

# Institute of Geology and Petroleum Technologies at Kazan Federal University

#35 in the world
QS Subject Rankings in Petroleum Engineering



#### Tatarstan and its capital city Kazan













401 in the world 5 in Russia Kazan Federal University





Photos from Visit-Tatarstan.com and KPFU.ru









#### History of Kazan University - Milestones

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 (44<sup>th</sup> 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



#### Kazan Federal University - Studies and structure

#### **Natural Sciences**

Medicine and biology Environmental science Geology and petroleum technologies Chemistry

#### **Territorial campuses**

Yelabuga, Russia Naberezhnye Chelny, Russia Jizzakh, Uzbekistan Cairo, Egypt

#### 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**

IT Lyceum Lobachevsky Lyceum University School of Yelabuga 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







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#### University at a glance

#### 52,000 students

11,500 international students from 100+ countries

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

350+ undergraduate programs 250+ graduate programs 90+ doctoral programs Advanced training programs 300+ partner institutions from 52 countries

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

910 thousand m<sup>2</sup> of infrastructure 120+ laboratories 670+ buildings and structures









#### <u>Priority 2030 – Strategic projects</u>

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





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#### Cultural, social and sports infrastructure





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)





#### Institute of Geology and Petroleum Technologies **OUR INSTITUTE**

World # 29 QS World University Rankings by Subject 2024: Engineering -Petroleum

World-class laboratories

Students actively partake in our research



Over 1,200 students

Cooperation with local and overseas universities



**Danis Nurgaliev** 

Employment opportunities in industryleading companies





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### Institute of Geology and Petroleum Technologies OUR EDUCATIONAL PROGRAMS

### <u> 1012</u>

#### **Bachelor programs (4 years)**

- Geology and development of mineral deposits
- Geophysics
- General geology
- Engineering geology and hydrogeology
- Petroleum engineering



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

#### Master programs (2 years)

- Contemporary geophysical technologies of hydrocarbon prospecting and exploration
- Engineering geology and hydrogeology of urban territories
- Geology of mineral deposits
- Geology and geochemistry of oil and gas
- Digital technology and modeling methods in oil and gas geology
- Stratigraphy of oil and gas basins
- Complex data analysis in geosciences (English program)
- Petroleum engineering (English program)
- Development of hard-to-recover and unconventional hydrocarbon fields
- Integrated modeling of deposits
- Technology of oil, gas and natural bitumen

#### 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)





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### Institute of Geology and Petroleum Technologies SOME OF OUR LABORATORIES



### Laboratory of Geochemistry, Isotope and Element Analysis

Laboratory of Enhanced Oil Recovery









Laboratory of X-ray Tomography

In-Situ Combustion Laboratory

















### Institute of Geology and Petroleum Technologies

#### **SOME OF OUR LABORATORIES**



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

**Electron Microscopy Laboratory** 









3D GEO Center







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#### **International cooperation**

#### **Russian companies**



#### **International companies**







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#### World-Class Research Center for Liquid Hydrocarbons

#### 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 practices





Kazan Federal

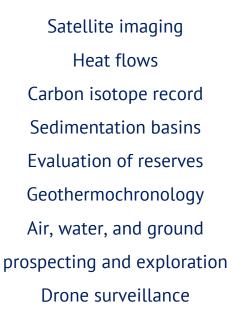
UNIVERSITY





#### World-Class Research Center for Liquid Hydrocarbons

#### RESEARCH PRIORITIES



Big data and Al in geological modeling "Pseudo"-core samples Microfluid research Exploration on depleted reservoirs Eco-friendly and costeffective 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







#### Center for Advanced Training, Quality Management and Marketing

#### 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 capabilites for everyone's success!

CdoGEO















#### Center for Advanced Training, Quality Management and Marketing

## 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











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### STARS" RATING SYSTEM



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#### Center for Advanced Training, Quality Management and Marketing

#### We integrate everybody's possibilities for each one's 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"

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

Mirrico Group of Companies

CMG (Canada) Trimble (US) IFP (France)

HONG KONG UNITE CREATION

INTERNATIONAL CO. LIMITED (China)





#### Forums and events

International Scientific and Practical Conference

Carbonate sediments 2024

14-16 August 2024, Kazan









A number of largescale events are held every year















### Institute of Geology and Petroleum Technologies Contacts

### **Institute of Geology and Petroleum Technologies**

Kazan, ulitsa Kremlyovskaya 4/5
Deputy Director for Academic Affairs
Andrey Teryokhin

priemgeo@kpfu.ru
https://kpfu.ru/geo

#### **Center for Advanced Training**

Kazan, ulitsa Kremlyovskaya 4/5

Director

**Ildus Chukmarov** 

chukmarov@mail.ru

https://cdogeo.kpfu.ru/centre/

#### **Admission**

admission@kpfu.ru

Phone: + 7 843 2065289

Messaging: + 7 9600 491876

https://abiturient.kpfu.ru

#### **Preparatory School**

preparatory@kpfu.ru
https://prepschool.kpfu.ru

Telegram

