

Flagship University

Novosibirsk State Technical University



НГТУ

Bataev Anatoliy Andreevich

Doctor of Science, Professor
Rector





Founded in 1950

11800

Total number of students

56

Bachelors' and Specialists' programs

37

Masters' programs

60

Graduates' programs

16

Programs with Professional and Public accreditation

25

Educational modules meeting the needs of the region

28

Programs engaging representatives of local businesses

930

Students majoring in project-oriented programs

32

Team residents of the University business incubators and technoparks

60

Laboratories and educational and research centers

8+8

Teaching blocks and hostels

14

Faculties and Institutes



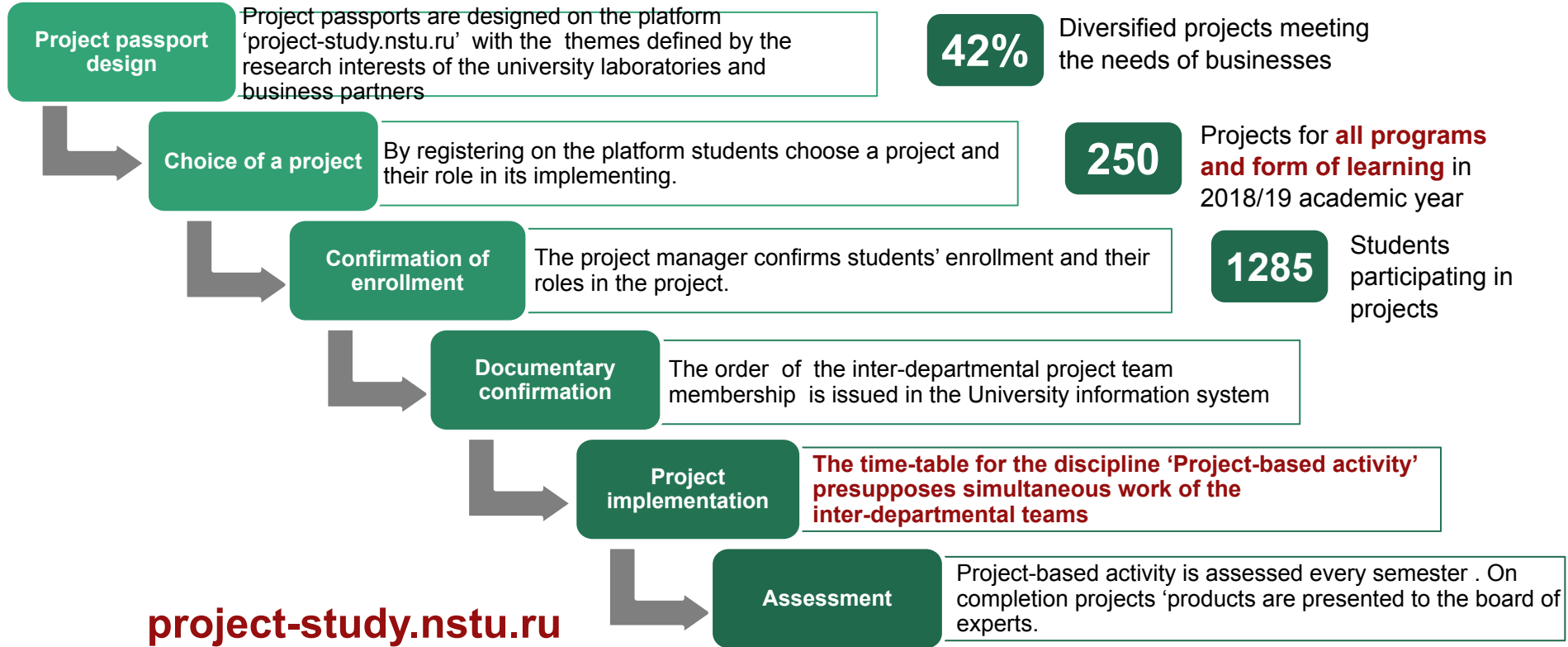
NSTU is the **first** among flagship universities in QS Graduate Employability Rankings



