



МИХАЙЛО
ВОЛКОВ

T.F. Gorbachev Kuzbass State Technical University

Kemerovo, Russian Federation





General information

Full name	Federal State budget institution of higher education (FGBOU VO) T.F. Gorbachev Kuzbass State Technical University
Ministry	Ministry of Science and Higher Education of the Russian Federation
Address (post box)	28, Vesennyyaya ul., Kemerovo, Kemerovo region, Russian Federation, 650000
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Rector	Andrei A. Krechetov



Mining Institute

Mining Institute, Est. August 30, 1950.

	Specialty	Field of study	Length of programme
1	Applied geology	Surveying, mineral exploration	5
2	Mining	<ul style="list-style-type: none">•Underground development of coal deposits•Open-pit mining•Mine surveying•Mine and underground building•Minerals processing•Mine machine and equipment•Electrification and automatization of mining•Safety and mine rescue work	5,5
3	Physical processes of mining and oil and gas production	Physical processes of mining	5,5

Bachelor's degree

20.03.01 Technospheric safety engineering

Master's degree:

20.04.01 Technospheric safety engineering

PhD degree:

20.06.01 Technospheric safety engineering

21.06.01 Geology



Institute in numbers

8 chairs;

100 teachers, including:

34 Doctors of Science,

64 PhD,

1800 students

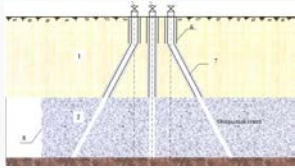




Mining Institute

Main areas of research

- degasification of coal-beds;
- development of mass explosion projects;
- development of mineral processing technologies;
- development of mining tools;
- diagnostic of mine equipment;
- seismic prediction;
- Kuzbass coal quality research.



Strategic partners of the Mining Institute



LIEBHERR

**БЕЛАЗ
BELAZ**



becker
MINING SYSTEMS RUS
A PART OF THE BECKER MINING SYSTEMS GROUP OF COMPANIES



Construction Institute

Construction Institute was founded in 2013 on the basis of the mine construction faculty, which had been founded in 1952



Specialist's degree:

08.05.01 Construction of unique buildings and structures

Bachelor's degree:

08.03.01 Construction

21.03.02 Land development and cadastres

Master's degree:

08.04.01 Construction

21.04.02 Land development and cadastres

Institute in numbers

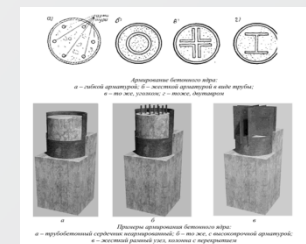
- 55 professors, including 3 Doctors of Science, 24 PhD;
- 810 students, including 22 foreign ones;
- 3 departments;
- 1 scientific laboratory (scientific and engineering laboratory for testing of building materials);
- engineering centers:
 - ✓ center for inspection and design of roads;
 - ✓ center for expertise and design of industrial and civil buildings and structures.
- student design bureau.





Scientific projects under implementation

- Development and improvement of building materials based on the use of fuel and energy industry and chemical production waste.
- Substantiation and improvement of technology for construction and maintenance of haul roads of coal mines
- Modification of cement concretes with dead catalysts of chemical enterprises.
- Development and improvement of asphalt concrete on the basis of on crumb rubber modified bitumen.
- Development of technology for manufacturing monolithic and precast insulation from fuel and energy industry waste for enclosing structures of civil and industrial buildings.
- Substantiation of the resources of bearing metal structures of mining machines.
- The construction of buildings and structures with the use of new design solutions, providing a reduction in material and labor costs.
- Development of manufacturing technology for large-sized autoclaved concrete blocks.
- Rock mechanical substantiation of technological parameters for strengthening unstable soil foundations of mining and technical facilities.
- Development of manufacturing technologies for tube confined autoclaved concrete columns and piles.
- Research and development of wind turbine designs.





Institute of Information Technology, Mechanical Engineering and Motor Transport

Institute was founded in 2013 on the basis of the Mechanical Engineering Faculty , which had been founded in 1973

Bachelor's degree:

09.03.02 Information systems and technologies

09.03.03 Applied informatics

15.03.01 Mechanical engineering

15.03.04 Automation of manufacturing processes

15.03.05 Design and engineering support for mechanical engineering

23.03.01 Technology of transport processes

23.03.03 Operation of handling machinery and complexes

27.03.02 Quality management

Master's degree:

