curriculum Master along with a mandatory component of the base includes a unique author's specific courses that meet the advanced level of science: the application of optical spectroscopy for the study of nanostructures, CVD synthesis of thin-film structures, laser micro- and nanotechnology and others. Educational, scientific and graduation qualifying work carried out on the modern, including the unique technological equipment. To teaching and management master's work attracted leading scientists base organization - the Center of Natural Sciences of A. M. Prokhorov General Physics Institute of Russian Academy of Sciences. The students have an excellent opportunity to participate in numerous international conferences, research projects, internships at leading foreign research centers, as well as realize itself in terms of the implementation of their results in the creation of new elements, devices and equipment via a network of small innovative enterprises related to basic organization and headed its senior staff.

Part of the curriculum is also implemented in English.

**The list of enterprises for practice and employment of graduates:** A. M. Prokhorov General Physics Institute, P. A. Lebedev Physics Institute and other institutes of RAS, leading research universities and medical centers.

**Specializations within this programme**