



Geology and Petroleum Technologies at Kazan Federal University





History of Kazan University - Milestones



396 in the world
5 in Russia

- 1804 – Imperial Kazan University established by Emperor Alexander I
- 1821 – Nikolay Lobachevsky offers first outlines of non-Euclidean geometry (later served as rector 1827 - 1846)
- 1837 – first ever Department of Chinese Language in Russia
- 1844 – ruthenium (44th chemical element) discovered by Professor Karl Claus
- Since 1858 – Alexander Butlerov and his students develop the theory of organic compounds
- 1885 – first ever laboratory of psychophysiology in Russia established by Vladimir Bekhterev
- 1887 – Vladimir Ulyanov (Lenin) enrolls in Kazan University but is expelled after a student protest
- 1901 – Engelhardt Astronomical Observatory opened in a suburb of Kazan
- 1922 – Kazan Agricultural Institute splits from Kazan University
- 1925 – the University assumes the title of Ulyanov-Lenin Kazan State University
- 1930-1932 – three new institutes – in chemical technology, aviation, and medicine – split from Kazan University
- 1944 – Yevgeny Zavoisky discovers electron paramagnetic resonance
- 1945 – Kazan Center of the Russian Academy of Science opens doors
- 1973 – 1978 – major campus expansion and renovation in Kazan city center
- 1996 – central campus in Kazan inducted into the Russian Registry of the Most Valuable Objects of Cultural Heritage
- 2010-2013 – Kazan Federal University established after a series of mergers with local institutions
- 2021 – Kazan University joins Priority 2030, a federal academic excellence initiative



Natural Sciences

Medicine and biology
Environmental science
Geology and petroleum
technologies
Chemistry

Territorial campuses

Yelabuga, Russia
Naberezhnye Chelny, Russia
Jizzakh, Uzbekistan
Cairo, Egypt (planned in 2023)

Physics, Mathematics, IT

Physics
Astronomy
Mathematics and mechanics
Computer science
Engineering (heat, electrical,
automotive, civil, mechanical,
biotechnical, cryogenics, materials
science)

School and Pre-school Education

Lobachevsky Lyceum
IT Lyceum

University School of Yelabuga

My vmeste (We are together)
kindergarten

Social Sciences and Humanities

International relations
Law
Philology and linguistics — over 20
languages
Psychology
Philosophy and theology
Sociology
Political science
Design and environmental arts
Economics and finance
Management and public service
Teacher education

52,000 students

**11,500 international students
from 101 countries**

**245 partner institutions from
58 countries**

**Higher education and PhD
Secondary education
Pre-school education
University clinic**

**9,500+ employees
Including 4,000 educators and researchers**

**350+ undergraduate programs
250+ graduate programs
90+ doctoral programs
Advanced training programs**

**910 thousand m² of infrastructure
120+ laboratories
700+ buildings and structures
120 land plots**

Priority 2030 is a Russian strategic academic leadership program launched in 2021. There are two tracks in the project – the Territorial / Industrial Leadership track and the Research Leadership track. KFU is part the Territorial / Industrial leadership group. Our University listed five strategic projects for the program:

SP1 Genomic and Post-Genomic Technology

SP2 Russian Energy Transition: Balancing Natural Potential and Global Trends

SP3 Digital Studies of Materials

SP4 Meta-Platform Solutions for IT, AI and Cyber-Physical Systems

SP5 Evidence-Based Platform Solutions for Human Potential



Over 14,000 students are hosted at various KFU dorms, including the Universiade Village – one of the largest dorm campuses in Russia



11 sports venues



12 museums (humanities, technology, and natural sciences)

1 mln depository items

10 large-scale exhibition projects per year

35 thousand visitors per year



Geology and Petroleum Technologies at Kazan Federal University – three pillars

Institute of Geology and Petroleum Technologies
(education and research)

World-Class Research Center for Liquid Hydrocarbons
(research)

Center for Advanced Training, Quality Management and Marketing
(advanced professional training)



World N 40
QS World University Rankings by
Subject 2023: Engineering -
Petroleum

World-class
laboratories

Over 1,000 students

Students actively
partake in our
research



Cooperation with
local and overseas
universities

Employment opportunities in industry-
leading companies



Institute Director
Vice-Rector for Earth Sciences
Danis Nurgaliev

Reconstruction of global catastrophic natural events in the past, present and future



Exploration of minerals on the Moon, asteroids and geology of Mars



Что можно добывать на Луне?