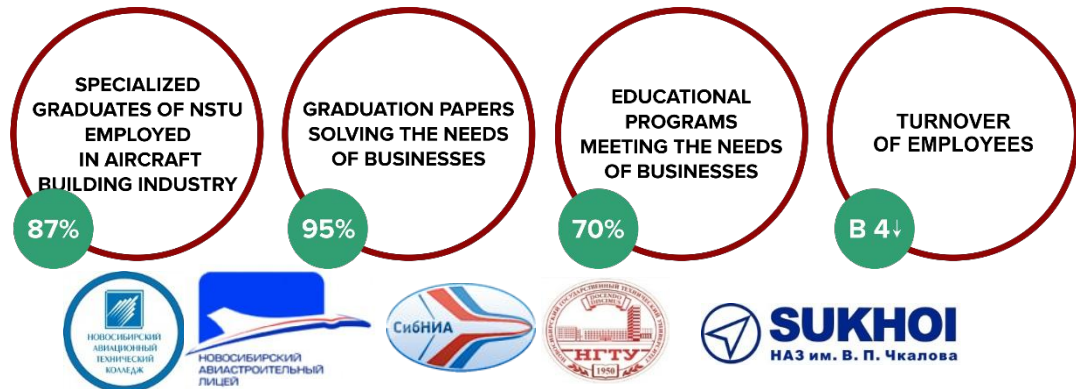
- Faculty of Automation and Computer Engineering
- Aircraft Faculty
- Faculty of Mechanical Engineering and Technology
- Faculty of Mechatronics and Automation
- Faculty of Applied Mathematics and Computer Science
- Faculty of Radio Engineering and Electronics
- Faculty of Physical Engineering
- Faculty of Power Engineering
- Faculty of Business Administration
- Faculty of the Humanities
- Institute of Distance Learning
- Institute of Social Technologies and Rehabilitation
- Institute of Extended Professional Education
- Faculty of In-Service Training and Retraining
- Faculty for Learning in Retirement



Introduction of the project-based courses into the bachelor and specialists' curricula



Research and Production Educational Consortium in Aircraft Engineering



Training of specialists for the Defense Industry Complex

315
16

Specialists graduated since 2014

Partner Companies

Meeting the needs of other fields of industry

Информационный
Центр
по Атомной
Энергии



Regional Atomic Energy
Information Center (AEIC)



Students Design Bureau
'Robotics and Artificial Intelligence'

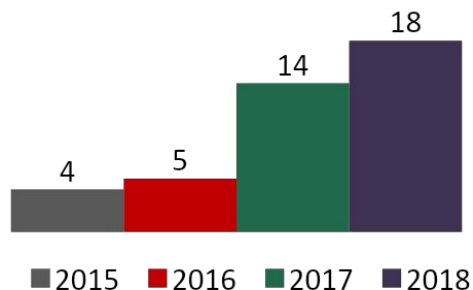
10 000 Students of general and secondary education per year

1 500 Students of general and secondary education per year

Within the project «Academgorodok 2.0»

4 NSTU-SB of RAS joint Master's programs to train specialists for the Siberian ring source of photons 'SKIF'

Graduates of other universities enrolled into NSTU programs, %



Within the project «Digital Educational Environment of the Novosibirsk Region»

Digital technologies in state and municipal management

Regional Informatization department

Information Systems Cyber Security

Online-Based Program 'Digital economy'

NSTU, SibSUTI, NSUEM, Regional Ministry of Education, Regional Informatization department

Online-Based Program 'Methods and techniques for big data processing'

NSU, NSTU, SibSUTI, IIS of SB of RAS, Regional Ministry of Education, 'ARIS' agency, 'Vympelkom' company

The Program of Personnel Retraining

Development of hardware components for quantum electronics, low-temperature and microwave electronics for quantum systems of information processing

Technology for producing ceramics and ceramic-based composite materials for medical purposes

Development of high-tech process for producing uninterruptable power supply and energy storage systems

Testing and computational modal analysis of large-size convertible constructions for air and space navigation

