



#### RECTOR'S INTRODUCTION

#### Dear colleagues and partners,

NUST MISIS that in 2018 celebrated the centenary from the establishment of the Moscow Mining Academy, to which it succeeds, is a dynamically developing world-class research and education center. While based on the traditions of the Russian higher education, the University generates its own research and education agenda, creates an original international environment, attracts well-trained entrants and hires leading scientists and talentedlecturers.

By implementing the integrated development strategy, NUST MISIS has achieved impressive results in all areas of its activity, namely R&D, educational and extracurricularones. Several large-scale research projects have been launched at the University, and a significant quantitative and qualitative increase of the number of scientific papers authored by NUST MISIS researchers published in top-rated academic journals has been recorded. In October 2018, NUST MISIS opened its Center of the National Technological Initiative Quantum Communications designed to evolve quantum cryptography, develop the theory of quantum communications and train world-class specialists in this area.

In cooperation with its business partners, as well as Russian and international leading universities, NUST MISIS has developed and launched new joint educational programs. Thanks to the current occupational navigation program aimed at attracting talented secondary school students, those graduating with honors and winning academic Olympics, NUST MISIS has rolled out the most successful admission campaign making it possible to become the 4thbest technical university in Russia in terms of the quality of admission.

We provide students and postgraduates with conformable conditions and opportunities to acquire high-quality education, get involved into R&D activities and uncover their personal and professional potential. The establishment of a creative eco-environment with the University allows maximizing the capabilities of each student. Out-of-class activities of ourstudents in various fields have been highly praised at the federal level.

The University's successful development has been objectively reflected in the strengthening of its positions in the world's leading university rankings. In 2018, NUST MISIS was included in the TOP-500 best universities according to QS World University Rankings. Our University now holds the leading positions in the QS, ARWU and THE rankings by subject in ten areas, including TOP-50 in Engineering – Mineral & Mining (QS ranking) and TOP-100 in Metallurgical Engineering (ARWU ranking), while in Materials Science NUST MISUS is included in 201+ group of the best universities (QS ranking).

The University's team faces ambitious goals and challenges. I am sure we will meet them with dignity. NUST MISIS has everything it needs to become one of the best technical universities not only in Russia but globally as well. This is due to the well-chosen development strategy, a highly professional team, talented students, an advanced research and teaching infrastructure and support of the business community.

NUST MISIS Rector A.A. Chernikova





# ABOUT THE UNIVERSITY

#### **ABOUT THE UNIVERSITY**

Colleges		
Branches		

International School of Business and Technology

Representative office

World-class engineering centers

Research laboratories

Shared use center

Small innovative enterprises

**Employees** 

**Doctors and candidates of sciences** 

**Students** 

International students

9

6

1

1

3

> 30

1

**30** 

> 4,000

>1,000

22,000

25% from 75 countries







#### **HISTORY**

#### 2018

Centenary of the Moscow Mining Academy NUST MISIS – in TOP-100 of QS Engineering – Mineral and Mining and ARWU Metallurgical Engineering, TOP-200 in U.S.News Materials Science

#### 2017

NUST MISIS – in TOP-50 of QS Engineering – Mineral and Mining and TOP-100 of ARWU Metallurgical Engineering

#### 2016

NUST MISIS showed the highest growth rates among Russian universities in the QS world and regional rankings

#### 2015

NUST MISIS was named among the best universities globally according to the THE rankings and ran 19<sup>th</sup> in the THE World's Best Small Universities Ranking

#### 2008

National University of Science and Technology MISIS – NUST MISIS

#### 2013

NUST MISIS was announced the winner of Project 5-100

#### 2014

Merger of NUST MISIS and MSMU (Moscow State Mining University). The University was among the best world universities, according to the QS rankings

#### 1962

Moscow Institute of Steel and Alloys – MISIS

#### 1930

Moscow Institute of Steel – MIS

#### 1918

Moscow Mining Academy

## NUST MISIS IN WORLD INSTITUTIONAL RANKINGS

## NUST MISIS IN RANKINGS BY SUBJECT

**52** 

QS Emerging Europe & Central Asia

**54** 

OS BRICS

99

THE Emerging Economies
University Rankings

294

**THE Best universities in Europe** 

476

**QS World University Rankings** 

601+

**THE World University Rankings** 

30

QS «Инжиниринг
– Mineral and Mining

76+

ARWU - Metallurgical Engineering

191

U.S. News Best Global Universities
Materials Science

201+

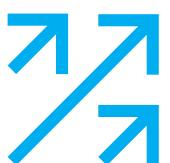
**QS Materials Science** 

251+

QS Mechanical, Aeronautical & Manufacturing Engineering

351+

**QS Physics** 





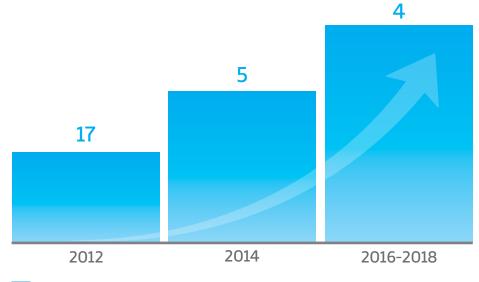
"I am aware of your outstanding achievements, first and foremost, in the context of Project 5-100, I know what you managed to do and your rankings. It means that the University is not at a stop, but moves on. And this is your absolute achievement, and the achievement of the Russian Federation and of the Russian education"

atiana Golikova

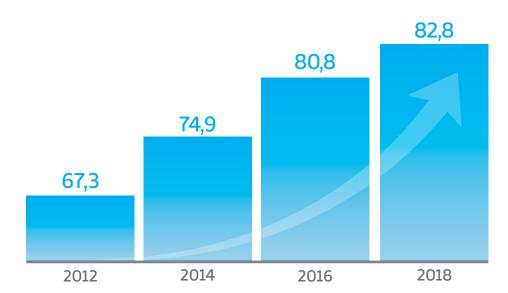
Deputy Chairman of the Government of the Russian Federation

## NUST MISIS IN NATIONAL RANKINGS

#### **ADMISSION QUALITY IMPROVEMENT**

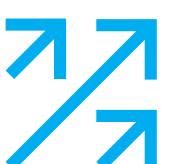


#### AVERAGE USE GRADE GROWTH



#### Technical universities, over 300 admission quotas

## 4<sup>th</sup> place



Among the best universities, according Forbes

### 11<sup>th</sup> place

Among the best universities, according Interfax







# EDUCATIONAL ACTIVITIES



#### **EDUCATIONAL SYSTEM**

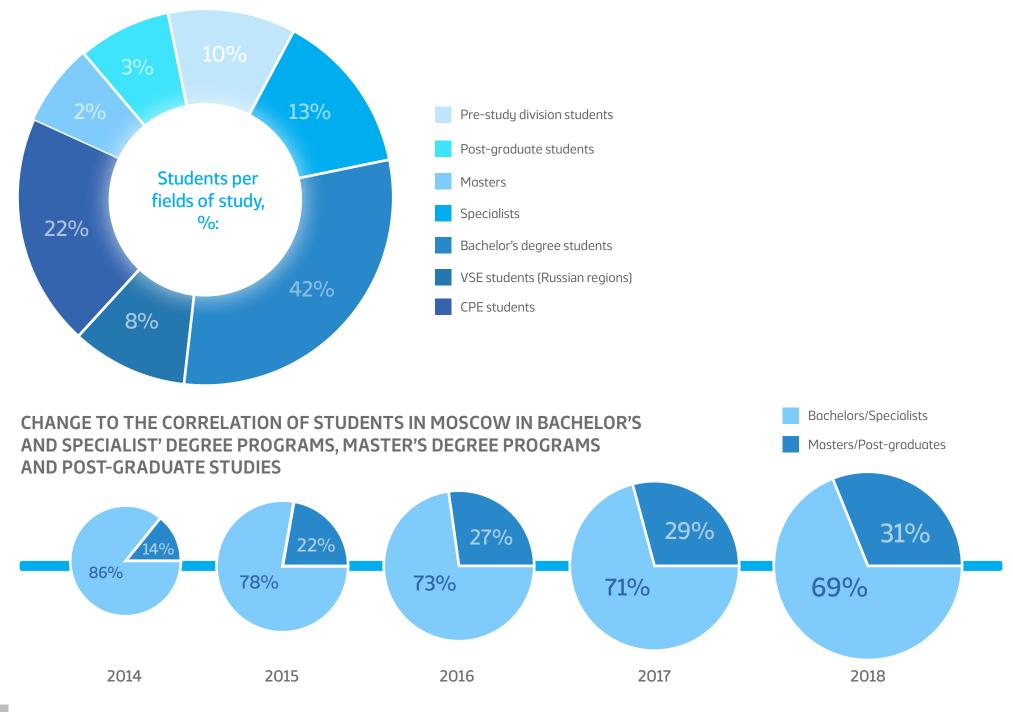
The key focus is on integrating new educational technologies and techniques in the academic process. NUST MISIS educational standards based on professional standards and employer's requests secure the delivery of top-quality academic programs and a high demand for its graduates in the employment market. New master's degree programs and post-graduate programs are developed every year, including courses in English.

Education levels	5	Higher education programs	261
Fields of study	144	Educational programs in English	8



## STUDENTS STRUCTURE, DYNAMICS

More than 25,000 people study at NUST MISiS in all fields of study: vocational secondary education (VSE), bachelor's, specialist's, master's degree programs, post-graduate and continuing professional education (CPE) programs.





#### **ADMISSION CAMPAIGN**

The admission campaign of 2018 has become the most successful one for NUST MISIS over the recent years. Since 2012, the average USE grade in our University has increased from 67.3 to 82.8.

**40%** 

graduates have diplomas cum laude

**CNMNT**College of New Materials

and Nanotechnologies

**63%** 

graduates have the sum of USE grades starting from 240

**50** 

applicants per seat in certain fields of study



CITACS
College of IT & Automated
Control Systems





МИСИС Э

Национальный исследовательский технологический университет

## ALLOCATION OF ENROLLED STUDENTS

## COMMUNITIES In 2018, NUST MISIS enrolled the total of 4,360 new students from 75 countries, 85 Russian regions and 29 communities students

## BEST PRACTICES OF THE ADMISSION CAMPAIGN

162,000

high school students from all over Russia

30

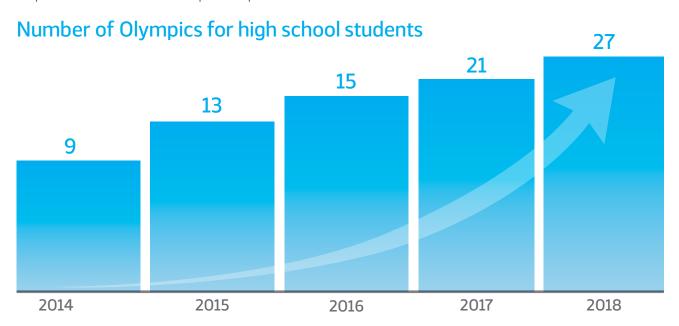
projects as part of the occupational navigation program

#### Best MISIS – Creating the Future scholarship

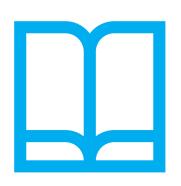
In 2018, NUST MISIS had the minimum special monthly scholarship of 10,000 rubles. It is given to entrants who gained 240 and more USE grades per three disciplines, as well as winners of the academician A.A. Bochvar competition entering the master's degree program.

#### **NUST MISIS Robocenter**

Established in 2017, the Robocenter became famous in 2018 thanks to victories of its students. The first deliverables are that two teams of high school students GOR and Valera led by NUST MISIS Robocenter tutors won the first and second places in ROBOTON-MIR competition of competences. Robocenter's Formica team came third in the "My Step to Robotics. New Format" open competitions of Moscow.