- Вода**
 Может быть использована как горючее для космических аппаратов
- Золото**
 Может быть использовано ювелирами, дантистами, а также в электронике, медицине и космонавтике
- Платина**
 Используется в химической промышленности, производстве медицинской аппаратуры и ювелирных изделий
- Редкоземельные элементы**
 Используются в электронике. Иттрий применяется при производстве телевизионных и компьютерных экранов



Bachelor programs (4 years)

-  Geology
-  Geophysics
-  Geology of hydrocarbon deposits
-  Hydrocarbon production
-  Engineering geology and hydrogeology

PhD programs (4 years)

-  Oil chemistry
-  Paleontology and stratigraphy
-  Mineralogy and crystallography; geochemistry and geochemical methods of mineral exploration
-  Lithology

Master programs (2 years)

-  Digital methods and modeling in oil and gas geology
-  Engineering geology and hydrogeology of urban territories
-  Geology and geochemistry of oil and gas
-  Geology of mineral deposits
-  Contemporary geophysical technologies of hydrocarbon prospecting and exploration
-  [Complex data analysis in geosciences \(English program\)](#)
-  Stratigraphy of oil and gas basins

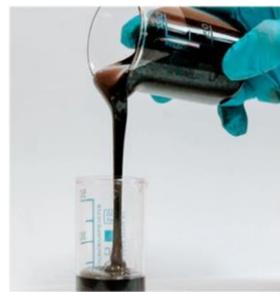
PhD programs (4 years)

-  Hydrogeology
-  Geophysics
-  Geology, exploration, prospecting and development of oil and gas deposits
-  Development of oil and gas deposits
-  [Petroleum engineering \(English program\)](#)

Laboratory of Geochemistry, Isotope and Element
Analysis



Laboratory of Enhanced Oil Recovery



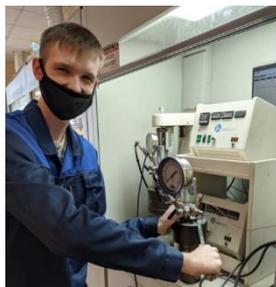
Laboratory of X-ray Tomography



In-Situ Combustion Laboratory



Laboratory of Hydrate Technologies for the Utilization and Storage of Greenhouse Gases



Electron Microscopy Laboratory



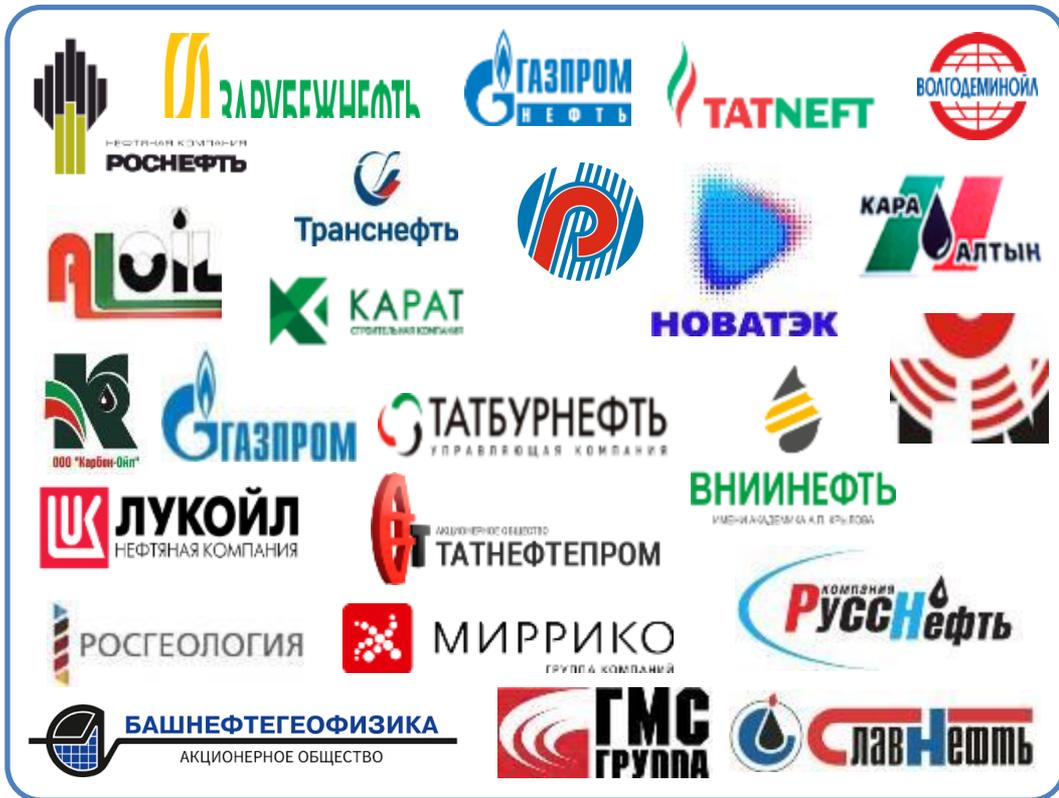
3D GEO Center



Laboratory of Petrophysical Methods of Geological Material Research



Russian companies



International companies





World-Class Research Center for Liquid Hydrocarbons



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5 in Russia

WORLD-CLASS RESEARCH CENTER EFFICIENT DEVELOPMENT OF THE GLOBAL LIQUID HYDROCARBON RESERVES (INTER-UNIVERSITY CONSORTIUM)