09.04.02 Information systems and technologies

09.04.03 Applied informatics

15.04.01 Mechanical engineering

15.04.04 Automation of manufacturing processes

15.04.05 Design and engineering support for mechanical engineering

23.04.01 Technology of transport processes

23.04.03 Operation of handling machinery and complexes

27.04.02 Quality management

PhD degree:

09.06.01 Information and computer science

15.06.01 Mechanical engineering



Institute in Figures

- 6 departments
- 4 branch offices at the profile enterprises of the region
- 6 scientific laboratories, 2 youth scientific communities
- 121 scientific and pedagogical workers, including 12 doctors of science and 56 candidates of science
- 1186 bachelor and master students
- 200 specialists graduate annually produced
- 8 Profiles of Bachelors
- 8 master's programs
- 2 scientific specialties for graduate students
- 7 scientific-pedagogical schools



Institute of Information Technology, Mechanical Engineering and Motor Transport

Laboratories



Robotics

Fuels and lubricants materials

Electric equipment of vehicles

3D modeling

Quality control of machine parts

Welding laboratory



Institute of Information Technology, Mechanical Engineering and Motor Transport

RESEARCH FIELDS

- signal processing measurement information of industrial automation systems;
- intelligent control systems for mobile robots;
- traffic management systems using artificial intelligence methods;
- work in the field of statistical modeling and prediction of the destruction of rocks;
- management of the state of electromechanical systems of mining machines in order to improve their dynamic loading;
- mechanics of technological inheritance of the properties of the surface layer at the stages of processing and operation as a scientific basis for the design of hardening technological processes and the assessment of the residual resource of the responsible engineering products;
- examination and diagnostics of technical devices of hazardous production facilities with an assessment of the residual resource taking into account the evolution of the microstructure and the criteria for the limiting state of operability of the mining, engineering, chemical, metallurgical and heat energy equipment;
- improving the efficiency of grinding metals, including hard-to-machine materials;
- improving the operational capabilities of grinding tools;
- study of the influence of the components of the formulation and fillers on the physico-mechanical properties of grinding wheels;

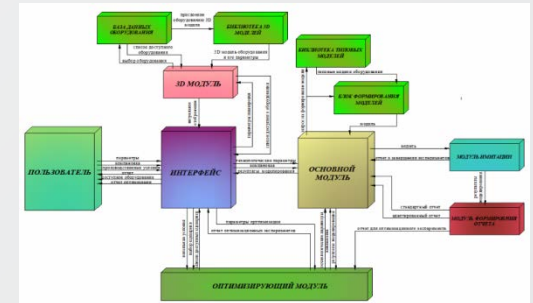
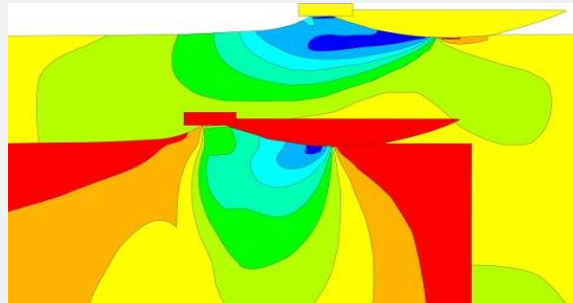




Institute of Information Technology, Mechanical Engineering and Motor Transport

RESEARCH FIELDS

- study of alloyed tool steels;
- improving the design of bearing units in order to increase their service life;
- ensuring the operability of friction units operating in extreme conditions;
- research and improvement of service systems for career transport and passenger cars;
- research and development of additives and additives to liquid motor fuels;
- improving the performance of cutting elements, including for mining and road engineering methods of chemical-thermocryogenic process;
- development and implementation of applied robotic systems in technological processes of leading industries;
- improving the reliability of gearboxes excavator-automotive complexes;
- improving the reliability of carrier systems dump trucks;
- Tire dump truck resource management;
- formation of a system of management of urban traffic flows to prevent traffic congestion;
- logistics management in the organization of small-scale freight shipments;
- improving the safety of the movement of children pedestrians in cities.





Power Engineering Institute

Power Engineering Institute founded in 2012.

Bachelor's degree:

13.03.01 Thermal power engineering and thermal engineering

- Industrial power system

13.03.02 Electrical power engineering and electrical engineering

- Automation of technological processes
- Electrical power systems and networks
- Electric equipment of the enterprises
- Management in power
- Power supply

Master's degree:

13.04.01 Power system and heating engineer

- Industrial power system

13.04.02 Power system and heating engineer

- Electro technical complexes and systems
- Power industry

PhD degree:

13.06.01 Electric and heat engineering

- Electro technical complexes and systems
- Thermal physics and theoretical heating engineering



Numbers

- 54 teachers, including 6 Doctors of Science, 20 Candidates of Science;
- 1000 students, including 51 foreign students;
- 4 chairs;
- 1 science laboratory;
- the institute graduates about 200 bachelors and masters annually.