Radar impulse and radar interference simulator



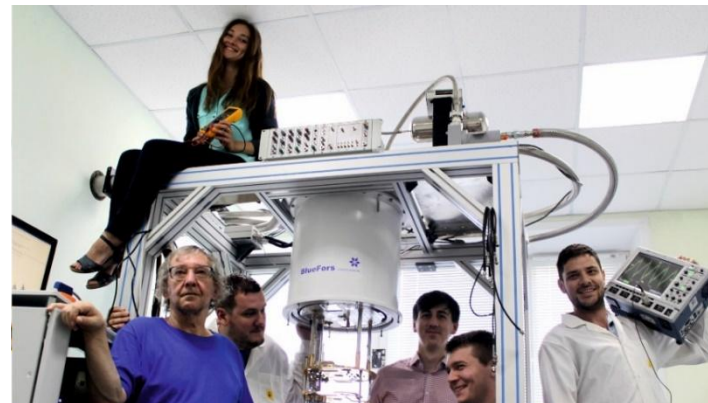
In-situ research into fast structural transformation in metal alloys in the process of friction by using synchrotron microdiffractometry

Power efficient electric motors with unconventional windings and permanent magnet

System and application software for calculating electromagnetic, thermal and stress fields

Pilot project on isolated power systems on the basis of distributed low energy generation and their connection to existing electric networks

Development of spacecraft power conditioning units and dual-purpose mechatronic modules



SMART AUTOMATION OF HANDS-OFF LOCAL LOW GENERATION (up to 25 MW) POWER SUPPLY SYSTEM

Breakthrough technical solution unparalleled nor only in Russia, but in the world!

Demands of the region: projects «Smart municipal power industry»
«Smart distributed energy generation»

Reliable and cost-effective power supply of remote objects (plants, residential complexes)

Incorporation of small size power stations into isolated power supply systems

Transmission of energy surplus into main power supply system

Regional partner



Технет
Национальная технологическая инициатива

TORNADO
MODULAR SYSTEMS

Company «Modular Systems Tornado»



Residential area «Berezoviy»



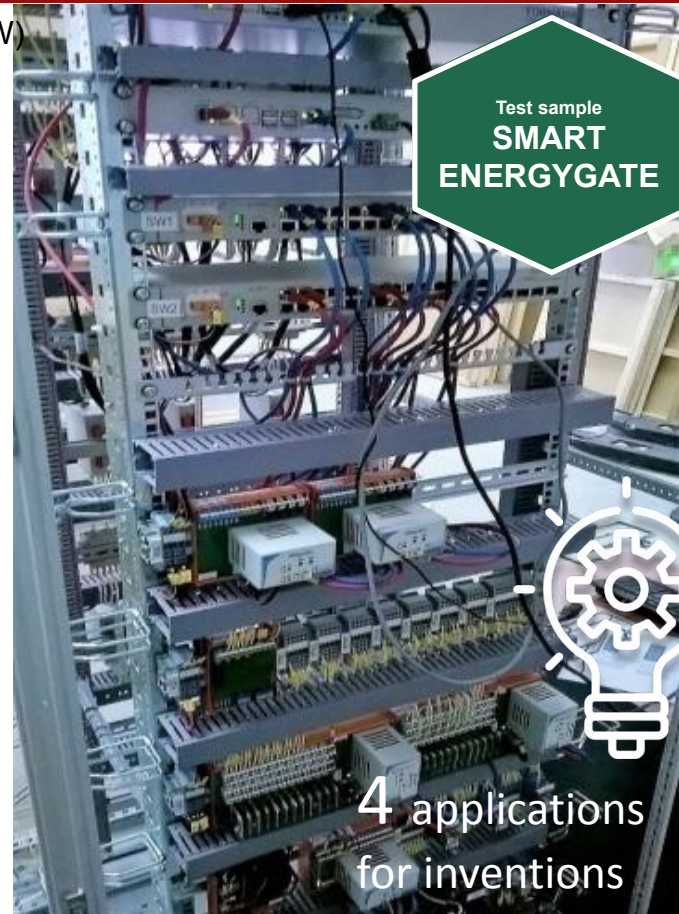
National medical research center named after E.N. Meshalkin