The Center was established in 2020 to advance research in hydrocarbon deposit exploration, comprehensive deposit monitoring, eco-friendly and efficient methods of production on heavy and complex reservoirs

Among the Center's priorities are:

Fundamental research

New production paradigms

Exploration of new reserves

Sharing of best practice



Kazan Federal
UNIVERSITY



Ufa State Petroleum Technological
University

Skoltech

Skolkovo Institute of Science and Technology





RESEARCH PRIORITIES

Satellite imaging
Heat flows
Carbon isotope record
Sedimentation basins
Evaluation of reserves
Geothermochronology
Air, water, and ground
prospecting and exploration
Drone surveillance

Big data and AI in geological
modeling
„Pseudo“-core samples
Microfluid research
Exploration on depleted
reservoirs
Eco-friendly and cost-
effective drilling technologies

Utilization of associated
petroleum gas for enhanced
oil recovery
Oil displacement mechanisms
Enhanced oil recovery
(ionized water, surfactants,
polymers, gels)
Catalysts for viscous oils
Express analysis of
composition of oil and oil
products

Professional training in:

- Interpretation and translation in the petroleum industry
- Geology and geophysics (Russian and English courses)
- Oilfield development, metrology and geodesy
- Economics, management and finance in the petroleum industry



Uniting our capabilities
for everyone's success!

CdoGEO



Our partners



CdoGEO implements professional retraining programs, advanced training courses, conducts webinars and individual internships

- **Courses are implemented in any of the requested format:**

- ✓ Full-time
- ✓ Part-time
- ✓ On-site on geological objects,
- ✓ at enterprises, in laboratories



We integrate everybody's possibilities for mutual success!

cdogeo.kpfu.ru/centre

- 16+ professional retraining programs
- 110+ professional development programs
- 100+ distance learning courses
- 1,000+ students per year
- 170+ teachers and experts

Our partners and customers

PJSC NK Rosneft

PAO Tatneft

PJSC Gazprom

PJSC Gazpromneft

PJSC LUKOIL

JSC "Ritek"

OJSC "Surgutneftegas"

LLC "TNG-Group"

JSC "Bashneftegeofizika"

PJSC "Geotech holding"

MH Industry (Kazakhstan)

Burgylau LLP (Kazakhstan)

Unión Cuba-Petróleo (Cuba)

Southern Oil Company (Republic of Iraq)

Roxar Services AS

All-Russian Research Institute of Flow
Measurement

Schlumberger

SPF Paker LLC

Mirrco Group of Companies

CMG (Canada)

Trimble (US)

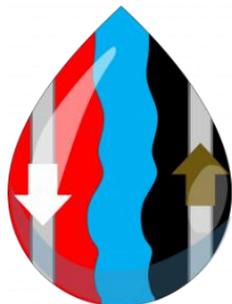
IFP (France)

HONG KONG UNITE CREATION

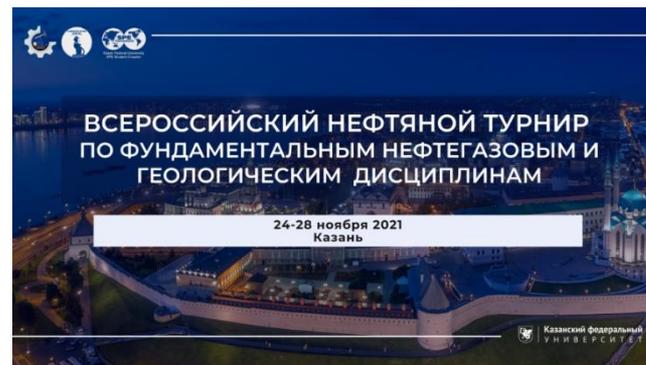
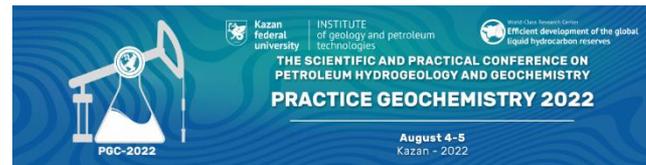
INTERNATIONAL CO. LIMITED (China)



A number of large-scale events are held every year



Thermal EOR
International Workshop
«Thermal Methods for Enhanced Oil Recovery: Laboratory Testing, Simulation and Oilfields Applications»





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