

**TPU Mission:** To increase Russia's competitiveness providing advanced engineering education, generation of new knowledge, innovative ideas, creation of resource-efficient technologies through internationalization and integration of research and academic activities



# WORLD-CLASS UNIVERSITY IN TOMSK

**FOUNDED** in 1896 as Tomsk Technological Institute (TTI) of Practical Engineers. The Institute was opened in 1900 by the Russian Emperor Nicholas II

## CATEGORY:

National Research Tomsk Polytechnic University.  
Awarded in 2009

**WINNER OF THE COMPETITION** on Competitiveness  
Enhancement of the Leading Russian Universities among Global Leading  
Research and Education Centers – 2013



**6**  
Engineering  
Schools



**2**  
Research  
Schools



School of Core  
Engineering  
Education



School of Engineering  
Entrepreneurship



TPU  
Lyceum



Military-  
training  
center

2

## RANKINGS



601-800



Physical sciences  
401-500

Engineering and technology  
251-300

**Forbes**

9<sup>th</sup> in Russia  
1<sup>st</sup> among  
nonmetropolitan  
universities



387



Engineering &  
Technology  
282

- Engineering –  
Electrical & Electronic
- Engineering –  
Mechanical,  
Aeronautical &  
Manufacturing
- Physics & Astronomy



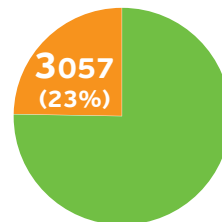
Mechanical engineering  
76-100



401-500



7<sup>th</sup> in Russia  
1<sup>st</sup> among  
nonmetropolitan  
universities



**13,433**  
students and  
post-graduates

international  
students from  
40 countries



**1,166**  
staff members



**170,000**  
graduates

## EDUCATIONAL TRAJECTORIES

■ BSc  
■ MSc  
■ PhD  
■ DSc



SCHOOL OF CORE ENGINEERING EDUCATION	RESEARCH SCHOOLS		Researchers - PhD-holders Publication activity
	HIGH ENERGY PHYSICS • integrated master and postgraduate programs • world level research	CHEMISTRY & APPLIED BIOMEDICAL SCIENCES	
	ENGINEERING SCHOOLS		New-generation engineers New technologies R&D revenue
	NON-DESTRUCTIVE TESTING & SECURITY EARTH SCIENCES & ENGINEERING • engineering master programs	ADVANCED MANUFACTURING TECHNOLOGIES ENERGY & POWER ENGINEERING • applied postgraduate programs	COMPUTER SCIENCE & ROBOTICS NUCLEAR SCIENCE & ENGINEERING • engineering solutions
	SCHOOL OF ENGINEERING ENTREPRENEURSHIP		Technostarters Income from business assets Income from enterprises Innovation environment
	• master degree in entrepreneurship • additional minor in entrepreneurship • fostering entrepreneurship		

3

## STUDY PROGRAMS



**2** bln rub. – R&D volume (2<sup>nd</sup> in Russia)

Publication activity – **2469** articles (1917 articles in WoS и Scopus journals, 552 in Q1 and Q2 journals)

**112** mln rub. – income from international contracts (1<sup>st</sup> in Russia)

## LEADER AMONG RUSSIAN UNIVERSITIES:

- in international patents
- in international contracts, programs and grants



### KEY AREAS OF EXPERTISE



NUCLEAR TECHNOLOGY



SMART ENERGY



HIGH ENERGY PHYSICS



NATURAL RESOURCES



SPACE MATERIALS  
SCIENCE



NON-DESTRUCTIVE  
TESTING AND SAFETY



PEOPLE AND TECHNOLOGY



CHEMISTRY AND  
BIOMEDICAL TECHNOLOGY



IT AND ROBOTICS



ADVANCED MANUFACTURING  
TECHNOLOGY

4

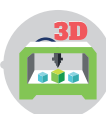
### BREAKTHROUGH R&D PROJECTS



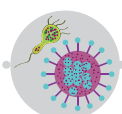
beryllium production  
technology – strategically  
valuable metal



land-shelf-  
atmosphere  
study in the  
Arctic



3D printing in  
space



antibacterial implants  
and materials for cell  
technology



nuclear technologies for  
customized theranostics  
of disseminated cancer  
types



commercial production of  
nanoceramics for high-tech  
sector




green chemistry – sustainable  
technologies and materials for  
chemical industry



treatment and disinfection  
of sewage and industrial  
waste waters



solid fuel conversion  
technology into  
green gas



TPU participates in experiments at the Large Hadron Collider and is the associated member of the European Organisation for Nuclear Research (CERN): NA64, RD51, LHCb, CMS, Compass