## OCCUPATIONAL NAVIGATION

#### MOSCOW AND MOSCOW REGION

**WELCOME DAY** 

**AWAY WELCOME DAYS** 

**EXHIBITIONS** 

**FESTIVAL OF SCIENCE** 

PRE-STUDY COURSES

**ACADEMIC OLYMPICS, COMPETITIONS** 

ENGINEERING CLASS IN A MOSCOW SCHOOL

**UNIVERSITY SATURDAYS** 

TWO DAYS IN NUST MISIS

**UNIVERSITY OF DREAM** 

**EXSURSIONS AND MASTER CLASSES** 

**ENGINEERING SCHOOL** 

**NUST MISIS ROBOCENTER** 

DIGITAL PRODUCTION IN FABLAB

INTER-UNIVERSITY ACADEMIC NAVIGATION CENTER FOR MINING AND GEOLOGICAL MAJORS "MATHEMATICAL VERTICAL"

PRE-PROFESSION EXAM

**SCIENCE DAYS** 

**CULTURAL EVENTS** 

UNIVERSITY SATURDAYS

UNIVERSITY WEDNESDAYS FOR

**ONLINE LECTURES** 

**OPEN LESSONS** 

**TEACHERS** 

**EDUCATIONAL CENTRES** 

#### **RUSSIAN REGIONS**

**ENTRANCE NAVIGATOR** 

PARTICIPATION IN EDUCATIONAL EXHIBITIONS

**AWAY WELCOME DAYS** 

**ACADEMIC OLYMPICS, COMPETITIONS** 

**ENGINEERING SCHOOL** 

TWO DAYS IN NUST MISIS

**EXSURSIONS AND MASTER CLASSES** 

PROJECT SHIFTS IN EDUCATION CENTERS

ONLINE LECTURES

SCIENCE DAYS

**OPEN LESSONS** 

#### NEIGBORING AND OTHER COUNTRIES

ACADEMIC OLYMPICS IN COOPERATION WITH ROSSOTRUDNICHESTVO AND THE ASSOCIATION OF GLOBAL UNIVERSITIES

**EXHIBITIONS** 

**ACADEMIC OLYMPICS, COMPETITIONS** 

PRE-STUDY DIVISION

**EXSURSIONS AND MASTER CLASSES** 

**ENGINEERING SCHOOL** 

#### IDENTIFICATION AND SUPPORT OF TALENTED YOUTH

**ACADEMIC OLYMPICS** 

PROJECT SHIFTS IN EDUCATION CENTERS

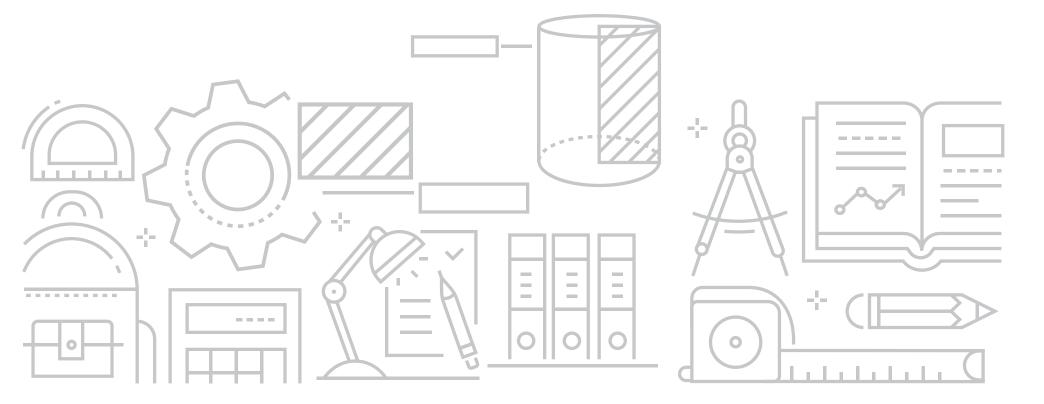
REGIONAL CENTERS OF SUPPORTING GIFTED CHILDREN

**CENTERS OF YOUTH INNOVATIVE ARTWORK** 

QUANTORIA

PARTICIPATION IN THE PROEKTORIYA FORUM

R&D IN THE ENGINEERING SCHOOL JOINTLY WITH DEPARTMENTS AND LABORATORIES OF NUST MISIS



## COLLABORATION WITH CHILD EDUCATIONAL CENTRES

NUST MISIS has developed and is implementing the occupational navigation program, pursuant to which we extensively cooperate with the leading national educational centers

#### Sirius. New Materials and Technologies Program

**1,450 STUDENTS | 6 SHIFTS | 28 WINNERS** of the all-Russian design competition in the "New Materials" field of studies as part of the "Big Challenges" shift tutored by NUST MISIS jointly with such largest mining companies, as UMC, NLMK, Mechel, Chelpipe and Severstal.

Graduates of the "Big Challenge" shift continued working on their projects in the NUST MISIS Engineering School and were entitled to represent Russia at the finals of the "Scientists of the Future" international competition in spring 2019 held in the United States.

#### Artek. New Materials and Technologies Program

**533 STUDENTS | 12 SHIFTS | 25 WINNERS AND PRIZE WINNERS** of competitions held by the University as part of the NUST MISIS specialized unit. International Child Center Artek has traditionally held the "MISIS Lights Stars" academic Olympics, and the University has for the first time become the arranger of the "Star" multi-discipline engineering competition based in Artek.

Orlenok. "New Materials and Technologies. School of Engineering Solutions, or How to Make a Discovery?" Program

**625 STUDENTS | 5 SHIFTS | 65 "EAGLES"** took part in the finals of the "MISIS Lights Stars" academic Olympics.





Ocean. "New Materials and Technologies. School of Engineering Solutions, or How to Make a Discovery?" Program

**95 STUDENTS | 3 SHIFTS | 63 PERSONS** of the specialized "Start to Innovations" shift took part in the finals of the "MISIS Lights Stars" academic Olympics.





Smena. "New Materials and Technologies. School of Engineering Solutions, or How to Make a Discovery?" Program

**80 PERSONS | 4 SPECIALIZED UNITS** were created of the winners and prize winners of competitions held by the University. All high school students have completed training and participated in the "MISIS Lights Stars" academic Olympics.



## **EDUCATIONAL ENVIRONMENT**

#### Digital educational environment

NUST MISIS students may acquire high-quality education from the best professors online via NPOEd, EDX and theUniversity's Canvas system.

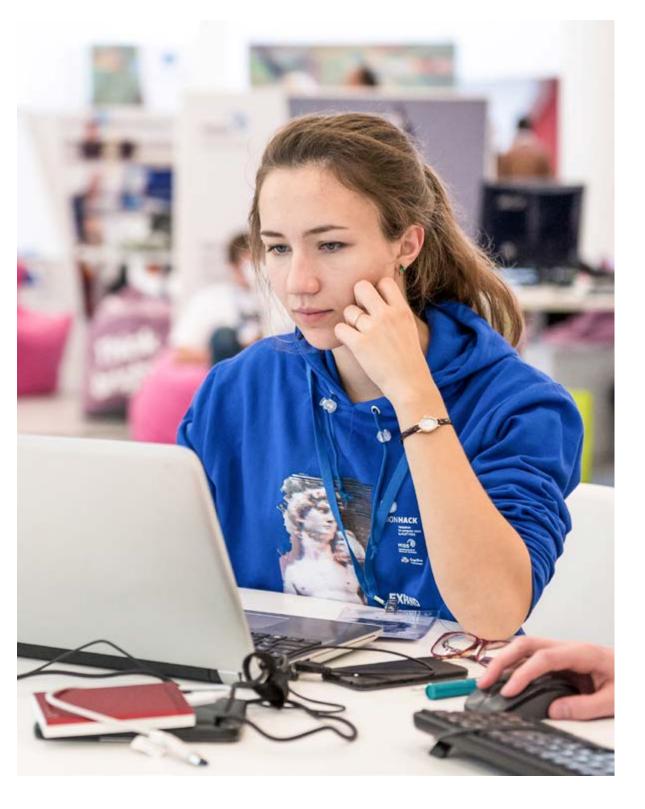
#### **English for engineers**

Touchstone@MISIS is a joint project of NUST MISIS and the University of Cambridge that has no equivalents in the Russian education sector. Having completed 4 years of studying English, students take an exam and acquire one of the most highly-demanded international certificates in IELTS.

#### Center of the Russian language

The center is focused on training entrants and students from CIS and foreign countries, as well as Russian-speaking entrants and students. The center is involved in academic, methodological, R&D, as well as extensive educational and country-specific activities. Those attending the center are regular winners and prize winners of all-Russian and international student's academic Olympics in Russian, elocution and Russian as a foreign language.





## ACCREDITATION OF EDUCATIONAL PROGRAMS

STATE ACCREDITATION AS OF THE END OF 2018

Totally accredited fields of study	144	Professional and public accreditation – master's degree programs	7
Bachelor's degree programs	71	Professional and public accreditation  – VSE	2
Master's degree programs	24	EUR-ACE® international quality mark – master's degree programs	6
Specialist's degree programs	6	——————————————————————————————————————	
Post-graduate studies	22		
INFRASTRUCTURE	21		

## NEW EDUCATIONAL STANDARDS

NUST MISIS higher education standards taking account of the current professional standard, international requirements to the quality of engineering education and the global CDIO initiative are the fundamentals for developing educational programs that are competitive both in the Russian and international labor markets.

#### 9 EDUCATIONAL PROGRAMS

have been professionally and publicly accredited: 7 master's degree programs and 2 VSE programs

#### 6 MASTER'S DEGREE PROGRAMS

have the European EUR-ACE® quality mark

#### 2 MASTER'S DEGREE PROGRAMS IN ENGLISH

have an international accreditation with ASIIN: Multicomponent nanostructured coatings. Nanofilms μ Quantum physics for advanced materials engineering



## **ENGLISH-LANGUAGE SUMMER SCHOOLS**

#### In 2018, NUST MISIS has continued holding summer schools in English.

Summer school students get familiar with University's activities, are members of an international multi-discipline team, attend lectures and master classes held by the leading Russian and global scientists. In addition, events to study the Russian language and culture are carried out for students.

International summer school "Materials and Technologies": 20 attendants from China

International summer school of the Russian language: 33 attendants from Kazakhstan, Uzbekistan and Tajikistan



## NEW MASTER'S DEGREE PROGRAMS

#### **MASTER'S DEGREE PROGRAMS WITH PARTNERS**

In 2018, NUST MISIS elaborated 18 new master's degree programs focused on HR support of top-priority areas of Russia's social and economic development.

Industrial Internet of Things and Predictive Analytics jointly with VIST Group and JSC R&D Center ELVIS

This master's degree program is comprehensive and covers various areas: integrated systems, SW engineering, data analysis. According to the Global Digital IQ® Survey for 2017 (source: PwC), the Internet of Things has the utmost impact on corporate business models and whole sectors and is on the list of technologies with significant investment highlights.

Big Data Eco-System for Digital Transformation jointly with IBS

This master's degree programs is aimed at training specialists in creating and using new generation information technologies intended for the cost-effective retrieval of useful information from big data due to the high speed of collecting, processing and analyzing such data (Big Data technologies).

Applied Computer Science in Power Efficiency and Performance jointly with Kaspersky Lab and Intellectual Technologies

This master's degree program is designed to train specialists in information technologies and processes in energy supply systems, as well as in energy performance HW and SW.

Energy Management jointly with OOO Tavrida-Elektrik and OO PP SHELA

This master's degree program is focused on training specialists in managing mineral resources enterprises, experts for engineering centers of creating and operating electromechanical and electric engineering systems for mining and industrial enterprises, as well as specialists of energy audit and management systems.





#### **ONLINE COURSES**

#### **CORPORATE EDUCATION**

NUST MISIS is a contractor under the "Contemporary Digital Educational Environment in the Russian Federation" top-priority state-funded project as part of the "Promotion of Online Education Technologies and Top-Priority Project Support" initiative.

Activities performed by NUST MISIS in the context of the above project are aimed at increasing the level of trust to online education technologies and demand for them among all categories of Russian citizens.



24

NUST MISIS online courses available at openedu.ru

48,600

participants of online courses at openedu.ru

170,000

articipants of NUST MISIS online courses at national and international platforms

In May 2018, the annual "Production Leaders" advanced training program was launched for medium managers of the Metalloinvest group of companies manufacturing enterprises in order to train managements to work under the conditions of transformational changes made by the company.

The program was created in close collaboration with the HR department, economics, planning and investment division, department for developing business systems and other divisions of the Metalloinvest group of companies.





"I would like to emphasize a special role of NUST MISIS in preparing specialists for UMC (United Metallurgical Company) enterprises. The superb quality of education and depth of knowledge of our employees, unprecedented academic programs proposed by the University, including those developed specifically for us, are among the key factors of UMC success"