Market Growth Outlook

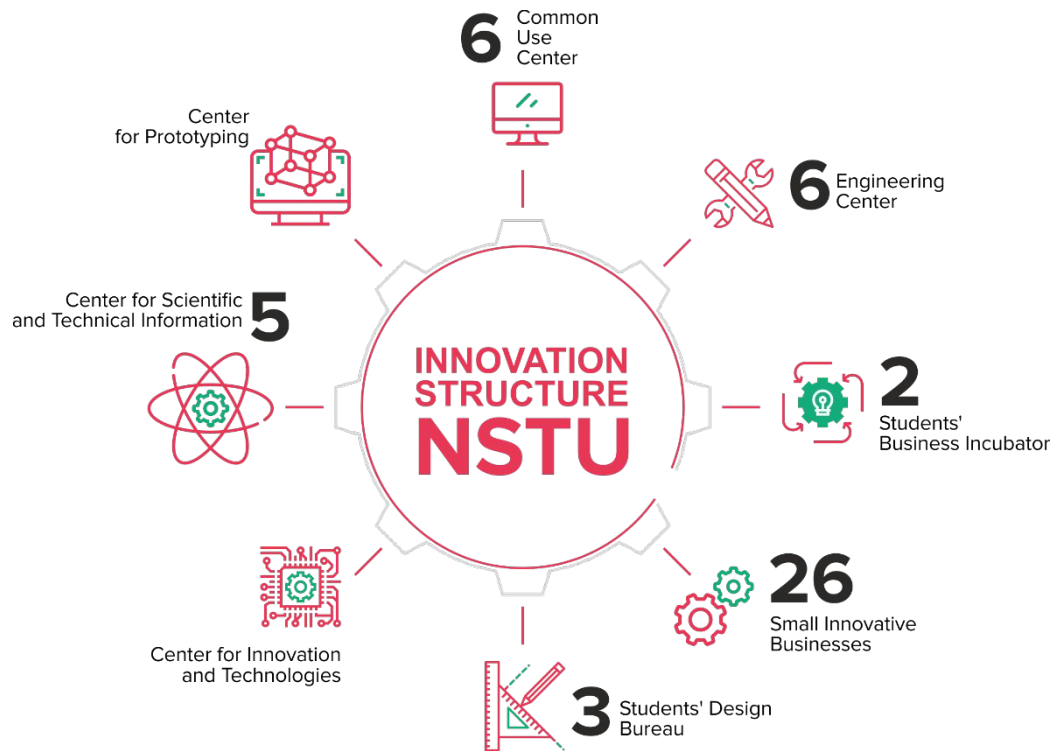
Russia; export to BRICS and South-East Asian countries

The amount of investment into integrated construction on target markets by 2035 \approx \$270 млрд; the share of Smart EnergyGate devices \approx 10%

Test sample
SMART ENERGYGATE



4 applications
for inventions



The Networking Inter-University Business Incubator opened at NSTU



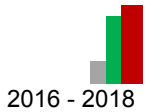
sbigarage.ru



vk.com/garagenstu



Participants of the project «Innovations management»



Participants of events with successful start-upers and entrepreneurs (Zvonobot, Pharmznanie, and others)



Trend scouting through Big Data, IoT, Machine learning, etc.



