



# Novosibirsk State Technical University: information, statistics and mobility

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# THE MAP



# QUALITY OF STATE-FINANCED ADMISSION INTO STATE UNIVERSITIES

Rating	University	Grade point average EGE
1	Moscow Institute of Physics and Technology (MIPT)	90.4
2	Gubkin Russian State University of Oil and Gas, Moscow	77.6
3	Saint Petersburg National Research University of Information Technologies, Mechanics and Optics	75.9
4	National Research Nuclear Institute, Moscow	75.8
5	Bauman Moscow State Technical University	73.1
6	Moscow Institute of Electronics and Mathematics	72.7
7	Ufa State Petroleum Technological University	72.6
8	St.Petersburg State Polytechnical Institute	71.1
9	D. Mendeleev University of Chemical Technology of Russia, Moscow	70.7
10	Novosibirsk State Technical University	70.7
11	National Research University of Electronic Technology, Moscow	70.2
12	Moscow Technical University of Communications and Informatics	67.9
19	National Research Tomsk Polytechnic University	66.6
24	Siberian State University of Telecommunications and Information Sciences	65.5
30	Siberian Transport University, Novosibirsk	64.6
37	Tomsk State University of Control Systems and Radio electronics (TUSUR)	63.5

The grade point average of EGE (unified state exam) was calculated from grades of all the students who entered the Universities with EGE results, including those who won the entrance competition, students with benefits, contract students, but excluding students who won different scientific contests (Olympiads)

# MONITORING OF HEI IN RF - 2012

## Threshold values of indicators of Universities' effectiveness assessment

	Education	Research (thousand rubles)	International Activity	Financial and economic activity (thousand rubles)	Infrastructure
Russia	60 grades	50	0,7 %	1100	11 m <sup>2</sup>
Moscow	63 grades	95	3 %	1500	13 m <sup>2</sup>
St.-Petersburg	63 grades	48	3 %	1400	13 m <sup>2</sup>
<b>NSTU</b>	<b>70,7 grades</b>	<b>250</b>	<b>3,6 %</b>	<b>1214</b>	<b>12 m<sup>2</sup></b>

# STRATEGIC DEVELOPMENT PROGRAM (RESULTS OF 2012 )

## Parameters:

1.7. Increase of the part of international students from CIS countries: 117.89 %

1.8. Increase of the part of international students from other countries: 126.70%

3.7. Financing of university activity from financial sources of international organizations. 15.5 mln. rubles., 103.33%.

## Projects:

1.3.1. Enhancement of language competences.

1.3.2. Creation of engineering education network on the base of Russian and foreign partner Universities of NSTU.

3.1.1. Development of mobility of PhD students and young scholars.

# BRIEF HISTORY

- ❖ 1950: NSTU established as Novosibirsk Institute of Electrical Engineering (NIEE)
- ❖ Since 1980-s – Cooperation with the Siberian Branch of the Russian Academy of Sciences
- ❖ 1990: First JEP, Harbin Institute of Technology and NSTU, China
- ❖ 2002: NSTU was the 3d Russian University to sign Magna Charta Universitatum
- ❖ 2007: Competition among universities innovative projects for implementation of the innovation and education program “High Technologies”.
- ❖ 2008: First International Summer School Young researcher “Optical Lasers”
- ❖ 2011: Co-founder of Association “JEP and DDP” (Peoples’ Friendship University of Russia and Tomsk State University)
- ❖ 2011: Federal Grant “Development of Innovational Structure and Personnel Skills Development at NSTU”
- ❖ 2012: Federal Grant for support of University Strategic Development Program



Выступление ректора Новосибирского Государственного Технического Университета профессора А.С.Возвращения на церемонии подписании Болонской Декларации.  
18 сентября 2002 года.