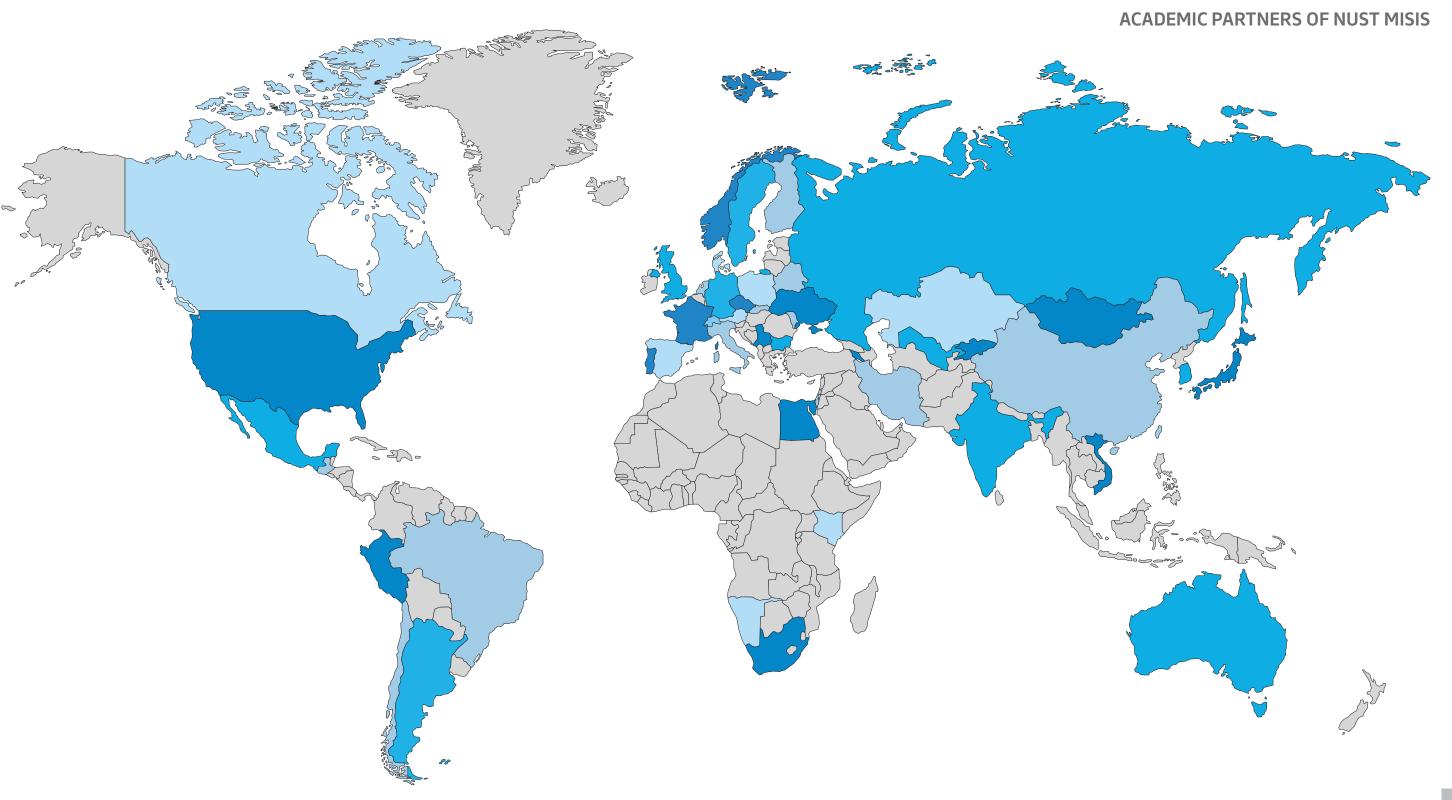
Anatoly Sedykh Chairman of UMC Board of Directors

## FOREIGN ACADEMIC PARTNERS OF NUST MISIS

In 2018, NUST MISiS and the oldest German company Auerhammer Metallwerk GmbH (operating since 1526) entered into the cooperation agreement in respect of academic studies and internships for students, post-graduates and post-doctoral students of NUST MISIS at the company's industrial enterprises

#### 200 partnering universities from all over the world

Spain Serbia **Australia** Italy Slovakia Austria Kazakhstan USA **Argentina Tajikistan** Canada Armenia Uzbekistan Belarus Kenya Bulgaria Kyrgyzstan Ukraine PRC **Finland Brazil** Liechtenstein **United Kingdom** France Montenegro Vietnam Mexico Guatemala Moldova Czech Republic Mongolia Germany Chile Namibia **Switzerland** Greece Netherlands Sweden Denmark **Ecuador Egypt** Norway Peru **South Africa** Israel India **Poland** South Korea Portugal Iran Japan



#### #EDCRUNCH CONFERENCE

NUST MISIS is a ideologist and arranger of Europe's largest conference devoted to new educational technologies #EdCrunch.

Year by year, the conference becomes an ever far-reaching event that gathers major Russian and international experts, representatives of educational institutions and the business community to discuss new trends and technologies in the educational sector.

>5,000

physical participants

300

Russian and foreign speakers from 13 countries

<u>50</u>

educational startups at the EdCrunchExpo exhibition

**527** 

press publications

**135** 

participants of the EdCrunch Award Product competition



#### INTERNATIONAL STUDENTS

3,600

**75** 

**65** 

20

**350** 

Number of foreign students

Number of countries of international students' origin

Number of students seconded to foreign educational institutions

% NUST MISiS academicians who participated in academic mobility programs

Scientific events abroad, including speeches at scientific conferences and symposia

#### International Friendship Club

NUST MISIS has created the International Friendship Club composed of students from 75 countries combined into 29 communities. The club helps foreign students to adapt, find new friends, improve their Russian language skills and get prepared for exams.







# RESEARCH ACTIVITIES

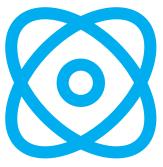


# OMIMET Fedor Senatov, a research scientist of the Center of Composite Materials, NUST MISIS, candidate of physics and mathematics

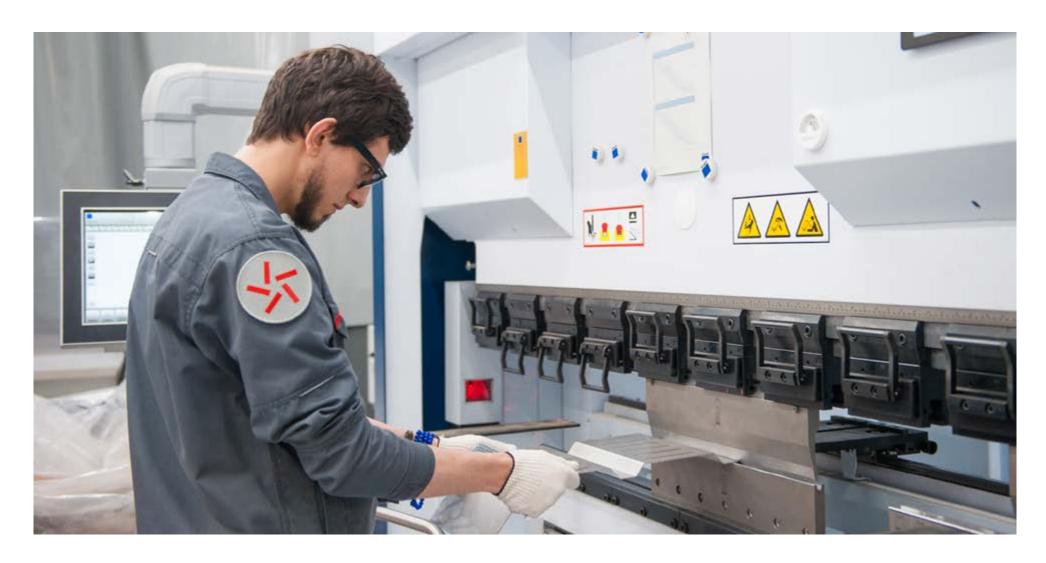
#### RESEARCH ACTIVITIES

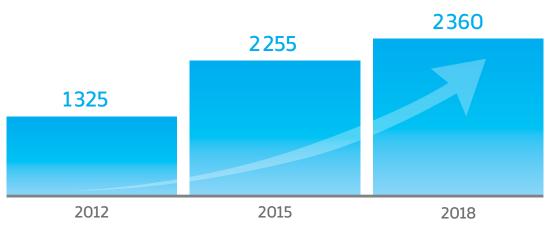
Today, NUST MISIS is among the best universities in the spheres of metallurgy, mining and materials science. The University is extensively evolving strategically important research and education areas in biomaterials, IT, quantum and nanotechnologies.

	2015	2016	2017	2018
Number of doctors and candidates of sciences	> 1,000	>1,000	>1,100	1,160
Number of academicians who completed advanced training	288	302	330	344
Tutors who completed retraining	32%	35%	38%	40%
Tutors conducting research and project work	38%	39%	42%	44,5%
Professors with work experience at the world's leading research and education centers	24,5%	24,5%	24,5%	24,5%



#### FINANCING OF SCIENCE



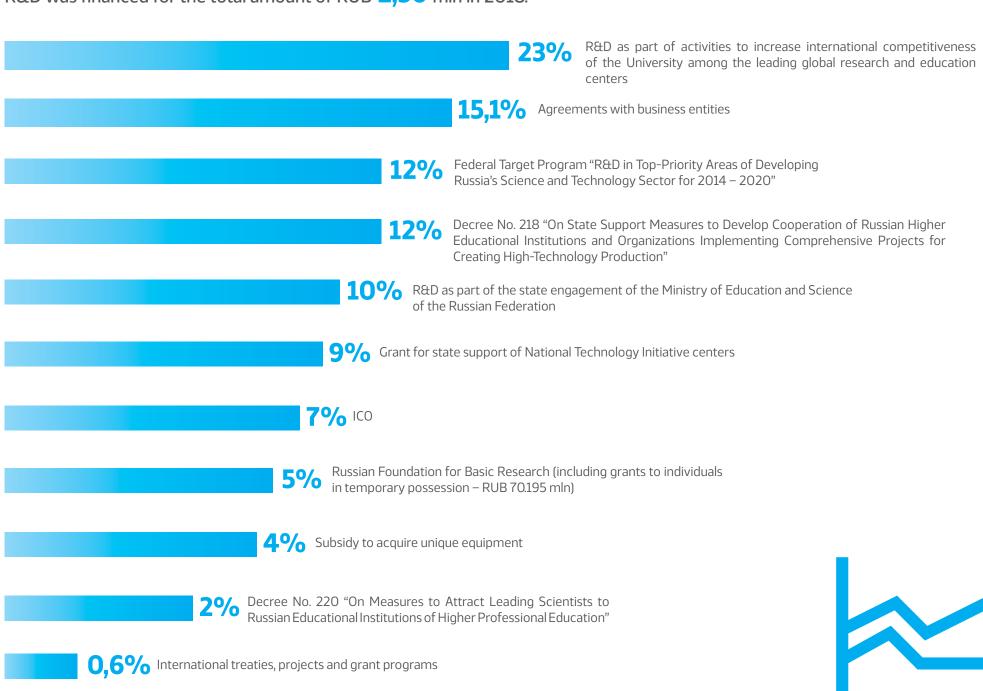


FINANCING OF RESEARCH ACTIVITIES, IN MILLION RUBLES

#### STRUCTURE OF R&D FINANCING IN 2018, %

0,3% Scholarship of the President of Russia

R&D was financed for the total amount of RUB 2,36 mln in 2018.



## PUBLICATIONS IN TOP 1% JOURNALS BY SNIP

## The University's scientists publish their articles in top-rated academic journalsincluded in TOP 1 % by SNIP.

Papers of NUST MISIS researchers appeared in such journals, as Reviews of Modern Physics, Progress in Materials Science, Nature Photonics, Physics Reports, Nature, etc.

#### **Reviews of Modern Physics**

article authored by G. Roringer and A.N. Rubtsov

#### **Progress in Materials Science**

article authored by Yu.O. Estrin

#### **Nature Photonics**

article authored by I.V. Blinov

#### **Physics Reports**

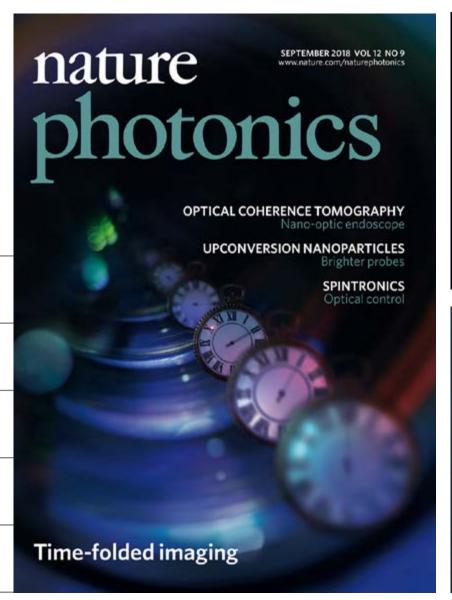
article authored by G.E. Tsironis

#### Nature

article authored by A.V. Krasheninnikov

#### Science

article authored by M.L. Gorodetsky

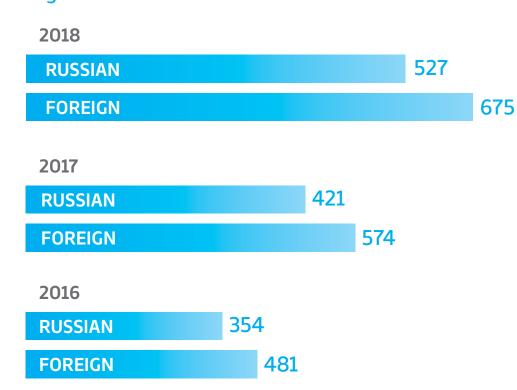






## RESEARCH AND EDUCATION PARTNERSHIP

Number of articles published in collaboration with the leading Russian and foreign academic organizations:



#### Articles published in partnership with Russian academic organizations in 2018:

Russian Academy of Sciences	501
Lomonosov Moscow State University	277
Moscow Institute of Physics and Technology	101
Kurchatov Institute	73
South Ural State University	61
National Research University Higher School of Economics	55
Tomsk Polytechnic University	51
Novosibirsk State University	45
Moscow Engineering Physics Institute	43
Alikhanov Institute for Theoretical and Experimental Physics	40

#### Articles published in partnership with international academic organizations in 2018:

•	CNRS Centre National de la Recherche Scientifique	65
•	Swiss Federal Institute of Technology EPFL, Lausanne	53
•	Università degli Studi di Roma Tor Vergata	48
•	Universite Paris-Saclay	46
٠	Massachusetts Institute of Technology	44
•	Universite Paris-Sud XI	44
٠	University of Cambridge	44
•	Rheinisch-Westfälische Technische Hochschule Aachen	43
•	University of Oxford	43



#### **DESERVED RECOGNITION**

#### **COLLABORATION WITH MEGASCIENCE PROJECTS**

#### Participation of NUST MISIS in competitive activities held by Rospatent and the Federal Institute for Industrial Property

Resulting from the pre-qualification, the following NUST MISIS research efforts were added to the list of the best 100 Russian inventions annually published by Rospatent: "Thermoduric Cloth of Polymer Tissues and Items from such Cloth" (authors: V.P. Tarasov, O.N. Krivolapova, I.G. Kozlov, N.V. Ivanyus, S.V. Borodin) and "Method of Obtaining Electrodes from Alloys based on Nickel Aluminide" (authors: E.A. Levashov, Yu.S. Pogozhev, Zh.A. Sentyurina, A.A. Zaytsev, V.N. Sanin, V.I. Yukhvid, D.E. Andreev, D.M.