Power Engineering Institute

Research projects

The Institute carries out scientific projects and research:

- Thermal treatment of Barzas coals for the purpose of producing chemical products
- Research of engine run CUMMINS in the gas-diesel mode
- Technical rearmament of the natural gas liquefaction plant with an external cascade cycle
- Use of the processing plants coal sludge for producing fuel briquettes
- Technologies development of products production from fly ash of thermal power plants
- The absorption cleaning of flue gases for CO₂ и SO_x
- Research of the effect of alkali metals oxides on the conversion rate, composition and quantity of generator gas at char steam gasification
- Development of heat pumps for recycling of low potential energy
- Use of flue gases heat for heating of air on thermal power plants without achievement of dew point with use of thermosyphon
- Energy saving and increase in energy efficiency of systems electro- and heat supplies
- Assessment of reliability of external power supply schemes of hazardous production facilities power supply
- Increase in reliability and operation safety of power supply systems and electric equipment
- Development of new types of mining electric equipment
- Diagnostics of electric equipment



Partners:



МЫ СОГРЕВАЕМ ГОРОДА
**СИБИРСКАЯ
ГЕНЕРИРУЮЩАЯ
КОМПАНИЯ**



СУЭК



**МРСК
СИБИРИ**



СибирьЭнерго



**РОССИЙСКИЙ ФОНД
ФУНДАМЕНТАЛЬНЫХ ИССЛЕДОВАНИЙ**



Institute of Chemical, Oil and Gas Technologies



Bachelor's degree:

18.03.01 Chemical Engineering

18.03.02 Energy and resource conservation processes in chemical engineering, petrochemistry and biotechnology

20.03.01 Technospheric safety engineering

Master's degree:

18.04.01 Chemical Engineering

18.04.02 Energy and resource conservation processes in chemical engineering, petrochemistry and biotechnology

20.04.01 Technospheric safety engineering

PhD degree:

04.06.01 Chemical sciences (organic and inorganic chemistry)



Institute of Chemical, Oil and Gas Technologies

Laboratories



Coke and pitch quality laboratory

Thermodynamics of multiphase systems

Chemistry of coordination compounds
and functional materials

Deep processing of coal

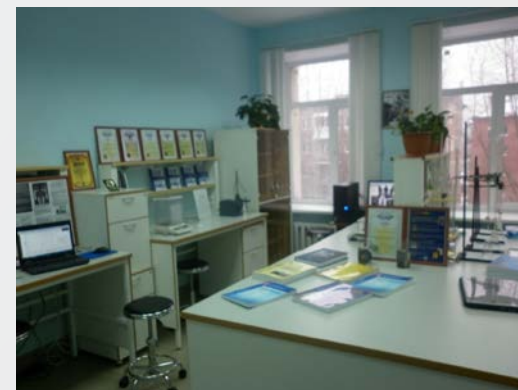


Institute of Chemical, Oil and Gas Technologies

The main research areas of the laboratories



- creation of heat-sensitive materials based on new multifunctional compounds for visual temperature control of process equipment;
- development of high-performance technologies for the isolation of rare and rare earth elements from various sources, including waste coal;
- processing of metallurgical slag for the purpose of extraction of metal components, in particular, iron and non-ferrous metals using combined methods;
- development of corrosion-resistant coatings for protection of equipment of chemical enterprises.





Institute of Economics and Management

Institute founded in 1968.

Specialist's degree:

38.05.01 Economic security

Bachelor's degree:

38.03.01 Economics

38.03.02 Management

38.03.04 Public and municipal administration

43.03.01 Service

Master's degree:

38.04.01 Economics

38.04.02 Management

38.04.04 Public and municipal administration

PhD degree:

38.06.01 Economics

Institute`s data:

- 83 teachers, among them are 12 doctors of science, 45 PhD;
- more then 1300 students, among them are 4 foreign ones;
- 6 departments, among them is 1 basic one;
- research laboratory;
- 270 specialists graduate from Institute annually.





Institute of Economics and Management

Research projects



Development of rural regions on the basis of business` social responsibility

Diversification production activities of city-forming enterprise and its impact on the development of single-profile territory

Formation of integrated coal companies` investment strategy.

Main directions of the project:

- clarificating investment features of coal-mining integrated companies at the present stage;
- identificating organizational and corporate factors and risks of investment attractiveness;
- clarificating strategic objectives of integrated companies` investment portfolio;
- determinating main directions of the strategy of coal-mining integrated companies` investment activity;
- creating methodology for assessing the investment strategy`s effectiveness;
- creating algorithm of formation and mechanism of investment strategy`s implementation.