# NSTU TODAY

- ❖ 16,500 student (400 PhD, 800 MS) 1400 lecturers, 200 prof., 600 assoc. prof., 350 guest and part-time faculty members
- ❖ 1,773 foreign students from 28 countries
- ❖ 11 faculties (Engineering, Business, Humanities, Law), 4 branches, 8 study buildings and dormitories;
- ❖ Polyclinic, sports and fitness center, Culture center, 2 tourists and recreation camps (in the Altay mountains)
- ❖ Scientific library, Institution of Social Rehabilitation for disabled students, Institute of distance learning, Institute of additional professional education
- ❖ Student's research center and Business incubators, Innovative Technology Centre; 35 Small - Medium Sized Co.
- ❖ Public faculty (for elderly people ), part-time faculty
- ❖ European Diploma Supplement since 2005
- ❖ 29 Joint Scientific Educational labs: Germany, Austria, UK, Sweden...
- ❖ International memberships:  
IAPU, EAU, IEEE, iNEER, UICEE, USOC, ASRTU...



# ERASMUS PROJECTS

- ❖ «TRIPLE I: Integration, Interaction and Institutions» (2011-2015)
- ❖ «AURORA: Towards Modern and Innovative Higher Education» (2012-2016)
- ❖ LLP: Erasmus Jean Monnet Programme «Enhancing Knowledge and Increasing Social Potential: Jean Monnet Module on European Integration for Handicapped Students» (2011-2013)
- ❖ «FASTQUAD: Facilitating students mobility's service including quality insurance dimension» (implemented in 2007 – 2010)



# TEMPUS PROJECTS (CURRENT)

- ❖ «EU-PC Double Degree Master Program in Automation/Mechatronics (MPAM)» (2011 - 2014)
- ❖ «PhD Education in Energy Efficient Electro technologies at Russian Universities» (2010-2013)
- ❖ «Chemical Engineering: Curricula Development and International Recognition» (2009 – 2012)