The "Patent of the Week" is the invention entitled "Drilling Unit Armed with Diamond-**Charged Cutter Elements**". Authors: N.I. Polushin, A.L. Maslov, A.I. Laptev, A.S. Kushkhabiev, O.S. Kotelnikova, Yu.S. Varshavsky.

#### Today, the University employs more than 70 researchers having the Hirsch index exceeding 20



#### Anvar Zakhidov

Academic advisor of infrastructural project "High-Scopus Awards Russia 2018.



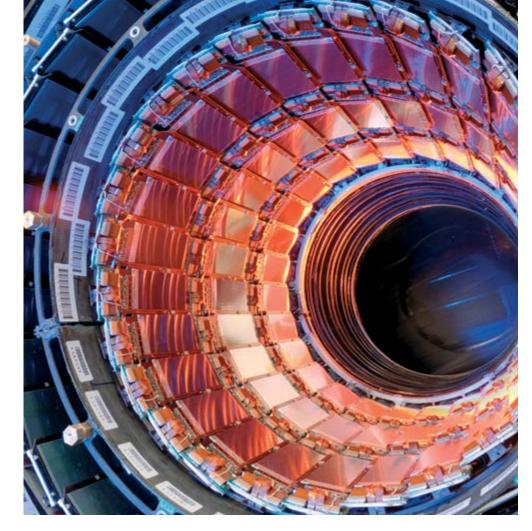
#### **Sergey Morozov**

Head of laboratory "Functional Low-Dimensional Employees of the physical chemistry department of Performing Polymer Tandem Photovoltaics based Structures", doctor of physics and mathematics, mathematics, professor of NUST MISIS. Winner of the Web of Science Awards 2018 as the most cited Russian innovations for 2018. scientist in the "Physics" nomination.



#### Anastasia Klimont and Ruskan Galimzvanov

NUST MISIS. Laureates of the annual Moscow Government on Hybrid Perovskits", candidate of physics and co-author of over 60 academic papers. Winner of the Prize awarded to young scientists in the area of science of



Professors from the leading research education centers from all over the world, such as Nicola Serra (University of Zurich), Giovanni De Lellis (University of Naples), Mitesh Patel (Imperial College London) and others, work for NUST MISIS. in 2018, NUST MISIS expanded its participation in MegaScience projects and became a fully-fledged member of two CERN collaborations - LHCb and SHiP.

NUST MISIS scientists took an active part in developing new materials and radiation-hardened electronics to update a calorimeter for the LHCb experiment, created a prototype target for the SHiP experiment and tested it in summer 2018 using a proton beam at the SPS CERN accelerator as part of the experiment to measure a flow of muons. During the SHiP experiment, the University's scientists develop one of the key subsystems – a magnetic muon protection to observe rare interactions of hidden sector particles.



"We hope that the laboratory at NUST MISIS will play a key role in choosing the emulsion for the SHiP experiment, since the University has a wealth of experience in diagnostics, as well as an excellent choice of testing equipment. We are confident that the University is the right place for achieving the targets set"

Professor of Imperial College London and NUST MISIS, head of project entitled "Promising Solutions, Technologies, Methodologies and Materials to Search for New Physical Effects"



## COOPERATION WITH RESEARCH CENTERS

#### INVENTIONS AND INNOVATIONS

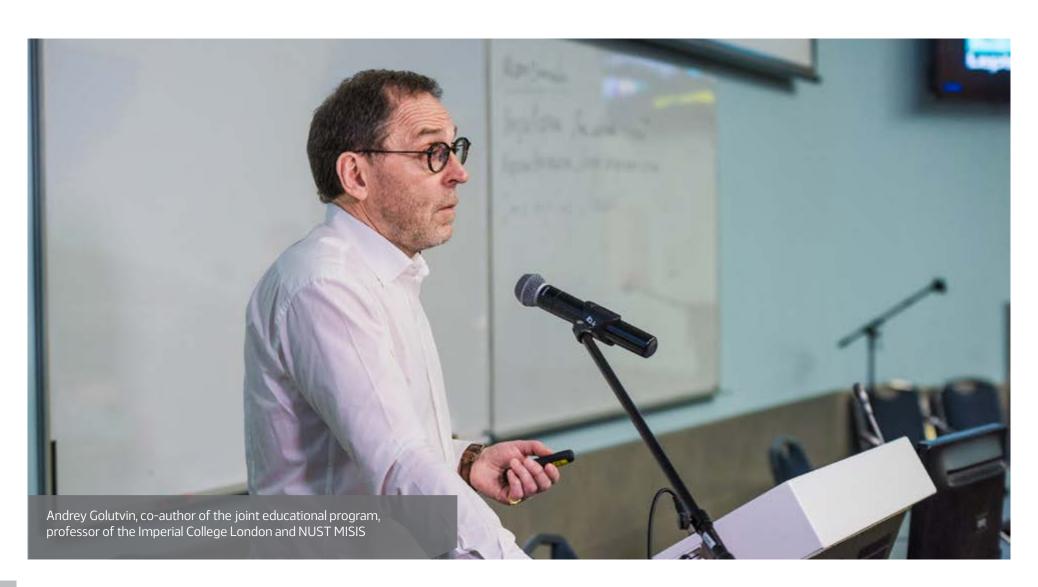
#### **NTI Center for Quantum Communications**

Resulting from the competition to select recipients of grants for the state support of National Technology Initiative centers based on educational institutions of higher education and academic organizations, the NTI Center for Quantum Communications was established in November 2018 comprising the laboratories of:

- quantum communications
- analysis of practical sensibilities of quantum cryptography systems and developing methods of its certification
- theory of quantum communications
- element base of quantum communications
- distributed quantum systems

#### **CERN** educational program

In 2018, NUST MISIS commenced an educational program in English entitled "New Technologies to Search for New Physical Effects" developed by the University and CERN in partnership with international education centers of INFN, the University of Naples Federico II, the University of Zurich and the Imperial College London. The program is designed to attract talented students and post-graduates for training in physics.



Scientific developments of NUST MISIS have been awarded at Russian and international exhibitions in 2018:

«Archimedes-2018», Moscow

4 gold medals

iENA-2018, Nürnberg

2 gold medals
1 silver medal

1 bronze medal

IIDC 2018, Hong Kong

2 gold medals
3 1 silver medal





#### STUDENT SCIENCE

#### NUST MISIS is one of the leaders in promoting the achievements of the Russian science

#### Science Slam

NUST MISIS is one of the ideologists and the most active participant of Russian movement Science Slam – popular scientific "battles" attended by beginning scientists telling other participants about their developments in a concise and easy-to-understand way. In October 2018, the University arranged the first inter-university Science Slam University held in the NUST MISIS Commune House.

#### All-Russian festival of popular scientific formats Science MISIS

In October 2018, festival of popular scientific formats Science MISIS was held that combined 1,300 people from 30 Russian universities in NUST MISIS. The objective of the event is to tell its attendees about the best practices of NUST MISIS and other national universities in promoting scientific achievements.

#### 73th Science Days and the VIII Youth Award in science and innovations

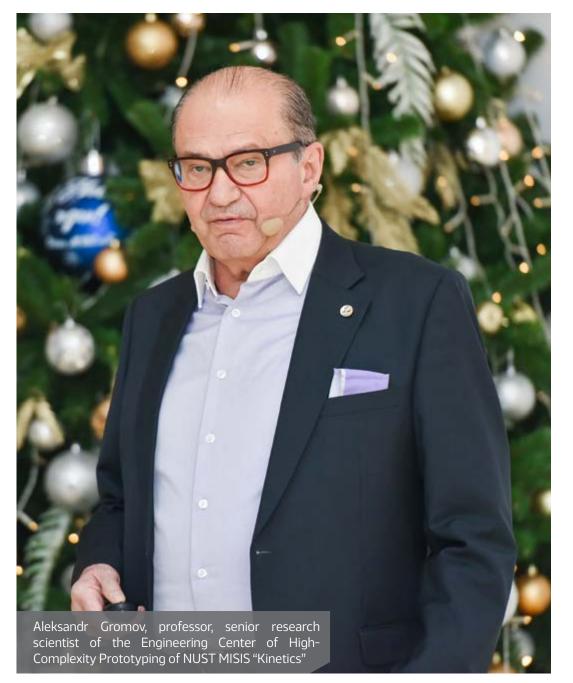
Science Days is one of the largest and oldest University's conferences comprising a number of events devoted to research activities of NUST MISIS students. The conference traditionally sums up the results of the all-Russian Youth Award in science and innovations, including in the format of videoclips about the research activities of its participants.

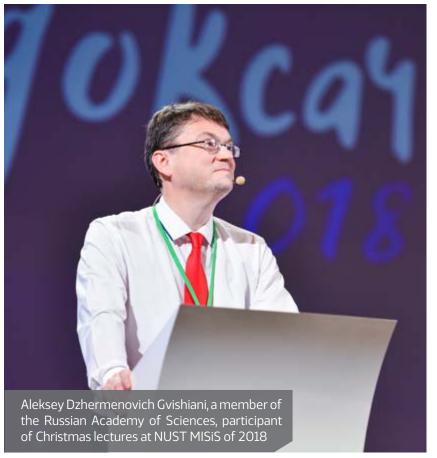




#### **Christmas lectures at NUST MISIS**

Project aimed at science promotion. The leading Russian and global scientists dwell on the most recent achievements and trends of modern science in a concise way with the help of examples that we encounter in our daily life.





#### Lectures and forums

Permanent lecture courses: Geolecture Course, Cosmolecture Course, SetUp@MISIS, etc. Major science education forums: "Scientists against Myths", festival of scientific humor "Paradoksach", festival of critical thinking "Insendio".

In 2018, the Student Scientific Society (SSS) of NUST MISUS won the competition for the best SSS of Moscow and Moscow region

#### JOINT PROJECTS WITH THE BUSINESS

NUST MISIS cooperates with over 1,600 business partners, leading Russian and foreign companies The University has once again confirmed its positions in the QS Graduate Employability Rankings by entering the 301+ group. In 2018, the University ran 37thglobally in the QS rankings in the "Organization of Interaction between Employers and Students" nomination by gaining 95.5 points out of 100.

#### **Green Metallurgy Center**

NUST MISIS and PJSC Severstal, one of the largest vertically-integrated metals and mining companies globally, have entered into the cooperation agreement for implementing joint projects and creating the Green Metallurgy Center.

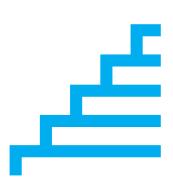
#### UC RUSAL's R&D center

The College of Lightweight Materials & Technologies (CLWMT) is Russia's first platform for the joint taking by NUST MISIS, UC RUSAL and members of the Aluminum Association of R&D of efforts for the creation of new materials for high-technology sectors, developing additive technologies and metal matrix aluminum composites, as well as aluminum-based sources of current.

#### Cooperation in the educational sector

Under the cooperation agreement, NUST MISIS and Mail.Ru Group implement joint educational projects and arrange educating IT activities from Mail.Ru Group experts.







#### BEST ACADEMIC PRACTICES: INTERNATIONAL SCIENTIFIC COUNCIL (ISC)

#### NUST MISIS held the tenth meeting of the International Scientific Council.

On October 16-19, 2018 the University hosted the tenth anniversary meeting of the International Scientific Council of NUST MISIS, whose members are the leading scientists from 8 countries worldwide representing such universities, as the University of Cambridge, the Stanford University, Technion, the University of Iowa, etc. The key topics of the tenth meeting were issues of improving the current, and developing new, educational programs of the University.