## INTERNATIONAL SCIENTIFIC COUNCIL

TPU **International Scientific Council** was established in 2014. The Council is chaired by a Nobel Laureate in Chemistry *Dan Shechtman*

## TECHNOLOGICAL ENTREPRENEURSHIP



**44** small university spin-offs



**>170** work places



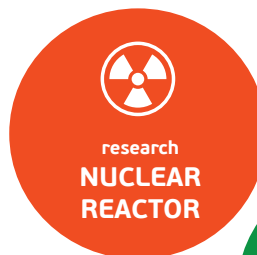


**>100** start-ups



turnover of innovative companies is **> 1 bln rub.** per year

## TPU MEGA-PLATFORMS



Center of  
Resource Efficient  
Subsurface Use



Tomsk RASA  
Center



Space  
Technology  
Center



Center of  
3D-printing in  
Space



Center of collective use  
Composition of Substances  
and Materials



Laboratory  
of Industrial  
Robotics



Metrology Center

**>1,000** cooperation agreements and joint projects with companies and organizations

**454**

**158**

**357**

**18**

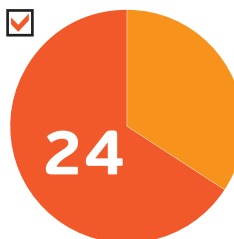
- universities and research organizations
- schools, lyceums, academic centers
- business entities
- associations and corporations

**TPU IS A BASE UNIVERSITY OF STATE CORPORATIONS**



**TPU IS A PARTICIPANT OF**

☒ **17** innovative development programs (IDP) of state corporations



**24** out of **35** technological platforms to modernize Russia's economy and foster its sustainable development

**PARTNER COMPANIES:**



**INTERNATIONAL TRAINING CENTERS**



TPU is a member of **15** prestigious international organizations and consortia, including CESAER (Conference of European Schools for Advanced Engineering Education and Research) and CLUSTER (Consortium of Leading European and Asian Technical Universities)



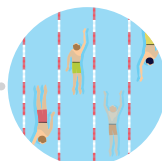
**TOTAL AREA – 329,000 m<sup>2</sup>.**



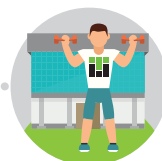
**31**  
university  
buildings



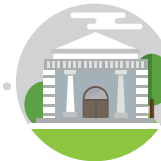
**15**  
hostels



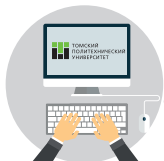
**25**-meter  
swimming pool



**8,424** m<sup>2</sup>  
of sports facilities



International  
Culture Center



**7,000**  
computers



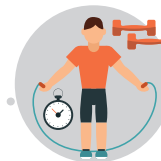
**200**  
WiFi zones



**15**  
NGOs



TPU Library  
containing over  
**2.6** mln books



**9**  
sports clubs



**400**-meter-long  
athletic facility of the  
Olympic standard



Skiing  
lodge



Artificial football  
pitch



Rock climbing  
facility



Biathlon  
shooting  
range



## The Best Campus in Russia –

1<sup>st</sup> place in the contest of the RF Ministry of Education and Science

For more than 10 years, the Volunteer and Social Activities Center of TPU has been implementing public initiatives of the University. TPU volunteers took part in the Sochi 2014 Winter Olympics and Paralympics, and are currently preparing for 2017 World Festival of Youth and Students.