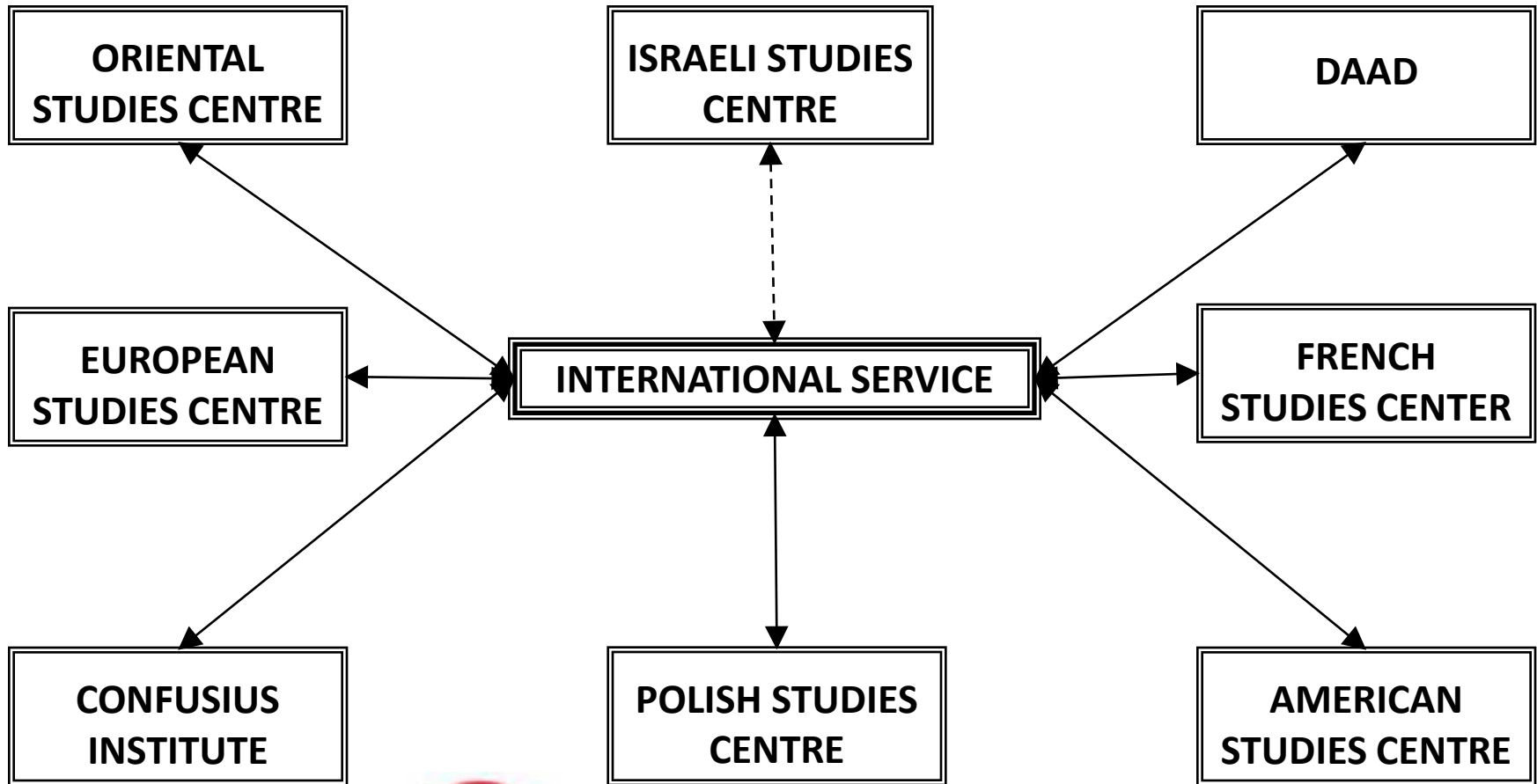
# INTERNATIONAL STUDENTS

- ❖ 16500 - Total number of students
- ❖ 1773 - Total number of international students (11%)
- ❖ 27 - Russian language courses
- ❖ 25 - Preparatory courses
- ❖ 1257 – BSc
- ❖ 59 – MSc
- ❖ 387 - Specialist's degree
- ❖ 18 – PhD
- ❖ 24 - Foreign teachers
  
- ❖ COUNTRIES:



Korea, China, Nigeria, Ghana, UK, USA, Brazil, Cuba, Vietnam, Mongolia, Egypt, Iraq, Japan, Poland, France, Germany, Switzerland, Lithuania, Azerbaijan, Armenia, Belorussia, Kazakhstan, Kirgizstan, Moldova, Tajikistan, Turkmenistan, Uzbekistan, Ukraine

# MULTI-LINGUAL ENVIRONMENT



# SCIENTIFIC AND EDUCATIONAL CENTERS AND LABORATORIES IN COOPERATION WITH HIGH-TECH FOREIGN COMPANIES



DMG



Siemens



ABB



Consistent Software®

Kjellberg®  
FINSTERWALDE

AEG

# FACULTIES

- ❖ Automation and Computer Engineering
- ❖ Business
- ❖ Humanities
- ❖ Aircraft Engineering
- ❖ Mechanical Engineering
- ❖ Radio Engineering and Electronics
- ❖ Physical Engineering
- ❖ Applied Mathematics and Computer Science
- ❖ Mechatronics and Automation
- ❖ Power Engineering
- ❖ Law

# INDUSTRY - NSTU - REGION

## Clusters in Novosibirsk region

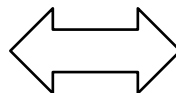
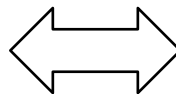
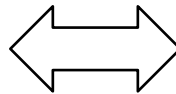
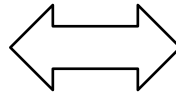
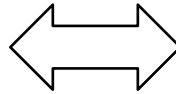
Information and bioengineering

Microelectronics

Power electronics and electrical engineering

Modern ceramic materials and nanotechnologies

Autonomous power sources



## Industry + NSTU

Applied Math. and Informatics, Automation and Computer Eng.