"The iPhD program proposed by NUST MISIS is indeed robust, prospective and has good chances of success. It significant advantage is that its authors strive to re-consider the "lecture" and "course" concepts. I believe that in the next decade the traditional understanding of class lectures will be fully outdated. More often than not we see that students want the required content to be available in the 24/7 mode"

#### Louis Halamek

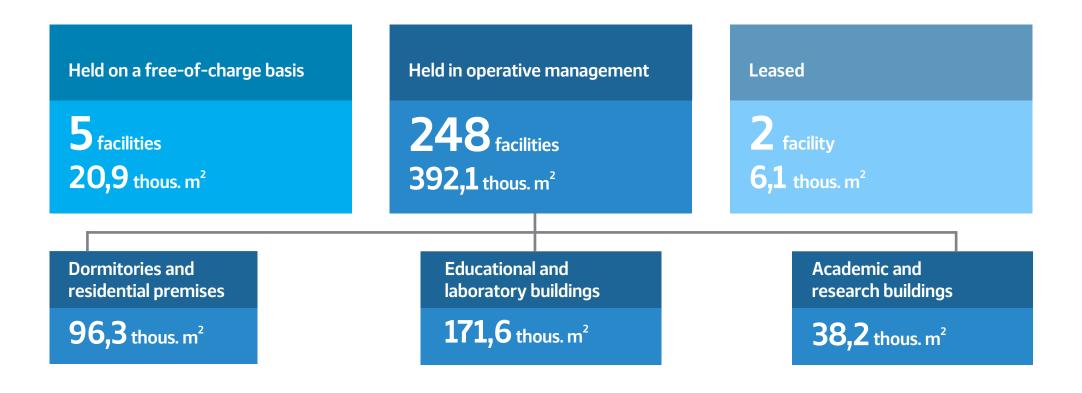
Professor, director of the Center of Prospective Teaching Technologies in Medicine and Pediatrics of the Stanford University (United States)





## UNIVERSITY'S INFRASTRUCTURE

#### UNIVERSITY'S INFRASTRUCTURE







#### **CONTRUCTION AND RECONSTRUCTION**

#### **Entrance groups**

The repair of student entrance groups for educational and laboratory building "B" and block "K" was completed

#### Lecture theater B-2

The area of 167 m<sup>2</sup> designed for 87 seats is fitted with up-to-date equipment for holding lectures, round-tables and other activities

#### **Premise for CLWMT**

Total amount of premises repaired: about 2 thous. m<sup>2</sup>

#### Landscaping and restoration of the historic entrance to Gorky Park

The grant for performing the work was provided by the Department of Major Repair of Moscow

#### Dormitory of the Stary Oskol Institute of Technology of NUST MISIS

500 seats for accommodating students and 39 apartments for employees were commissioned

#### Premise for the pressure metal treatment department

Total amount of premises repaired: over 1.4 thous. m<sup>2</sup>

#### Premises for the laboratory of prospective solar energy

The laboratory is hosted in the "Point of Birth of Innovations" complex. The work was performed on account of the grant provided by the Department of Education and Science of Moscow

#### Historical building of the Moscow mining Academy

The work of preserving the item of cultural heritage was performed: repairs of façades and roof. The work was performed on account of the subsidy granted by the Ministry of Education and Science of Russia

#### Facades of educational and laboratory building "B"

Heat insulation for façades and finishing with brick tiles. The work was performed on account of the grant provided by the Department of Education and Science of Moscow



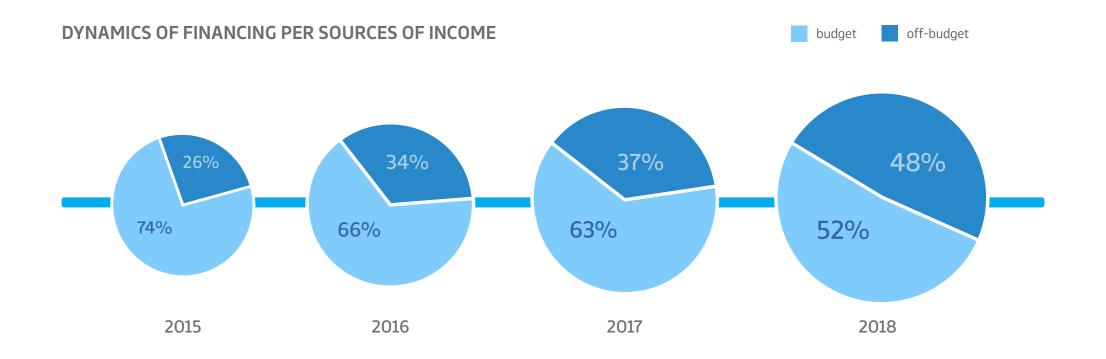




# FINANCE MANAGEMENT

#### FINANCING OF NUST MISIS

## STRUCTURE OF INCOME (WITH BRANCHES)





INCOME	2018
Education	41%
Science	22%
Development programs	23%
Lease	<b>6%</b>
Others	<b>8</b> %





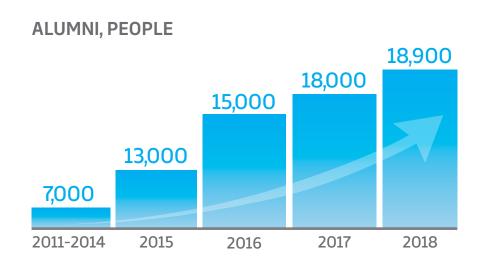
# ENDOWMENT FUND

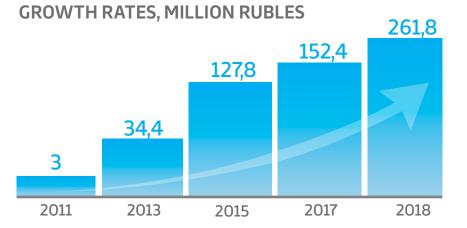
# MOVIIN NUST MISIS graduates of 2018

# GROWTH RATES OF THE ENDOWMENT FUND

The endowment fund carries out its operations on account of donations from graduates and charity providers of the University, as well as thanks to target investment from its business partners. In 2018, the endowment fund held over 20 activities for graduates of various years of graduation.









# SUPPORT OF SCIENCE, EDUCATION AND CREATIVITY

In 2018, the following projects were funded:

"TEACHER OF THE YEAR", "EMPLOYEE OF THE YEAR" AND "STUDENT OF THE YEAR" COMPETITIONS

COMPETITION OF JOINT PROJECTS OF NUST MISIS AND ROSATOM STATE CORPORATION

SUPPORT OF THE MISS OF MISIS COMPETITION: ARRANGING A TRIP TO ANY PART OF THE WORKD FOR THE WINNER

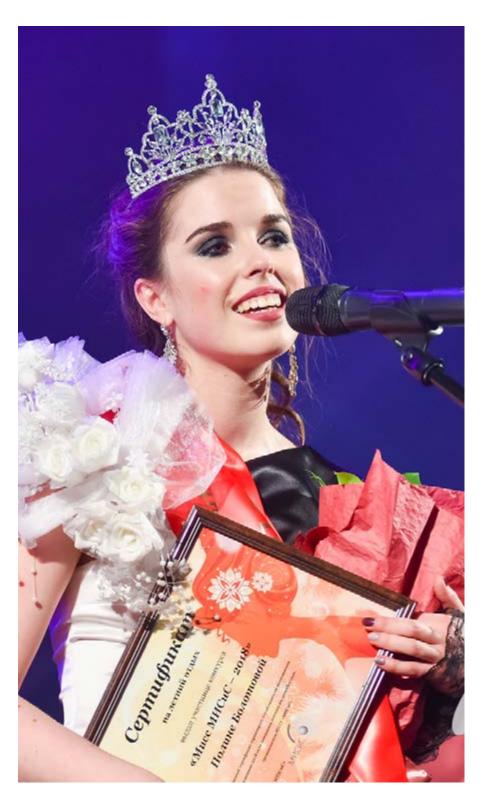
ALL-RUSSIAN FESTIVAL OF POPULAR SCIENTIFIC FORMATS "SCIENCE MISIS"

SUPPORT AND CONDUCT OF THE CUP MISIS CASE (PJSC SEVERSTAL)

SESSIONS TO DEVELOP PARTNERSHIP BETWEEN ENTITIES OF THE NUCLEAR INDUSTRY AND NUST MISIS

ADVANCEMENT OF RESEARCH PAPER ENTITLED "EXAMINATION OF DURABILITY OF PIERCING MANDRELS AND TRACHING INSTRUMENT OF PIERCERS" (JSC TMK

ENDOWMENT BREAKFAST: FREE-OF-CHARGE BREAKFASTS FOR STUDENTS AND EMPLOYEES OF NUST MISIS IN ALL UNIVERSITY CANTEENS AND "METALLURG" DORMITORY



# STUDENT SCHOLARSHIPS AND AWARDS

## A.D. Deyneko scholarship provided by TMK

Established by TMK in 2013. The scholarships is granted to students of the Department of Pipe Production Technology and Equipment on a monthly basis

#### Student award of JSC Giredmet

Awarded to students of the Department of Semi-Conductors and Dielectrics for winning the competition of materials science papers of students and post-graduates as part of Science Days at NUST MISIS

#### S.S. Gorelik student award

Paid to students of the Department of Materials Science of Semi-Conductors and Dielectrics on a monthly basis

#### V.A. Arutyunov scholarship

Established by Chairman of the Management Board of JSC RUSNANO Oleg Vladimirovich Kiselev in 2015. It is paid to students of the Department of Energy-Efficient and Resource-Saving Industrial Technologies on a monthly basis

#### V.S. Strizhko student award

Paid to students of the Department of Non-Ferrous Metals and Gold on a monthly basis





# CAREER CENTER

#### **CAREER CENTER**

NUST MISIS attaches special significance to the employment of its graduates. For this purposes, it has established the Career Center operating with over 1,600 Russian and foreign companies. The Career Center rendered support to over 8,000 students and arranged more than 1,000 career-related events.

In 2018, the "New Level" professional navigation program won the all-Russian "21stCentury Leader" competition as the best system of training students. In 2018, students who completed this program won two grant competitions arranged by the Federal Agency for Youth Affairs, while the Career Center became a winner of the all-Russian "Career Faculty" competition.

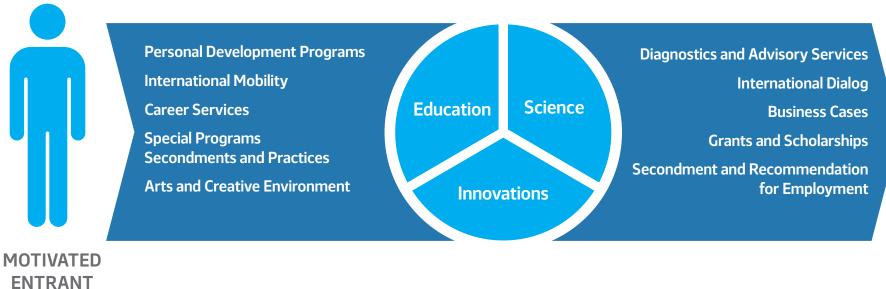
#### 37th

globally in the QS rankings in the "Organization of Interaction between Employers and Students" nomination



# CAREER ECO-SPHERE FOR STUDENTS





SUCCESSFUL

Business Community

Public Bodies

Education Institutions

# DEVELOPMENT DYNAMICS OF CAREER SERVICES

<b>KEY</b>	PRO.	<b>JECT</b>	S
WIT	H PA	RTN	ERS

Number of students support	ted
by the Career Center	

Number of partnering companies registered in the database

Number of activities performed

Number of professional navigation documents drawn up for students and graduates

_	_	_	_	

2016

4,463

6,320

2017

8,350

2018

#### 1,487

1,611

1,675

#### 435

**525** 

16

1,029

19

**14** 



#### **PROJECTS**

Development programs ("New Level", "Initiative", "21th Century Leader", etc.)

visits to partners and competition

"Company of My Dreams" Project:

#### Case movement

(CASE IN cups, EuroChem championships, CUP MISIS CASE, technology case games, training course for cases)

Open career events: forums and vacancy fairs ("PRO: career", etc.)

Individual consultations

Other professional navigation projects (career days, corporate projects, etc.)

NUMBER OF PARTNERS

1,224

**298** 

7,557

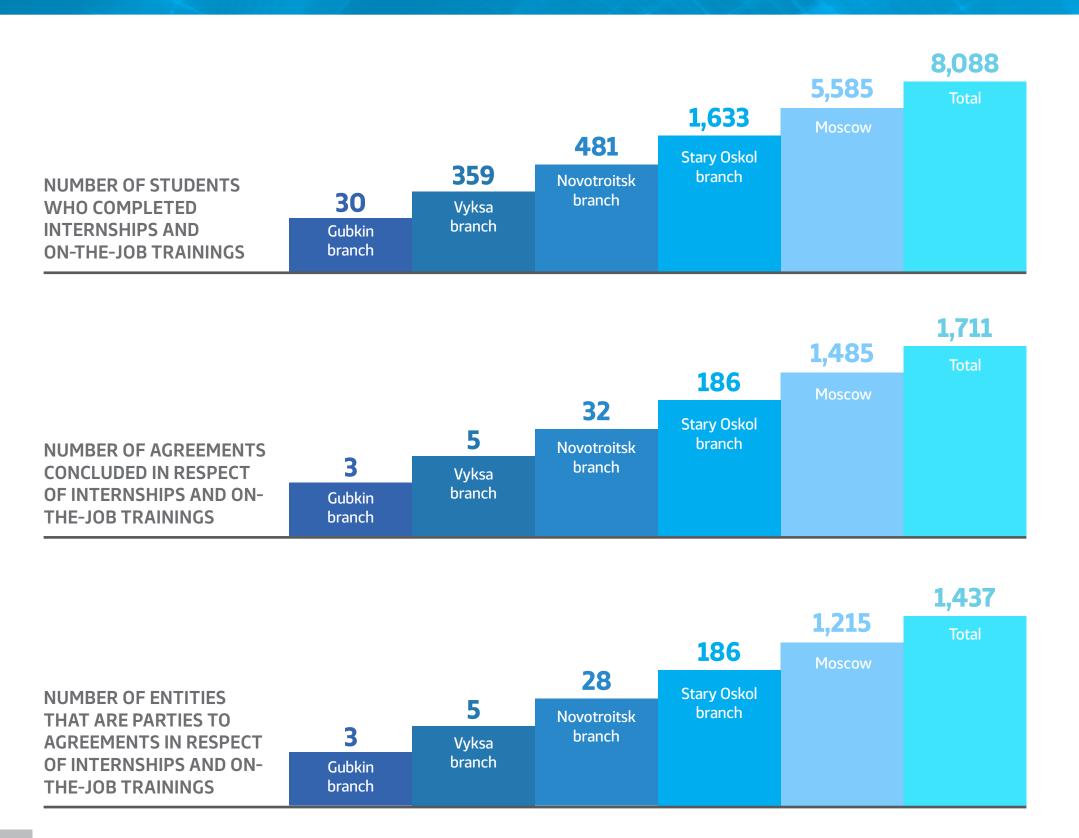
235

1,285

430



# INTERNSHIPS AND ON-THE-JOB TRAININGS



# SCHOLARSHIPS AND GRANTS FROM BUSINESS PARTNERS

The primary scholarship and grant programs are implemented jointly with business partners in the following major areas of interest: support to young scientists and successful students, studying abroad, and extra-curricular achievements.

