



## STRENGTHS OF THE INTERNATIONAL MASTER'S PROGRAM

- Science, technology and devices based on magnetic nanostructures
- Nanostructured carbon materials and multiphase polymer nanocomposites
- Embedded systems and software engineering
- Nanoscale science and fundamental concepts in nanotechnology
- Micro- and nanofabrication and structural characterization
- Magnetic nanosystems, nanoparticles, multilayers for spintronics
- Semiconductor device physics and technology, carbon nanomaterials
- Micro- and nanosensor technology



## CONTACT INFORMATION



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## PROFESSIONAL NAVIGATION AND ADMISSION DEPARTMENT



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MISIS  
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Building  
a Better  
Future

## NANOTECHNOLOGY AND MATERIALS FOR MICRO- AND NANOSYSTEMS



2024



The program is devoted to the study of micro-and nanoscale phenomena materials, and devices. The program includes compulsory foundational courses along with elective courses focusing on specific materials and devices.



**Professor Larisa Panina**  
PhD in Physics and Mathematics

Joined NUST MISIS in 2013, initiated growing international activity on giant magnetoimpedance, magnetic sensors and tuneable magnetic wire media. Member of advisory committees for major international conferences in her area of research. Previous appointments: Plymouth University, United Kingdom, Nagoya University, Japan.



**Professor Sergey Marenkin**  
DSc in Chemical Sciences

Joined the NUST MISIS in 1995. Research interests include materials of electronics and spintronics, magnetic nano-granular structures, growth crystals and semiconductor films. Has published more than 250 peer-reviewed journal papers, 2 specialised books, and given 8 invited lectures at international conferences. Previous appointments: Institute of Physics, Warsaw (Poland), University of Lappeenranta (Finland).



**Assoc. professor Vladimir Kozlov**  
PhD & DSc in Technical Sciences

Research interests include metal-polymer and semiconductor-polymer nanocomposites; carbon nanomaterials; metal-carbon and semiconductor-carbon nanocomposites; heterogeneous-reaction kinetics; and nanomaterial synthesis. Additional employment: Leading Scientist, A. V. Topchiev Institute Petrochemical Synthesis, Russian Academy of Science (RAS).

## PRIMARY THEMATIC AREAS INCLUDED IN THE PROGRAM ARE:

- NANOSCALE SCIENCE AND FUNDAMENTAL CONCEPTS IN NANOTECHNOLOGY MODELING AND SIMULATION
- NANOFABRICATION AND STRUCTURAL CHARACTERIZATION
- MAGNETIC NANOSYSTEMS AND NANOPARTICLES
- MATERIALS AND DEVICES FOR SPINTRONICS
- SEMICONDUCTOR DEVICE PHYSICS AND TECHNOLOGY
- TECHNOLOGY OF CARBON NANOMATERIALS
- EMBEDDED SYSTEMS AND SOFTWARE ENGINEERING
- CORROSION AND PROTECTION OF THE METALLIC MATERIALS
- MICRO-AND NANOSENSOR TECHNOLOGY

New materials and devices included in this program are based on the original research works of the present academic team.

## SKILLS AND CAREER OPPORTUNITIES

The ultimate goal of the program is to prepare students for working in emerging high tech industries or research laboratories that exploit nano- and microscaled materials and systems of various functionalities. The students will also understand the potential for technology commercialization and its social impact.

## NUST MISIS IS ONE OF THE LEADING AND MOST DYNAMIC UNIVERSITIES AND R&D CENTERS IN RUSSIA

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