

# Advanced diagnostic systems

National Research Nuclear University MEPhI (Moscow Engineering Physics Institute)

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

Language of study: **Russian**

Mode of study: **full-time**

Duration: **4 years**

Availability of free education: **yes**

Price: **167 700 rubles per semester**

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## OBJECTIVES:

The main focus of the department is in the training (education and research) of highly qualified specialists. The department's strength lays in the field of advanced and complex information and measurement software and hardware development for nuclear medicine, telemedicine and realises research and healthcare institutions.

Traditionally a strong fundamental knowledge provided at the department make a solid ground for the students working on the artificial intelligence systems

Intellectual biotechnical systems are intended to become an indispensable tool in the medical practice. These systems provide invaluable assistance to doctors.

## THE MAIN SCIENTIFIC DIRECTIONS

- Development of methods and instruments of digital image processing for medical diagnostics
- Software and Hardware development of an intelligent decision support system (IDSS) for medical applications
- Development of methods and protocols with extensive use of artificial intelligence (AI) techniques for medical diagnosis and therapy.
- Design and implementation of networks to enable remote medical consultations rural areas
- Development of training medical systems based on expert technologies
- Software development for information-gathering complexes

## Professional Activities

- Computer systems of clinical diagnosis for medical applications such as: histology, cytology, hematology, bacteriology, immunology, radiology, tomography, ultrasound and radioisotope diagnosis, endoscopy, electrocardiography)
- Development and implementation of artificial intelligence systems (pattern recognition, knowledge base, expert systems) in medicine, telemedicine and nuclear medicine

## INTERSHIP AND EMPLOYMENT

- «N. N. Blokhin National Medical Research Centre of oncology» of the Health Ministry of Russia
- Clinical Hospitals of Federal medical and biological agency in Russia
- General Electric Healthcare (Russian Branch)
- Philips
- Nikolay Nilovich Burdenko Neurosurgery Institute
- Bach Institute of biochemistry RAS
- Federal institute of industrial property etc

### **Specializations within this programme**