## Scholarship and grant programs are as follows:

Scholarship granted by JSC United Metallurgical Company

Scholarship granted by the Metalloinvest Group of Companies

Scholarship named after the Batashev brothers

Scholarship granted to CIBS (IIBS) students

Scholarship of the Almalyk Mining and Smelting Works

Grant support of the Chelpipe leadership program based on the NUST MISUS master's degree studies

A.D. Deyneko scholarship provided by TMK

Scholarship granted under the "UMNIK" program

V.S. Strizhko award

Award of JSC Giredmet

V.A. Arutyunov scholarship

ARCONIC fund scholarship

Scholarship granted by Mr. Potanin's charity fund



84 | 85

# CREATIVE ECO-INVIRONMENT





### MAKER FAIRE MOSCOW

#### Maker Faire Moscow is an international festival of inventions and ambitious technical solutions.

NUST MISIS FabLab, the ideologist and the organizer of the event, is Russia's first laboratory for personal digital production established in 2012 with the assistance of MIT. In 2018, the third maker festival was held in the Gorky Park.

71,000

**163** 

**233** 

visitors

exponents from 63 countries

press publications

#### Festival partners:

- 1. Department of Education of Moscow
- 2. Department of Science, Industrial Policy and Entrepreneurship of Moscow
- 3. Eurocement group
- 4. Leroy Merlin
- 5. LabProject Education
- 6. Paramount Comedy
- 7. Amperka







#### STUDENT SELF-GOVERNANCE

# PATRIOTIC UPBRINGING

#### NUST MISIS is among the winners of the all-Russian competition of youth projects arranged by the Federal **Agency for Youth Affairs**

- 4 projects in the following areas of interest were implemented:
- science and innovations
- patriotic upbringing and cross-cultural communications
- support of student self-governance
- student sports, tourism

University students became the laureates of a regional stage of the all-Russian "Student of the Year" national award:

#### DARIA ANOSOVA

1<sup>th</sup> place in the "Creative Personality" nomination

#### **SERGEY FADEEV**

3th place in the "Foreign Student" nomination

#### ALEKSANDR MINDEROV

3th place in the "Volunteer" nomination



# AND VOLUNTEERING

#### Patriotic upbringing

The "Devoted to the Heroic Deed of Moscow Defenders" project coinciding with the 77thanniversary of the counterattack of the Soviet troops in the battle near Moscow was implemented with the assistance of Rosmolodezh and NUST MISIS.

The inter-university "Serving Russia" conference coinciding with the Defender's Days was held with the participation of representatives from the Moscow Municipal Council of Veterans, Central Museum of the Great Patriotic War and the "Volunteers of Victory" public

The "From Generation to Generation" exposition devoted to the war and postwar history of MISIS and to the Moscow people's militia of 1941 was presented by University students and employees on the Victory Day.



The "Through Times" project of NUST MISIS ran first in the "Glory to the Motherland!" nomination of the Moscow open competition entitled "Educate a Patriot"

NUST MISIS students became laureates of the "Spring of 1945" youth patriotic competition and the all-Russian Pushkin youth festival of arts entitled "Together with the Century"

#### Volunteering

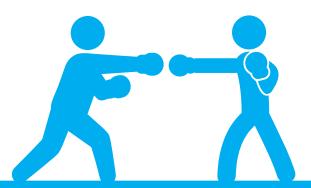
NUST MISIS students participated in the all-Russian "Stop HIV/AIDS" campaign as part of the open "Let's Stop AIDS Together" student forum. The University received a thanks letter from Svetlana Medvedeva, President of the Foundation of Social and Cultural Initiatives.

As part of performing the agreement with public organization "Volunteers of Victory", NUST MISIS conducted training to render volunteer support of the "Immortal Regiment" campaign, and students took part in the all-Russian "Candle of Memory" campaign.

For extensive preparation and conduct of the all-Russian "Immortal Regiment" campaign, NUST MISIS obtained a note of thanks from **President Vladimir Putin** 

#### **SPORTS ACHIEVEMENTS**

#### **CREATIVE ACTIVITY**



## RUSSIAN BOXING CHAMPIONSHIP FOR WOMEN

Darima Sandakova

## VI ALL-RUSSIAN SUMMER BOXING UNIVERSIADE

- Ayk Ayvazyan, Timur Gamzatov, Shamil Mansur
- Tigran Uzlyan



# IV SUMMER JETHAR SPORTS AND ATHLETIC CONTEST FOR RUSSIAN YOUTH (BOXING)

- Vladimir Mnatsakanyan, Sergey Margaryan, Islam Tekeev
- Ivan Blynda
- Alikhan Bakaev, Darima Sandakova, Irina Russkikh



#### RUSSIAN SWIMMING CHAMPIONSHIP (25 M SWIMMING POOL)

Rozalia Nasretdinova

Over 500 students took part in health activities in the resorts and recreational complexes in the Krasnodar krai, the Crimea and Karelia, as well as in programs of the "Adventure" club of Dmitry and Matvey Shparo: StudMix in Karelia and StudMay in the Crimea

#### Development of creative skills

In 2018, inter-university "Gold Voice" and "PROmotion" contests, the "Miss of MISIS" beauty and talent competition and the "MISIS KVN Cup" tournament were held; international, all-Russian and municipal TANZOLYMP, "Moscow Student Spring", "Harmonica is Russia's Soul", "Spring of 1945" and other festivals took place.



## OPEN "MOSCOW STUDENT SPRING" FESTIVAL

"Andeor" dance ensemble, Daria Generalova (MISIS Media)



#### Teaching the student pool

100 students participated in proceedings of the "Horizon" school of student self-governance focused on teaching the staff for University's student associations. As part of the "Dialog on Equal Terms" project, students had a meeting with Aleksandr Bugaev, head of the Federal Agency for Youth Affairs.



## ALL-RUSSIAN "OUR CHOICE IS LEARNING" COMPETITION

The best organization of student self-governance bodies





# EVENTS CALENDAR

## JANUARY

#### 19 January

The creation of a steel-smelting laboratory of the Stary Oskol branch of NUST MISIS based on the Oskol Electrometallurgical Combine became another step towards strengthening cooperation with the Metalloinvest group of companies, the University's strategic business partner.

#### 22 January

NUST MISIS scientists led by professor Aleksey Ustinov, head of the Superconductive Metamaterials Laboratory, made a scientific breakthrough while working in an international group. For the first time ever, "mirror" cubits and a quantum material based thereon were created.

#### 23 January

The Cup MISIS Case won the all-Russian "Career Faculty" competition as the best project of improving the work of universities in charge of training graduates with engineering and technical majors.

#### 25 January

On the Russian Student Day, NUST MISIS conducted the opening of the student office, being a unified administration center for students operating as a one-stop service. The electronic reception is in charge of operating online services, scholarship and social support of students and many other issues.

#### 29 January

NUST MISIS conducted the opening of the updated geological museum named after professor Vadim Viktorovich Yershov. Its exposition made use of cutting-edge multimedia equipment. The museum is a platform for developing educational programs and arranging excursions for students and schoolchildren.

#### 29 January – 2 February

The University held the Miner's Week-2018, the largest international symposium of the mining industry that gathered participants from 50 countries worldwide: the leading representatives of the academic community, head of government entities and top managers of University's partnering enterprises.





## FEBRUARY

#### 1 February

4-year's student of NUST MISIS from Mongolia Naranzhargal Munkhzhargal came second in the VI All-Russian Olympics in Russian among all foreign students of Russian universities. The said activity arranged by the Association of Foreign Students was attended by more than 600 participants from Russian universities.

#### 10 February

After the all-Russian "21stCentury Leader" contest for the best organization of student self-governance bodies, the "New Level" program came first in the "Best System of Teaching and Training the Student Pool" nomination. Launched in 2015, the program is aimed at discovering and training student leaders.

#### 26 February

NUST MISIS was among the TOP-30 of the annual QS World University Rankings by Subject-2018 in the Engineering – Mineral & Mining category and demonstrated a significant growth in the Materials Science, Physics and Metallurgical Engineering categories. The University's highest indicators were found in the "Interaction with Employers" nomination, having scored 98.8 out of 100.

#### 5 February

Two academic teams of NUST MISIS obtained Moscow Government Prizes for young scientists for 2017. In the "Energy Efficiency and Performance" nomination, candidate of technical sciences Aleksandr Bykov and post-graduate student Ksenia Kuzmina were awarded for creating a high-performing transformer of ionizing emission into electricity. In the "Advanced Industrial Technologies" nomination, the awards were granted to candidate of technical sciences Daria Sidorenko and candidate of technical sciences Pavel Loginov for developing a new generation cutting diamond instrument.

#### 16 February

Head of the Laboratory of Functional Law-Dimensional Structures of NUST MISIS, doctor of physics and mathematics Sergey Morozov was praised by Web of Science Awards 2017 in the physics nomination as the most cited scientist.

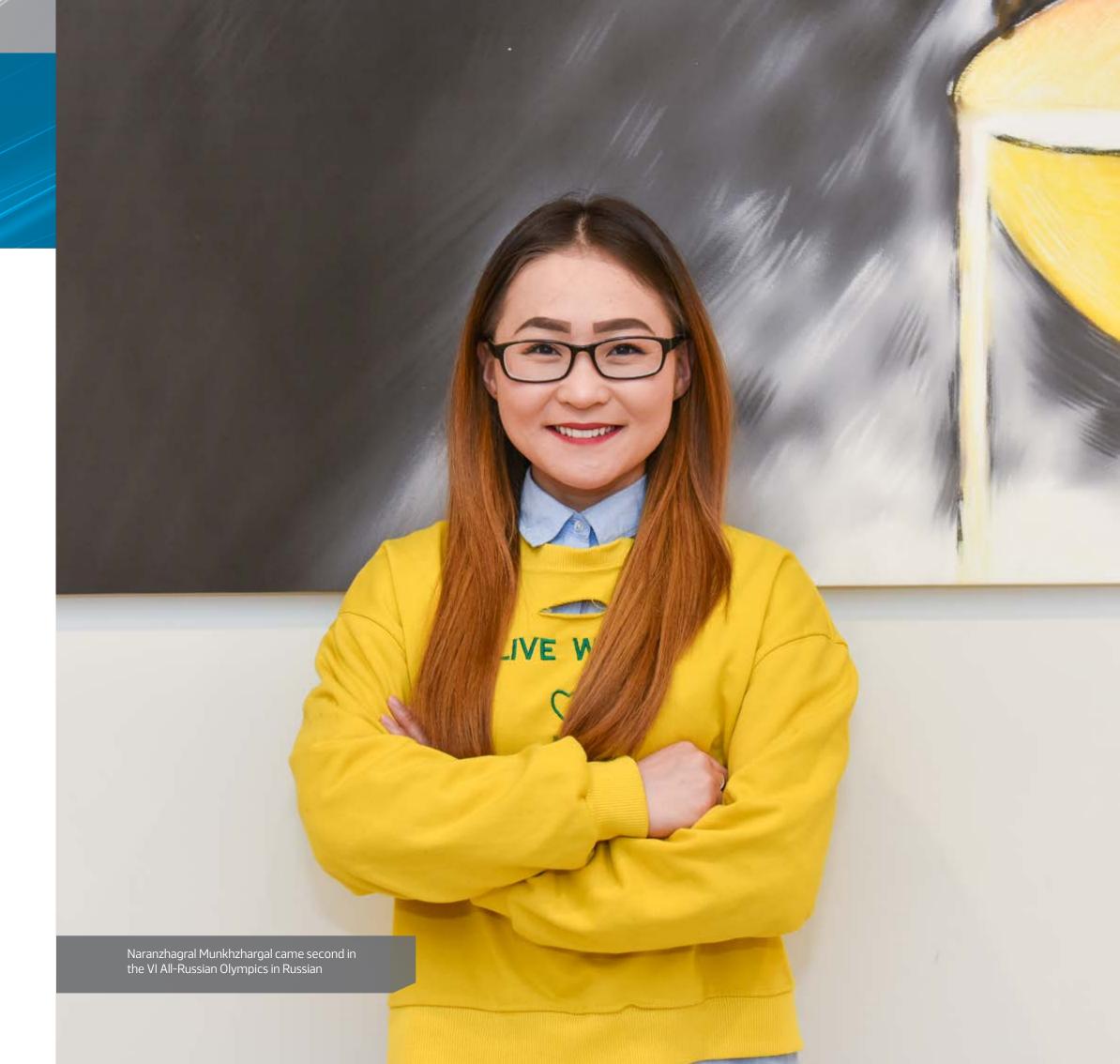
#### 8-9 February

At the extended meeting of the boards of the Russian Union of Car Manufacturers and of the "League of Assisting Defense Enterprises" Association, the chairman of the Russian Union of Car Manufacturers and head of state corporation Rostekh Sergey Chemezov expressed his thanks and awarded the NUST MISIS team with a diploma for their contribution for preparing the talent pool and active involvement in holding the "Star" Olympics, being the primary school engineering Olympics in Russia.