# △ TPU 2020 – TRIANGLE OF INNOVATIONS

TOMSK  
POLYTECHNIC  
UNIVERSITY

IS A LEADING  
INCENTER

ENGINEERING  
INTELLECTUAL  
INNOVATIVE

CENTER

IN RUSSIA-ASIA-EURASIA

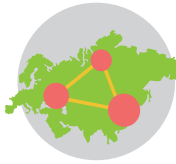
2015 2020 2025



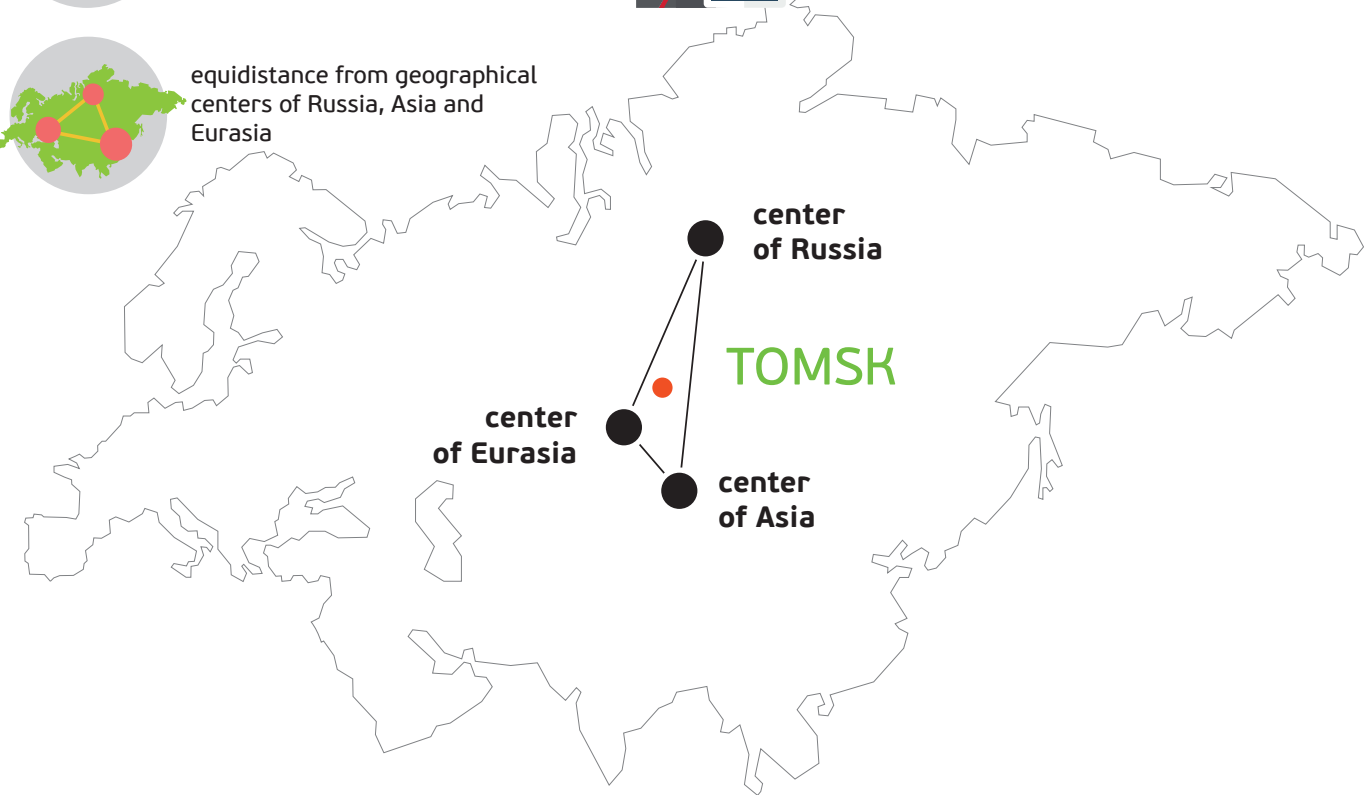
unique integrated approach  
to research, engineering and  
entrepreneurship



focus on Asia thus ensuring  
innovations and training of  
engineering and scientific elite



equidistance from geographical  
centers of Russia, Asia and  
Eurasia



center  
of Russia

TOMSK

center  
of Eurasia

center  
of Asia