Physical Engineering

Radio Electronics and Physics

Mechanical Engineering

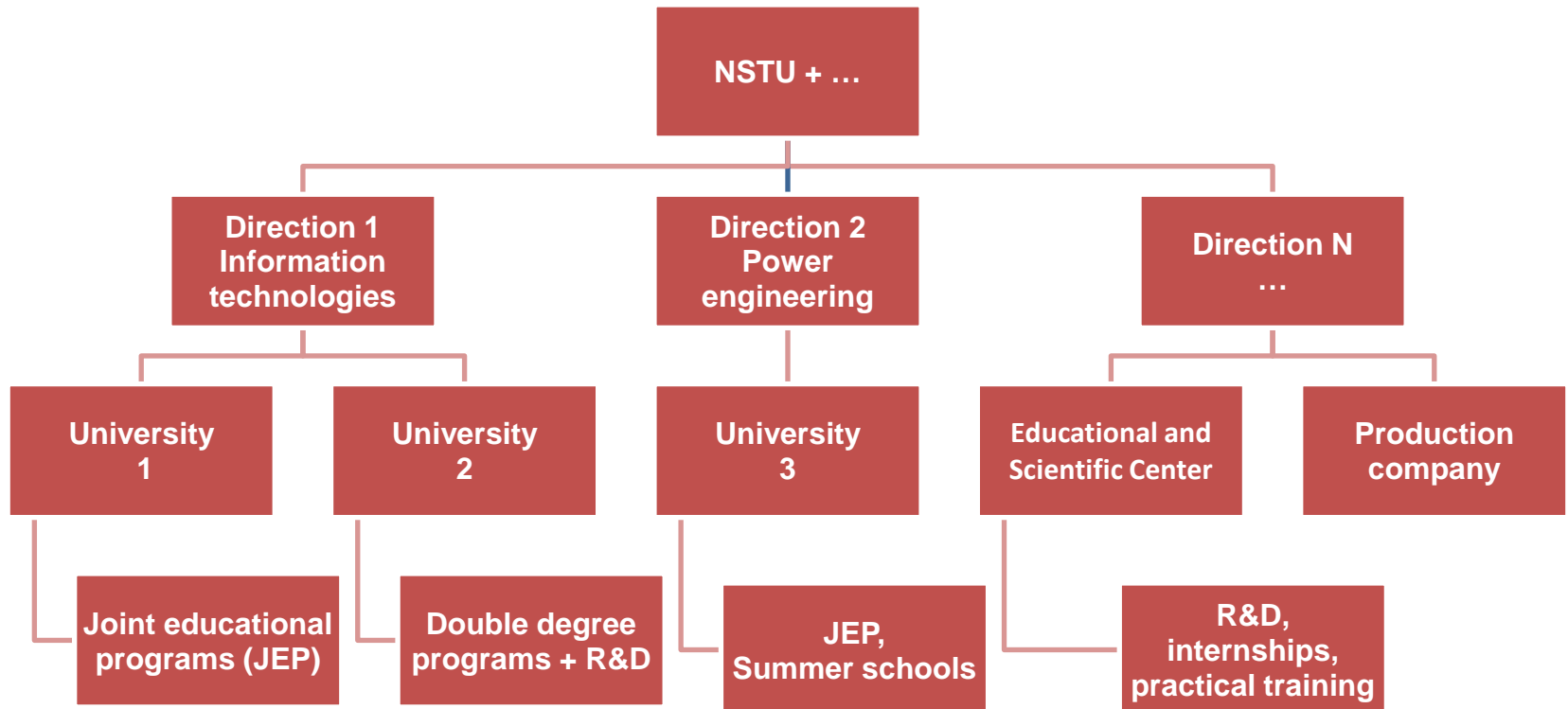
Mechatronics and Automation

**NSTU**

# The network structure of engineering education within international cooperation

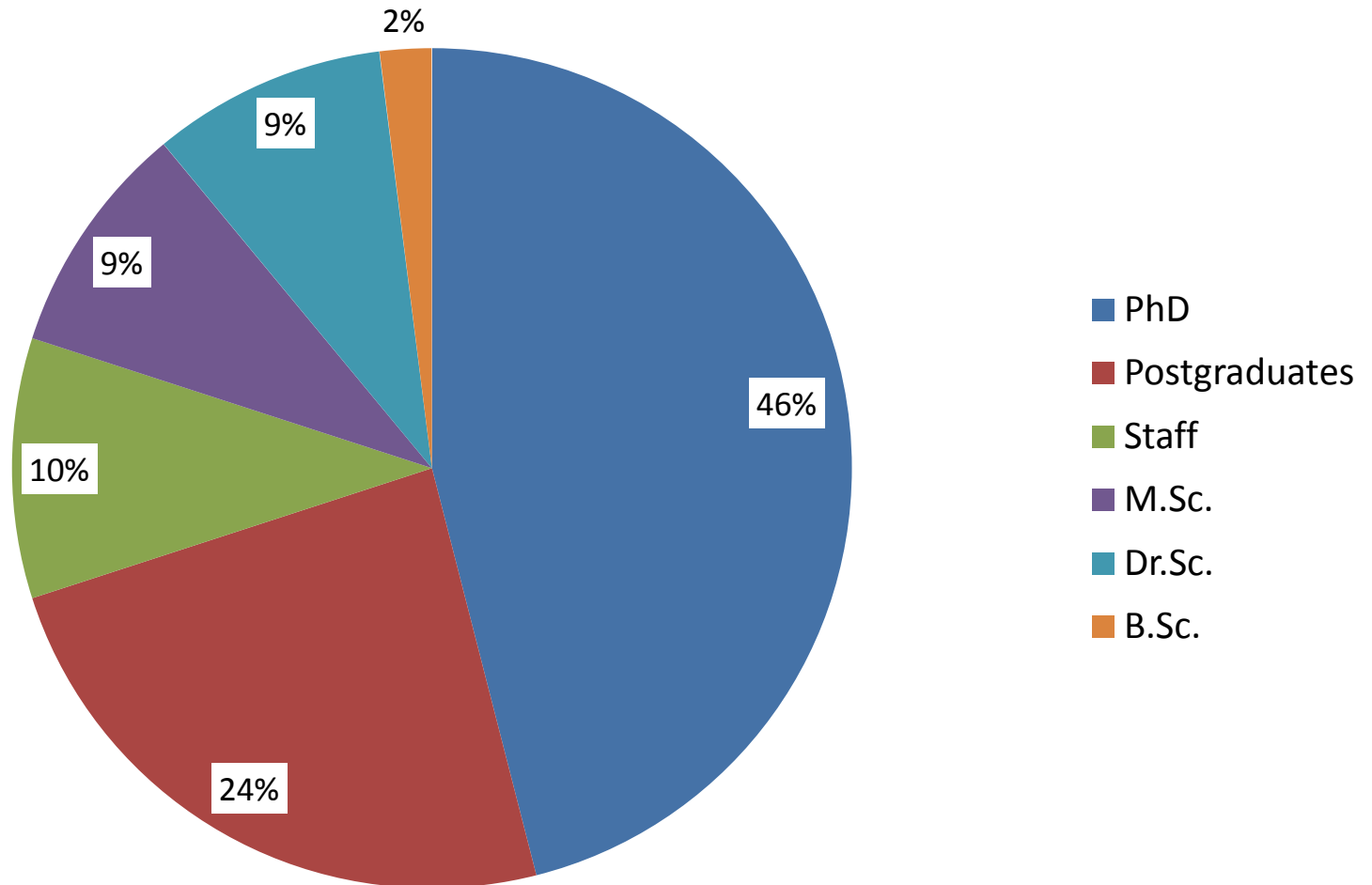
1. Analysis of creation of networking structures in science and education (Erasmus Mundus, Tempus, University of Shanghai Organization of Cooperation, University of CIS countries etc.). in prospective directions and education markets.
2. Conception of network cooperation with partners from Europe, Russia, CIS countries and Asia has been developed.
3. Center for the Russian language and culture in Xi'an International Studies University (China), Technical University named after Academician Osimi (Dushanbe, Tajikistan) have been opened. Opening of such centers in Alma-Ata University of Power Engineering and Communication (Kazakhstan) and University of Siegen (Germany) has been negotiated.
4. 15 joint education programs are being developed.