#### 20 February

On the Day of Russian Science, NUST MISIS launched a cycle of all-Russian open professional navigation lessons for high school students developed by the Ministry of Education of the Russian Federation and the ProeKTOriYA portal. Those lessons were, among others, devoted to space technologies, digital economics, urban science, intellectual intelligence, etc.





## MARCH

#### 2 March

"Andeor" dance ensemble won the inter-university "PROmotion" competition in the "contemporary dance" nomination. Created by NUST MISIS students in 2004, "Andeor" is a multiple winner and prize winner of all-Russian and regional competitions.

#### 20 March

NUST MISIS masters Ilya Shmelev and Ilya Shigabeev won AMC Makeathon 2018 arranged by the American Cultural Center in Moscow for students and young specialists.

#### 31 March

With the support from the "Gutenberg's Smoking Room" project, NUST MISIS held the "Insendio!" critical thinking festival. About one thousand people attended the NUST MISIS Community House to hear the speeches of the leading science promoters. Over 200 thousand users watched the online broadcast.

#### 16 March

Resulting from the competition held by Mr. Potanin's charity fund, 9 NUST MISIS students acquired the entitlement to a scholarship to be paid to them throughout the entire term of their master's degree studies. A special grant for developing the master's degree program was given to Vladimir Kuznetsov, head of the FabLab digital production laboratory of NUST MISIS.

#### 26 March

Over 1,500 entrants from all across Russia participated in the Welcome Day in NUST MISiS that for the first time combined entrants for all fields of study, including bachelor's degree, master's degree programs and post-graduate studies.

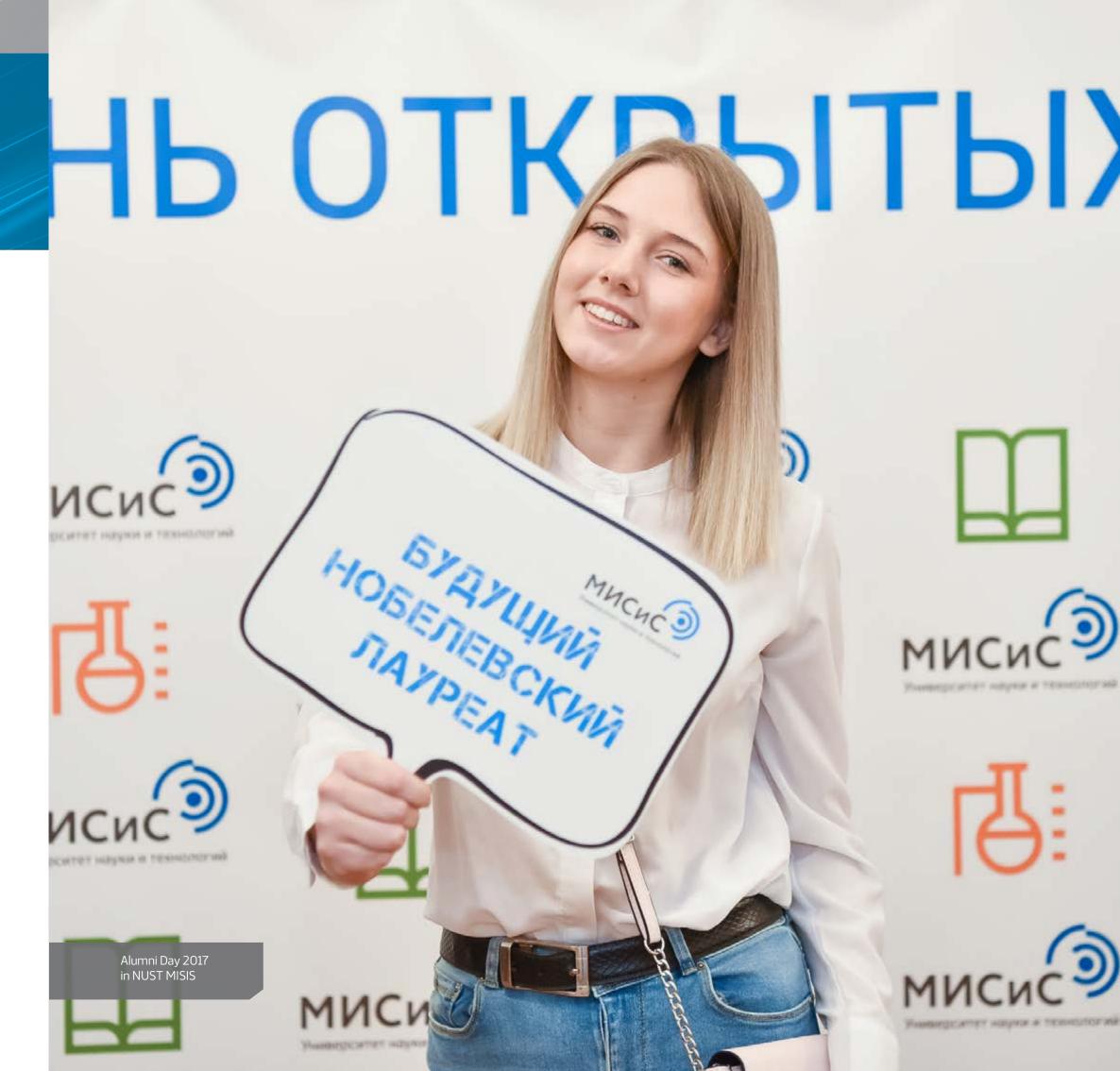
#### 19 March

NUST MISIS was among the TOP-10 leaders of the first Russian rankings of universities focused on practical training and dealing with business matters. The research was prepared by educational platform Changellenge.

#### 27 March

The Pro:career forum in NUST MISUS enabled students to meet their potential employers, take a professional navigation quest and testing under the Profcareer 3.0 program and visit the vacancy fair.





# APRIL

#### 5 April

17 April

24 April

The "Miss of MISIS 2018" contest is the key spring event of student life, a fest of womanhood, beauty and talent. The "Miss of MISIS 2018" crown was awarded to Polina Bolotova who successfully passed all stages of the contest.

NUST MISUS signed the cooperation agreement with

German company Auerhammer Metallwerk – one of

the oldest enterprises involved in industrial processing

NUST MISIS and PJSC Sberbank signed the cooperation

agreement for the joint conduct of technology

hackfests, creation of educational programs, including

in the area of vocational education programs and

preparation of specialists for digital economics.

of metals and creation of alloys globally.

8 April

After the XXI Moscow International Salon of Inventions and Innovative Technologies "Archimedes-2018", all the inventions presented by NUST MISIS obtained gold medals.

#### 18-21 April

During the Moscow International Education Salon, one of the key sectoral events in Russia, NUST MISIS representatives presented the University's best practices and told about the integration of mixed education in the teaching process.

#### 27 April

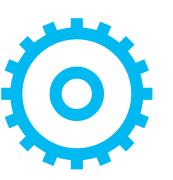
Two developments of NUST MISIS teams were selected by independent experts out of 34 thousand patents registered in 2017 for the annual Rospatent rankings of the best 100 inventions of Russia. The winning projects are: "Thermoduric Cloth of Polymer Tissues" and "Method of Obtaining Electrodes from Alloys based on Nickel Aluminide"

#### 14 April

NUST MISIS became one of the key Moscow platforms of the international "Total Quiz" educational campaign by admitting over 1,000 participants wishing to check their knowledge of Russian. The text of quiz was read out loud by famous actor Leonid Yarmolnik.

#### 19-21 April

NUST MISiS reflected on the 7erd Science Days, during which young scientists defended their academic projects. The award ceremony was completed by scientific battles of young scientists - Science Slam





# MAY

#### **10 May**

According to the university rankings of actively developing countries drawn up by the Times Higher Education in 2018, NUST MISIS demonstrated material grown by entering the TOP-100 best universities.

#### 26 May

The Spring of Metallurgists held for the 15thtime in Neskuchny Garden gathered over 1,000 students who participated in passing GTO sports competitions, the race for 1,000 meters, table tennis competitions, orienteering, "funny starts" and rope rolling.

#### 31 May

The development of student self-governance in NUST MISIS obtained deserved recognition: the University's Joint Student Council won the Moscow rankings of student organizations in two nominations: "Involvement in Co-Governance" and "Financial and Administrative Support".

#### 13 May

After the final state of the third International Creative Design Competition Named after Academician A.A. Bochvar, 40 winners and 350 prize winners were selected. It is one of the largest Russian competitions focused on talent search among students and graduates of Russian and foreign universities involved in scientific studies.

#### 29 May

Moscow's Mayor Sergey Sobyanin and heads of the Department of Education of Moscow congratulated the University with its Centenary and awarded its employees and lecturers for their contribution to preparing qualified specialists.

#### 31 May-1 June

NUST MISIS became an educational partner of the largest Russian and CIS conference and exhibition for technology businessmen Startup Village in Skolkovo and demonstrated the opportunities of small innovative enterprises in the research, technologies and education categories.

#### **17 May**

NUST MISIS improved its positions in the Times Higher Education International Student Table 2018, by taking the 162nd place among international universities and the 2nd place among Russian ones.

#### 30 May

During the annual Channel Service Conference 2018, Huawei Corporation recognized NUST MISIS as the best academic partner in the Best ICT Academy category.





# JUNE

#### 1 June

NUST MISIS became a laureate of the "Communications Laboratory" award, being the first Russian professional award for specialists in scientific communications established by AKSON with the assistance of the Russian Venture Company.

#### 4 June

The execution of the agreement for strategic cooperation and technical re-equipment of scientific training center "International School of Microscopy" with advanced electronic microscopes produced by JEOL became another step in strengthening collaboration with Japanese Tokyo Boeki.

#### 6 June

According to the annual QS World University Rankings, NUST MISIS demonstrated a significant improvement by taking the 476thplace among the best universities globally. For five years of participating in QS Rankings, the University moved up by 225 positions, thus demonstrating only positive dynamics year on year.

#### 6 June

NUST MISIS confirmed its status of one of the best technical national universities by moving up to the 11th place in the National University Rankings composed by international information group Interfax. NUST MISIS showed progress in integrating innovations by running second among Russian universities in this nomination.

#### 18 June

The international research team with the participation of the leading scientist of NUST MISIS Gotthard Seifert made an important step in creating two-dimensional semi-conductor materials. The article about the research was published in Nature Physics.

#### 19-21 June

NUST MISIS took an active part in conducting the Global Mining Congress in Astana that combined over 1,200 leading experts from 50 countries. The ceremonial reception for famous graduates of the University became a remarkable event on the congress agenda and one of jubilee activities devoted to the Centenary of the Moscow Mining Academy.

#### 19 June

The joint development of NUST MISIS and Neurotrend for patients with articulation and movement disorders – NeuroChat – came first in the Health section at the largest global exhibition of consumer electronics and technologies CES Asia.

#### 28 June

NUST MISIS ran 4th in the TOP-100 of the best national universities, according to Forbes. The rankings were based on three indicators: quality of education, number of graduates and the Forbes factor taking account of career prospects of students and a share of successful businessmen in the total amount of graduates.



# JULY

#### 2 July

NUST MISIS, the BELAZ holding and the Mining Financial Company signed the trilateral cooperation agreement in the educational and research spheres. Based on NUST MISIS, a hydraulic gear laboratory and a training center with equipment simulating BELAZ hoppers will be created.

#### 19 July

The University took part in a business program of the Moscow Urban Forum 2018 forum that gathered the leading architects, mayors of the largest megacities, top managers of global corporations and representatives of technological startup in the congress hall of Zaryadye.

#### 30 July

NUST MISIS became the arranger of the first Russian international conference devoted to the creation of superconductive processors underlying new generation computers – quantum computing devices.

#### 16 July

19 July

NUST MISIS entered into the agreement with PJSC Severstal, one of the University's key business partners, for the creation of joint Green Metallurgy Center to deal with comprehensive issues of developing the pipe production sector, elaborating innovative technologies and new approaches to increasing the production performance.

The scientific team of the Superconductive

Metamaterials Laboratory under the direction of

candidate of technical sciences Aleksey Basharin

developed a metamaterial-dielectic whose unique

features and ease of production allow using it for

creating advanced optic devices.