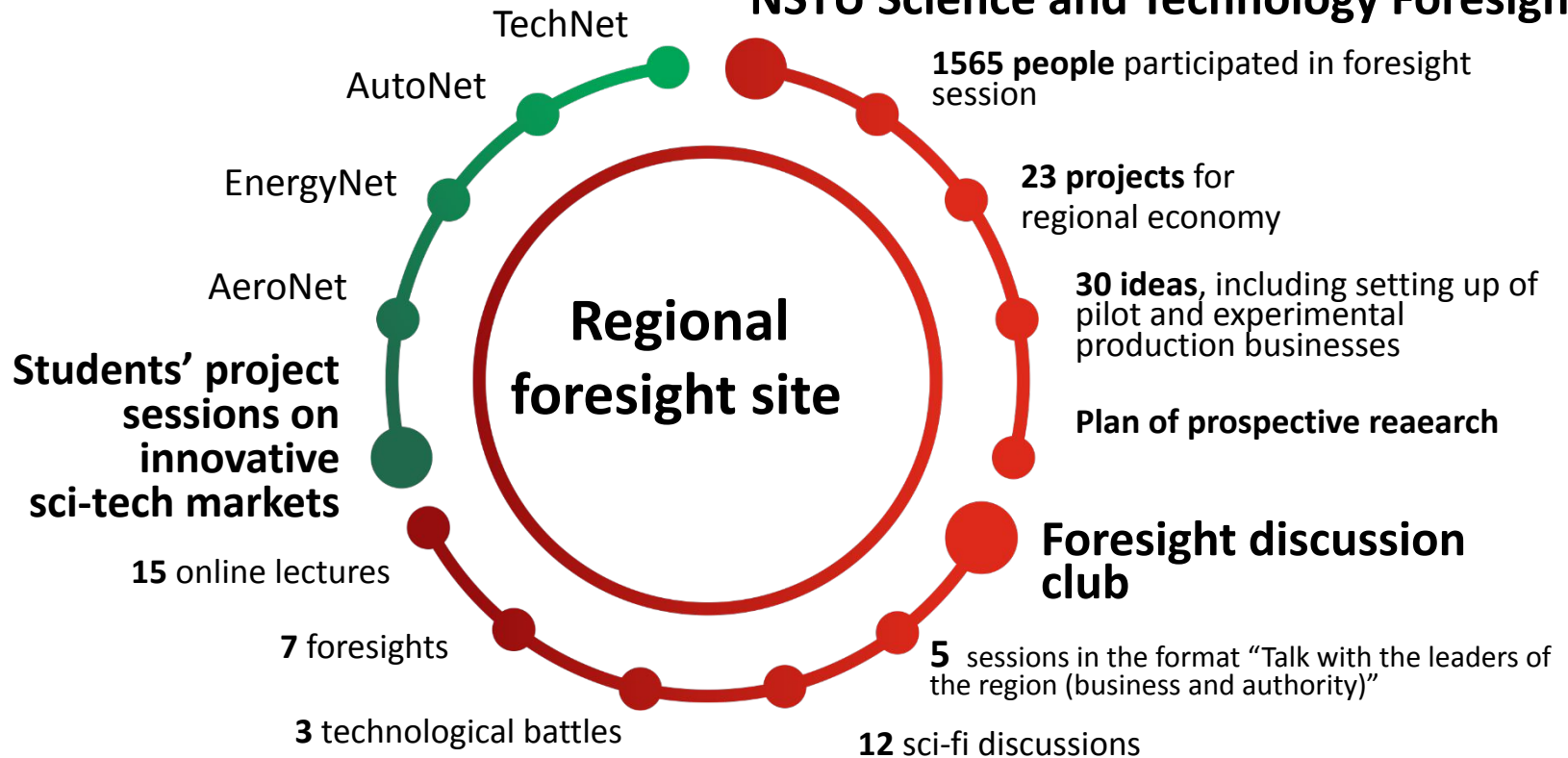
project team residents



Sudents' successful start-ups:
CareWay (in 8 cities, revenue 7 mln roubles in 2017)
Alpha Pay 24 (2017 - revenue 26 mln roubles)
Cyberschool (2018 – revenue 0,2 mln roubles)



NSTU Science and Technology Foresight



57 contracts for research

Earned money 420 mln rbl

1300 employer-sponsored students



Правительство
Новосибирской области



Мэрия
Новосибирска



ФЕДЕРАЛЬНОЕ ГОСУДАРСТВЕННОЕ
ВОЗДУШНОЕ УЧРЕЖДЕНИЕ НАУКИ
ИНСТИТУТ КАТАЛИЗА
ИМ. Г.К. БОРЕСКОВА
СИБИРСКОГО ОТДЕЛЕНИЯ РАН



Федеральное государственное
образовательное учреждение
«Институт лазерной физики»
Сибирского отделения
Российской академии наук



ИНСТИТУТ ФИЗИКИ ПОЛУПРОВОДНИКОВ
ИМ. А.В. ФРАНОВА

Учреждения науки, входящие в состав СО РАН

Компании с государственным участием



НАЗ им. В. П. Чкалова



ОКСИД



ООО «ЭНЕРГОПРОМ»



Швабе



НПЗ



ТАРКОСАЛЕНЕФТЕГАЗ



ОАО «Новосибирский
инструментальный
завод»

Восточная
Техника



РАДИО И МИКРОЭЛЕКТРОНИКА



ГРУППА
ЭНЕРГОПРОМ

Ча



ФОСАГРО



HUAWEI



NSTU's Laboratory «Factory of Processes» – center for lean manufacturing

Key partners:

REGIONAL CENTER
for developing competences in the sphere of labor productivity - «Agency of Investment Development of Novosibirsk region»