# NETWORK UNIVERSITY CONCEPT

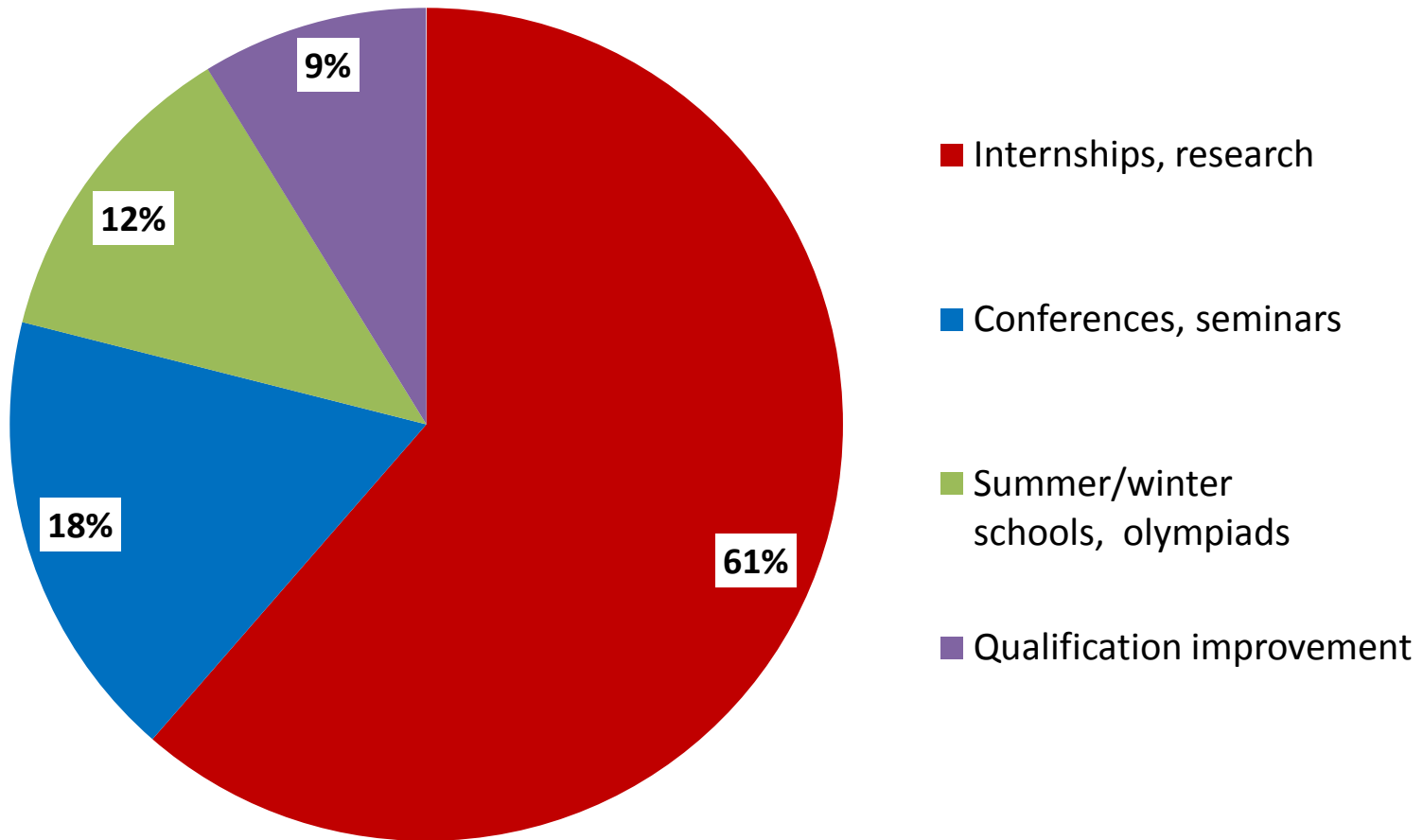




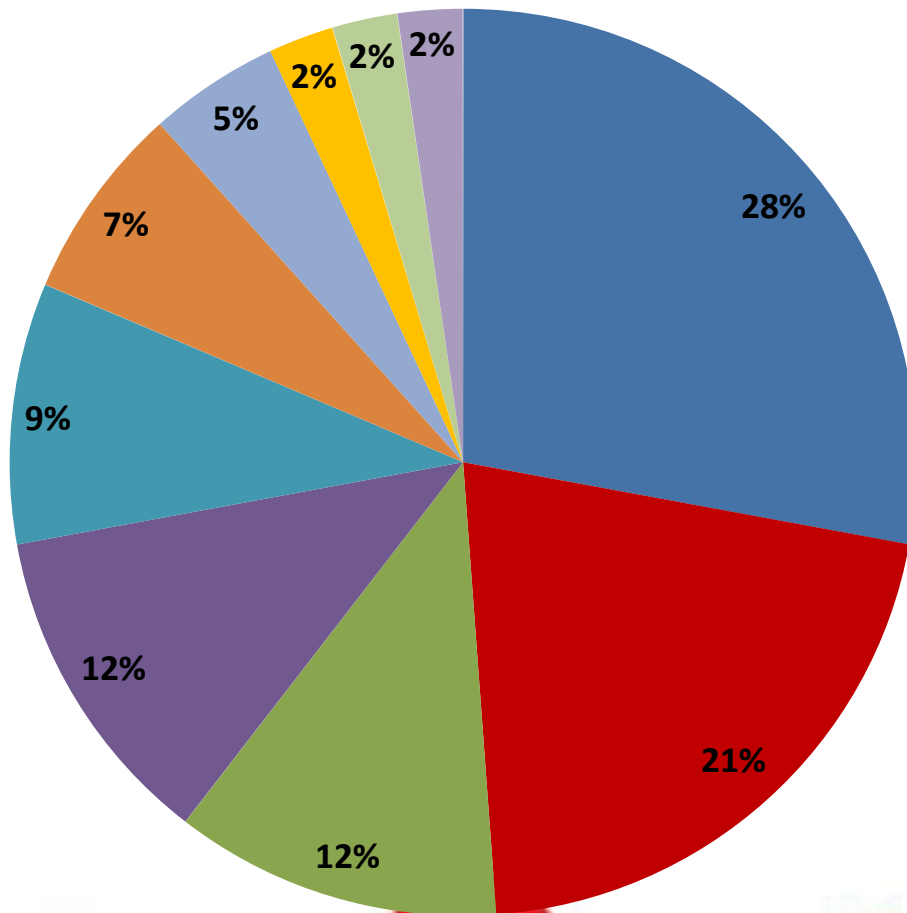
# STUDENTS AND ACADEMIC MOBILITY



# MOBILITY DISTRIBUTION BY DIRECTIONS

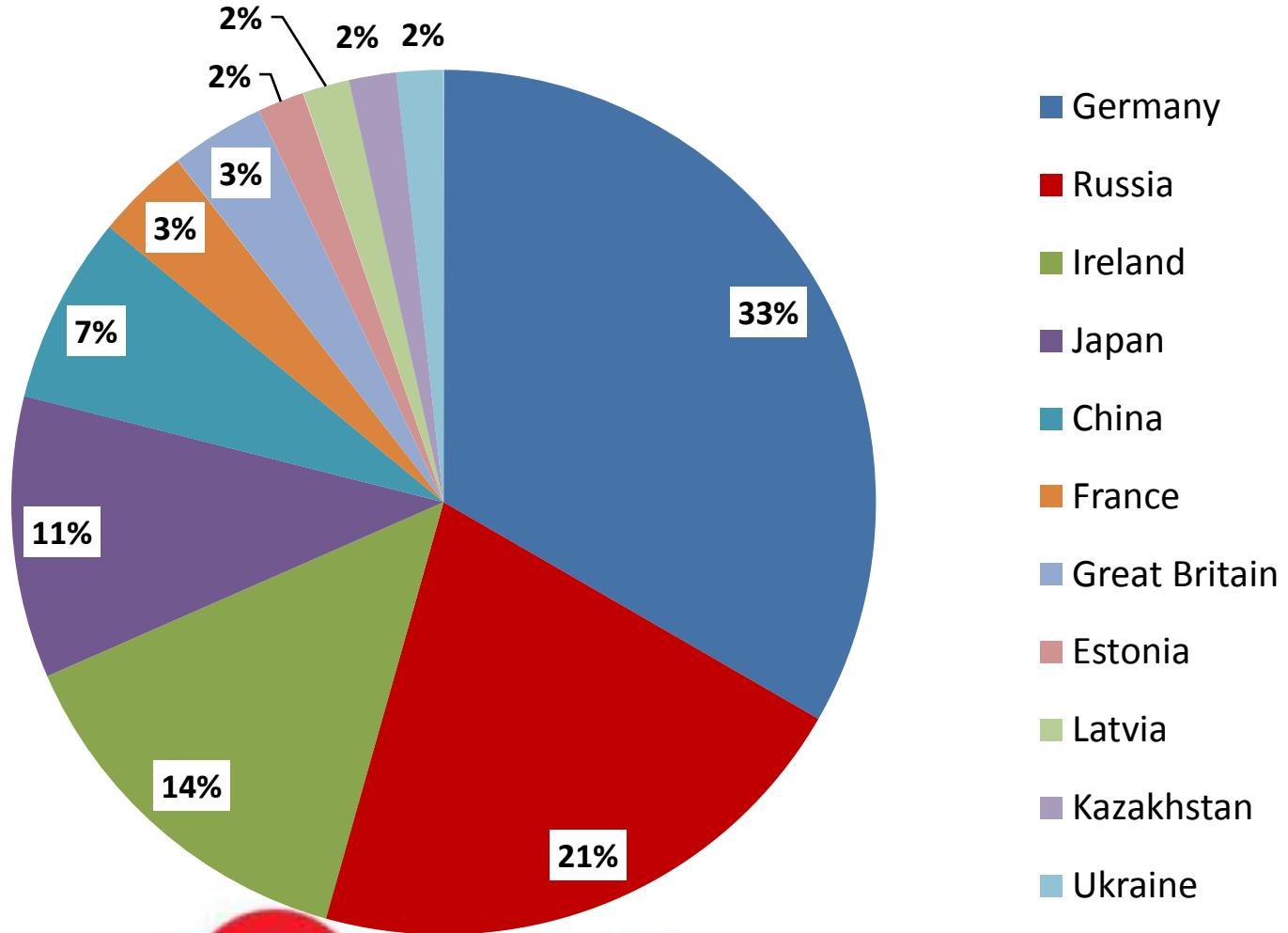


# MOBILITY DISTRIBUTION BY FACULTIES AND DEPARTMENTS



- Faculty of Mechanical Engineering and Technologies
- Faculty of Automation and Computer Engineering
- Faculty of Radio Engineering and Electronics
- Faculty of Humanities
- Faculty of Power Engineering
- Faculty of Mechatronics and Automation
- Aircraft Faculty
- Faculty of Physical Engineering
- Faculty of Business
- Faculty of Law

# MOBILITY DISTRIBUTION BY COUNTRIES



# THE PROBLEMS

- Lack of knowledge of foreign languages. English, Germany, Russian.
- Little scope of domestic grants from business community for scientific innovation developments.
- Very few interesting educational programs (this is mostly our problem).
- Lack of experience in international cooperation and, as a result, very few applications for scientific grants and very few educational grants.
- Students work in industry, agriculture, service.

# STRENGTHENING OF UNIVERSITY EDUCATIONAL AND SCIENTIFIC COOPERATION

- Joint international research team, scientific and techno parks, business incubators, regional clusters.
- Organizations interuniversity, regional companies and offices for technology transfer and development.
- Venture capital.
- Establishment of joint R&D found of Novosibirsk region and foreign country.
- Stimulation of professional networks creation.

# PROPOSALS

## University:

- network educational programs
- joint educational program
- joint researches centers
- two supervisors for a Ph.D. or M.S. student

## Enterprise, business:

- research orders to Russian universities to perform R&D projects

## Government

- organizing of tenders for fundamental and exploratory scientific research
- co-financing/participating in organization of ITC