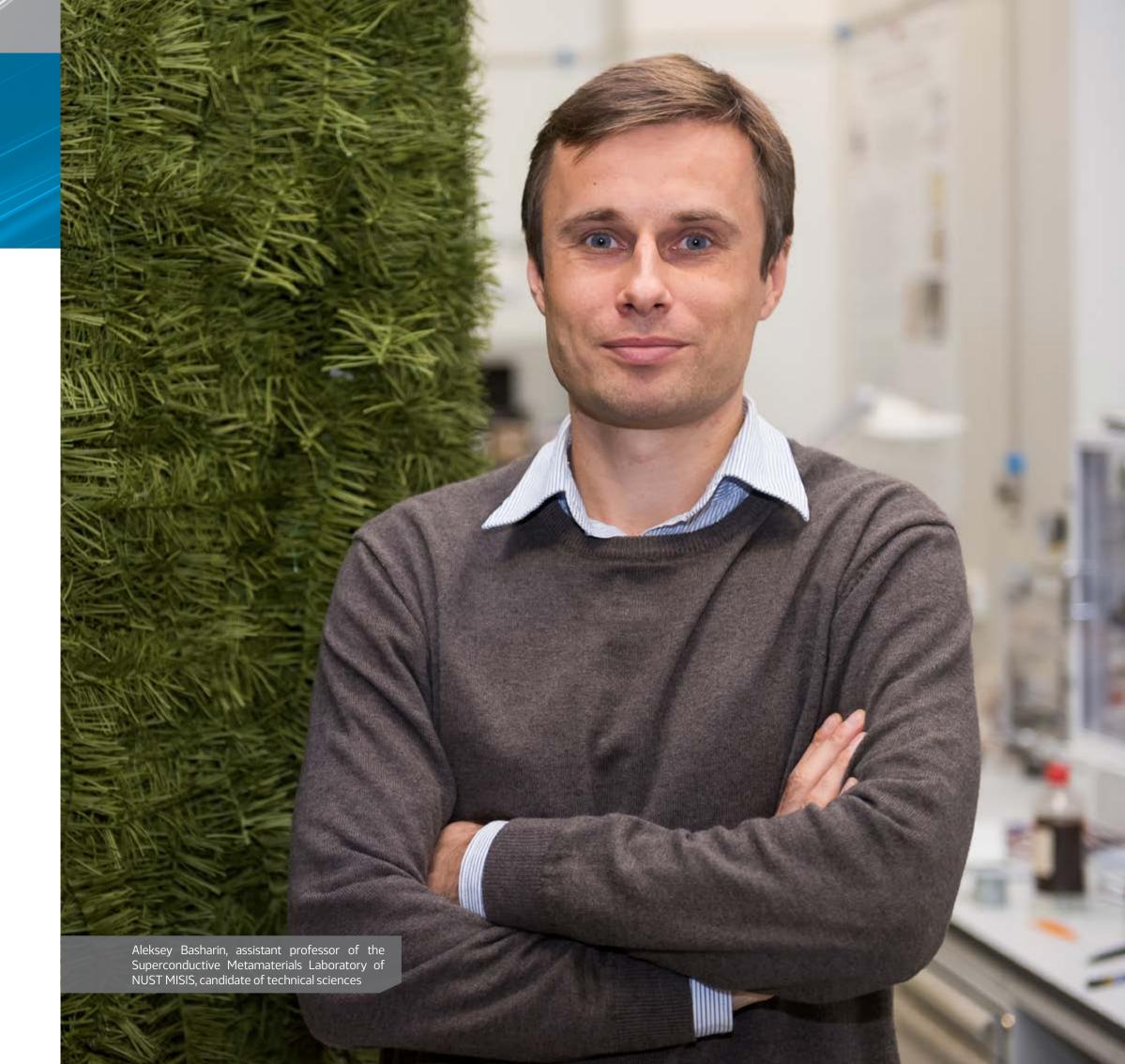
#### 17 July

For the second consecutive year, NUST MISIS became a participant of the Global Ranking of Academic Subjects (ARWU). In 2018, the University was included in the TOP-100 best universities globally in the Metallurgical Engineering and Mining & Mineral Engineering categories.

#### 24 July

NUST MISIS participated in arranging proceedings of the first Russian educational program of intensive preparation of prospective staff for the digital economics of the future entitled "Island 10-21".





# AUGUST

#### 15 August

According to the results of the admission campaign of NUST MISIS for 2018, the average USE grade of entrants increased up to 82.8. The level of competence among entrance improved significantly: 40 % freshers have diplomas cum laude, each third entrant has the amount of USE grades of 250 and higher. The number of winners and prize winners of various Olympics activities increased by 50%.

#### 22 August

The "Materials and Technologies" summer school of NUST MISIS was attended by students from China and India interested in materials science, inorganic and physical chemistry. During the summer school, students got familiar with educational programs in English, examined technologies of digital design, solar energy, biomaterials and IT.

#### 30 August

NUST MISIS participated in the international "City for Education" forum that became one of the key events of Moscow in the educational sphere.

#### 16 August

24 August

NUST MISIS entered the list of 12 Russian universities included in the global Academic Ranking of World Universities ARWU-2018. Having for the first time become the participant of the global ARWU rankings, the University took its position in the 801+ group.

During the international "Army-2018" military and

technology forum that combined representatives

of 1,500 enterprises from 18 countries worldwide,

NUST MISIS employees presented over 30 scientific and technical development and participated in the

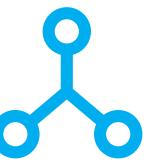
"From Fundamental Science to the Army" conference.

#### 17 August

A group of scientists from NUST MISIS and a number of research centers of Germany comprising professor of the Laboratory of Biomedicine Nanomaterias of NUST MISIS doctor Ulf Wiedwald developed the system to increase the quality of diagnosing cancer diseases with the help of intravenous injections, such as in conducting MRT.

#### 29 August

Over 700 young people who entered the first year of studies with NUST MISIS participated in the adaptation "Dive" project. A comprehensive 3-day agenda allowed finding answers to the questions about the future educational institution, joining students and building up communications with each other.





## SEPTEMBER

#### 1 September

NUST MISIS performed the first admission of students to the master's degree program entitled "Strategic Management of International Mineral and Resource Companies" implemented jointly with MGIMO and the inter-university educational center for preparing managers for mining industries of Russia.

#### 3 September

Aleksandr Komissarov, head of the Research Laboratory of Hybrid Nanostructured Materials at NUST MISIS, became the laureate of the annual "Metals Engineer of the Year" award in the metals chemistry nomination.

#### 8-9 September

NUST MISIS supported by the "Garage" Museum of Contemporary Art and the Gorky Park conducted the largest international festival of advanced technologies and traditional crafts Maker Faire Moscow 2018 that gathered more than 70 thousand visitors and international maker movement stars.

#### 11 September

The University confirmed its positions in the QS Graduate Employability Rankings by entering the 301+ group. This year, the University ran 37thglobally and 2ndin Russia in the "Organization of Interaction between Employers and Students" nomination by gaining 95.5 points out of 100.

#### 15 September

Large-scale "Meeting of Generations" fest gathered NUST MISIS friends and partners, scientists and lecturers, students, post-graduates and graduates of various years of graduation in the Gorky Park. A remarkable agenda of the fest contained a fancydress parade of students, concerts, as well as a comprehensive program in the University's pavilion and at various grounds of the Gorky Park.

#### 17-21 September

NUST MISIS took an active part in preparing for, and conducting the 29thinternational congress for mineral processing. Our country hosted that event only once, in 1968. Half a century later, the congress was for the first time organized in the Russian Federation with the participation of NUST MISIS.

#### 20 September

As part of the Year of Volunteer announced by the Russian President, over 1,500 students participated in more than 300 university-based, municipal and federal activities as volunteers. For its active involvement in the volunteer movement and the "Immortal Regiment" campaign, the University obtained a note of thanks from President Putin.





## OCTOBER

#### 9 October

As part of the "Dialog on Equal Terms" discussion club, head of Rosmolodezh Aleksandr Bugaev had a meeting with NUST MISIS students to discuss the current issues related to various aspects of student life.

#### 11 October

NUST MISUS and the leading IT company Naumen opened the center for big data examination. The project allows performing research studies, develop science-intensive solutions and implement educational programs of training experts in dealing with big data.

#### 17 October

NUST MISIS repeatedly demonstrated its strengthened positions with QS BRICS by moving up the rankings by 44 points. In 2018, the University came 54th, thus improving its performance for almost all key indicators.

#### 18 October

As part of strengthening cooperation with the Republic of Uzbekistan, NUST MISIS opened its branch in Almalyk. A decision of opening it was supported by the governments of both countries. In the new NUST MISIS branch that became the sixth in total and the second one abroad, students in IT and mining major are educated.

#### 31 October

NUST MISIS strengthened its positions in the international U.S. News Best Global Universities rankings by moving 98 points up in the global rankings (964thplace) and 29 points up in the rankings by subject in the Materials Science category (191stplace). The University strengthened its positions in the rankings by subject for physics by moving 88 points up and taking the 446th place.

#### 26 October

The University celebrated a remarkable date – 70 years from establishing its faculty of physics and chemistry. The said faculty was established in the postwar period that was the time of creating Russia's "nuclear shield" and developing the atomic power sector. The faculty of physics and chemistry was succeeded by the College of New Materials and Nanotechnologies that still teaches experts in materials science with a profound knowledge of physics and chemistry.

#### 31 October

NUST MISIS had a formal opening of the NTI Center for Quantum Communications involving the leading scientists, experts of innovative enterprises specializing in quantum technologies, as well as representatives of the business community.

#### 31 October

For the fifth consecutive year, NUST MISIS demonstrated positive dynamics in the QS Emerging Europe&Central Asia rankings. According to the annual rankings, the University took the 52ndplace, thus moving 5 points up as compared to the previous year.





# 70-ЛЕТИЕ ФИЗИКО-ХИМИЧЕСКОГО ФАКУЛЬТЕТА



## NOVEMBER

#### 7 November

NUST MISIS held the XXV workshop and conference devoted to Project 5-100 whose participants discussed the most successful cases of the leading universities involved in the project and examined the opportunities of sharing such successful experience with all national universities.

#### 7-9 November

The University acted as a co-arranger of the first global summit in the area of scientific discoveries held jointly with international rating agency Times Higher Education. During the summit, the results of THE Subject Rankings 2019 were announced.

#### 9 November

Academic advisor of infrastructural project "High-Performing, Flexible, Photovoltaic, Tandem Devices based on Hybrid Perovskites" of NUST MISIS, professor Anvar Zakhidov was recognized the winner of the Scopus Awards Russia 2018 award arranged by Elsevier.

#### 13-16 November

NUST MISIS took an active part in a business and exhibition agenda of the XXIV International Industrial Exhibition "Metal-Expo 2018" that gathered 550 companies from 32 countries worldwide. As part of Metal-Expo 2018, NUST MISIS held a meeting of graduates entitled "My Alma Mater. University's Centenary".

#### 14 November

The scientific team of NUST MISIS led by professor Igor Abrikosov with the participation of peers from Germany, Sweden and the United States opened "impossible" modifications of silicon dioxide: coesite-IV and coesite-V. These are materials whose structure is an exception from the generally accepted rules of generating chemical bonds for inorganic materials.

#### 23 November

The "Open Rectorate" project came second in the all-Russian competition of student projects in improving the quality of education "Our Choice is Learning".

#### 29 November

In the context of the Day of Technology Entrepreneurship, NUST MISIS students has a meeting with Chairman of the Management Board of RUSNANO Anatoly Chubais, learnt from him about ways of developing the innovative economic and discussed the most recent global technological trends.





# DECEMBER

#### 10 December

Scientists of the Laboratory of Hybrid Additive Technologies of NUST MISIS offered an innovative methodology of additive printing of metals items of complex forms. The technology of selective laser smelting using the Russian 3D unit may be in demand in mechanical engineering, aviation and space industries.

#### 12 December

The College of Economics & Industrial Management of NUST MISIS was assigned the name of professor Vladimir Andreevich Roman, in commemoration of the founder of the college, a world-known scientist and a remarkable educator, graduate and lecturer at NUST MISIS.

#### 29 December

Vladimir Sidorov, Director of Information and Analytical Center "New Energy, participates in the "Christmas Lectures" project at NUST MISIS

#### 10 December

Inventions of University's scientists presented at the largest international exhibitions of inventions and science-intensive developments IIDC-2018 in Hong Kong and SIIF-2018 in Soul obtained six gold and silver medals, as well as special prizes from international organizations in charge of supporting innovators all over the world.

#### 13 December

More than 80 scientists from Russia, Germany, Finland, China and CIS states participated in the first international practical academic conference organized by the Almalyk branch of NUST MISIS with the support from its business partners.

#### 12-14 December

The NUST MISIS delegation took part in the all-Russian "ProeKTOriYA" forum held with the participation of the country's president. The University prepared a busy program for high school students and teachers: lectures and practical lessons on technologies of materials, a master class for teachers devoted to the best practices of project-based learning and online learning technologies were held.

#### 17 December

NUST MISUS confirmed its leading positions by taking the 4th place in the Rankings of Popularity of Universities in Russia-2018 presented by the Social Navigator of the Ministry of Foreign Affairs "Russia Today". The University obtained high scores in the "Efficiency of Working with the Business Community" and "Quality of Personnel Training" categories.