New programs and trainings

8

20

Specialists from businesses

Number of students

600

30

Trainers

- ✓ Novosibirsk Aircraft Production Association named after V.P. Chkalov (PJSC «Sukhoi»)
- ✓ Novosibirsk Aircraft Repair plant (State Corporation Rostec)
- ✓ Novosibirsk Chemical Concentrates plant (State Corporation Rosatom)
- ✓ NPO «ELSIB» OAO
- ✓ Scientific and Research Institute of Measurement Instrumentation – Novosibirsk Plant named after the Komintern (State Corporation Rostec)

NSTU aims to join

National project «Increase of labor productivity and employment efficiency». **Budget ~ 60 bln rbl**

Priority Program of Novosibirsk Region on increasing labor productivity and employment efficiency

NSTU is a member of the RF technical standardization committee TC 182 «Additive technologies»

NSTU is a regional representative of 'NANOCERTIFICA' for certifying nanotechnologists



JSC NEVZ-SOJUZ



Novosibirsk Traumatology and Orthopedics Institute named after Tzivjan Ya.L.

3D-PRINTER

Laser layer-by-layer sintering of metal materials

- ✓ constructive elements developed
- ✓ mathematical software developed
- ✓ elements for moving over the table designed
- ✓ the system of automation and uninterruptable power supply developed

3D- PRINTER

Cathode-ray

- 🎯 development of the technology for producing **metal** filaments
- 🎯 assurance of the mechanical properties of the products



Number of experts

9

The Program of the Economy Reindustrialization of Novosibirsk region

8

The Project «Academgorodok 2.0» (emitting source of photons 'SKIF')

15

Research and Production Cluster 'Naukopolis'

7

The Strategy of Social and Economic Development of Novosibirsk region- 2030

48

Federal and regional research awards

International projects

- International summer school «Control and automation in electric devices and systems» (Italy, Russia)
- 9th DAAD International summer school on material studies GEM–2018 (Germany, Belorussia, Russia)
- International summer school on information, computer and educational technologies (Germany, Mongolia, Russia)
- Summer school for Chinese specialists «Water resources management» (China, Russia)

International projects

- ERASMUS +, Capacity Building in Higher Education “New strategies for teaching engineers with visual simulation environment and open learning platforms“
- ERASMUS+ Program: KA 1-Mobility for learners and staff-Higher education students and staff mobility
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- «I see you- Self-learning Robot Assistant System» в рамках проекта «ERA.Net RUS Plus Call 2017»
- Грант на проект ERASMUS +, Capacity Building in Higher Education «SMARTCITY: Innovative Approach Towards a Master Program on Smart Cities Technologies». The consortium of universities: Bulgaria, Latvia, Russia, Kazakhstan, Mongolia

Online education programs with Czeck Republic, Poland, Italy, Finland, Kazakhstan and other countries

The 7th in RF in the number of international students

NSTU is a member of the consortium ‘Export of Russian Education’

Institute of Social Technologies and Rehabilitation

Projects:

development and implementation of the model of teaching and individual social and psychological support for the students with visual and hearing disabilities studying for a Bachelor's degree (within the RF program «Barrier Free Environment», 2011–2020, grant of 45 mln rbl)

Career-guidance
for pupils with
disabilities

Special needs
schools- partners



Assistive support for
disabled students

Sign translation
service

Center for
adaptive
physical culture

Social and
psychological
support for disabled
students

Post-graduate
support for
disabled students



Resource center for educating people with disabilities in Siberian universities 2017-2018

367 consultations

210 University teachers trained in
inclusive education

17 Agreements with universities

6 Packages of educational materials

Unique character of NSTU

25000

m² – sport and culture facilities



since **2017**
Certificate of conformance for international standard sport facilities

Since **2018** : main venue in Siberian federal region for organizing **chess competitions for children** (Grand Chess Master P. Maletin's school; The Cup of the Governor of Novosibirsk region)

Regional center for training chess teachers (36 school teachers trained in 2018)

New events

Municipal Inter-universities Olympiad (**4000 participants, 15 universities**)

Regional phase of Russia's National Chess Competition (**300 participants**)

XXIII National Karate Competition (**400 participants**)

Project «**Your Stage**» for the citizens of the region **1 000 participants**

Rock Festival 'Art Revolution' (**50 groups**)

All-Russia 'Autumn Marathon' for people of all ages (**500 participants** from schools and orphanages)



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