Projects are implemented with the support of enterprises :



ДДС «ИТС «Inotech»



Fundamental Training Faculty

Fundamental Training Faculty has been developing since 1950

Departments:

- History, Philosophy and Social Sciences
- Mathematics
- Physics
- Descriptive Geometry and Graphics
- Foreign languages
- Physical education

Scientific and innovative structure:

- Language Communication Center "Vita Linqua"
- "PRO: Physics"
- Center for 3D modeling and design
- Art Scientific Center



Faculty Staff

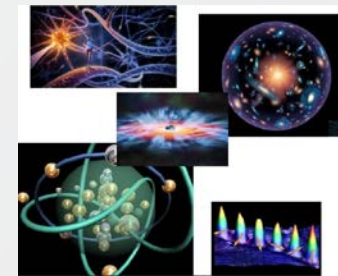
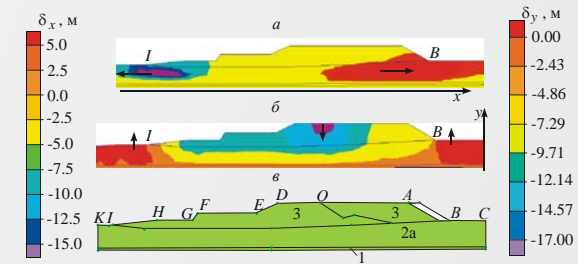
- 97 teachers, including;
- 11 Doctors of Science;
- 49 Candidates of Science;
- The faculty trains 2500 bachelors, specialists, undergraduates, postgraduates.



Fundamental Training Faculty

Research projects

- mathematical modeling of physical, technical and economic processes;
- improving the efficiency of the training process in the preparation of athletes;
- three-dimensional modeling of parts, assemblies and mechanisms, living quarters and their interiors;
- the study of physical phenomena in mining;
- improving the quality of professional linguistic education and linguodidactics in a non-linguistic university;
- historical and archaeological research;
- formation of students' readiness for organizational and management activities;
- the development of students' skills of sociocultural and legal thinking.





International Partners

BELARUS

- Belarusian State Technological University
- Belarusian National Technical University
- Joint Institute of Mechanical Engineering of the National Academy of Sciences of Belarus

BULGARIA

- Sofi a Technical University
- Varnevsy University of Management

CHINA

- Shandong University of Science and Technology
- Center for Scientific and Technical and Economic Information of Central Asia
- Dalian Neusoft University of Information
- School of Chemistry and Chemical Engineering, Xinjiang University
- Harbin Investment Management Company Incubator
- Lioning Technical University

GERMANY

- Higher Technical School named after Georg Agricola
- ContiTech Transportbandsysteme GmbH

INDIA

- APTECH LIMITED
- Amity University Uttar Pradesh

KAZAKHSTAN

- TOO Training Centre “Progress”
- Shakarim State University
- Kazakh Humanitarian Law Innovative University
- S. Toraighyrov Pavlodar State University.
- Innovative University of Eurasia
- Ekibastuz Engineering and Technical Institute named after academician K. Satpayev
- Karaganda State Technical University

UZBEKISTAN

- Tashkent State Technical University named after Islam Karimov
- Navoi State Mining University
- Angren Coal Industry Vocational College
- Turin Polytechnic University in Tashkent

SLOVAKIA

- Technical University in Kosice

TAJIKISTAN

- Statistical College of Vahdat
- Mining and Metallurgical Institute of Tajikistan, Buston
- Kulob Institute of Technology and Innovation Management
- Tajik Technical University named after Academician M. S. Osimi



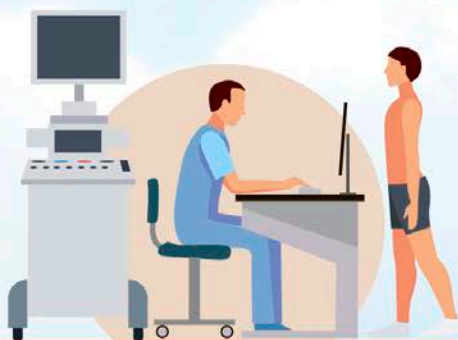
Social Infrastructure



CAMPUS



RECREATION CENTRE "POLYTEKH"
IN SHEREGESH



HEALTHCARE CENTRE "MOLODEZHNYI"



STUDENT CANTEEN



RECREATION CAMP
"PYSANYE SKALY"



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