RUDN university

ACADEMY OF ENGINEERING

INNOVATIVE TECHNOLOGIES IN GAS AND OIL FIELD EXPLORATION

MASTER'S PROGRAMME DEGREE

PROGRAM ADVANTAGES

- Foreign specialists in geology (from the USA, Latin America and African countries) regularly held seminars and workshops.
- Acquiring knowledge in the field of digital geology.
- Skills in the application of innovative geologic-geophysical research methods, process prospecting and exploratory information in oil-and-gas industry.
- Skills in carrying out lithofacies analysis to evaluate oil-and-gas-bearing capacity in petroleum zone.
- International shape of students' groups benefits by an international business-communications contacts just within university.
- Russian and foreign students do their internship and gain geological material in PAO "Gasprom", PAO "NK Rosneft", "Rosgeologiya" Joint-Stock Company, "Zarubezhgeologiya" Joint-Stock Company and others.
- Graduates of the program are demanded at the large prospecting enterprises, the research organizations in Russia and abroad.
- A wide range of practical and research work on topical issues of geology and geophysics allows you to freely navigate and work in the main production areas of geological exploration in the oil and gas industry.

STUDYING PROCCESS

120 educational credits.

A two-year programme is designed to prepare specialists competent in geology evolution, state-of-the art and its current issues, complex geological methods in research and strategy combined with the ability to solve scientific and applied problems. It equips students with advanced methods in planning and carrying out research, in incorporating and compilating the data into a report. The programme stimulates student's initiatives based on advancing their knowledge in R&D, skills in applied and pedagogical fields.

INTEGRATION PROCESS OF GEOPHYSICAL METHODS IN OIL-AND-GAS SEARCH

- Integrated analyses and complex geophysical data processing and interpretation.
- Determination of geophysical research methods at different prospecting stages.
- Geophysical complex selection.
- Sets of geophysical methods for exploration of raw hydrocarbons and their capacity evaluation.
- Integration of geophysical methods for offshore analyses in Russia and their prospecting capacity evaluation.

LITHOFACIES ANALYSIS FOR PROSPECTING AND DEVELOPING

- The concept of facies and the genetic type of mineral deposits ratio.
- The role of an updating principle and a lithological benchmarking method at the facies analysis stage.
- Recovery of sediments genesis.
- Facies rock indicator in terms of mineral composition features, structures texture, geochemical parameters, paleontological fossils.
- The procedure of modeling lithological column, section correlation schemes, lithofacies profiles, isopachous lines mapping, lithological, factious and paleographical maps.

GEOLOGICAL INTERPRETATION OF SEISMIC DATA

- Essential physical principals of seismic survey for geological interpretation.
- Geological interpretation.
- A reflection wave correlation.
- Rupture location and tracing.
- A reflective seismic horizon indexing.
- Types of hydrocarbon traps and deposits.

GEOCHEMICAL METHODS OF HYDROCARBON RESERVES SEARCH

- The fundamentals of the geochemistry of rock, oil and gas organic matter.
- The direct geochemical methods of oil recovery forecast and deposit search.
- The theoretical basis of methods.
- Types and methods of geochemical prospecting.
- Distant exploration methods.
- Data integration and exploration methods efficiency.

ASSESSMENT CRITERIA FOR OIL-AND-GAS-BEARING CAPACITY

- Introduction.
- The major stage in hydrocarbon searching and prospecting.
- The concept of fossil fuel.
- Hydrocarbon lithology.
- The concept of hydrocarbon geological regionalization.
- The theoretical basis for predicting of oil-and-gas presence.
- Hydrocarbon geosystem modeling and exploration in the regions with a complex geological structure.

STUDENTS FEEDBACK

PHOU KOSAL, CAMBODIA

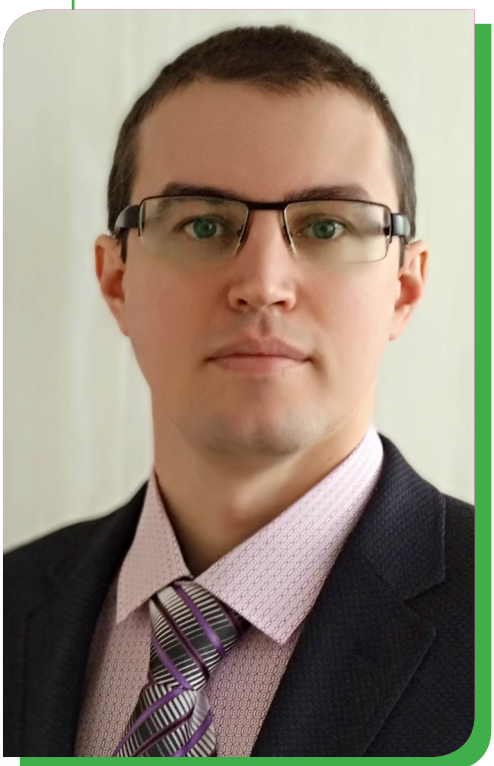
I am glad that I graduated RUDN university and did the Master's degree in prospecting and developing oil-and-gas fields. Our classes and practice were exceedingly varied and challenging. The programme was designed to provide a substantial introduction to modern simulation programs, which was a great advantage to find employment and to promote my career. I am extremely grateful to all the teachers for their help and extend knowledge I have got.

PAVEL OLEGOVICH UVAROV

I work in ZAO "Gasprom Yug (South)", Ph.D., Economics. I entered RUDN university for a second higher education to do the Master's degree in prospecting and developing oil-and-gas fields. Masters' programme integrated educational theory and practice, which enhanced my qualified professional knowledge. Professors and teachers were interested in sharing their professional experience and skills. The scientific adviser found time to supervise and discuss important issues, that helped me to combine my work and study. Extensive knowledge combined with hand-on industry experience let them interpret complex problems in a clever and simple way. I am quite satisfied that I did the Master's degree at the RUDN university.

HEAD OF THE PROGRAMME

ALEXANDER EVGENYEVICH KOTELNIKOV



Candidate of geological and mineralogical sciences, associate professor, director of the department of subsurface use and oil and gas engineering at the RUDN Academy of Engineering .

AREAS OF SCIENTIFIC INTERESTS:

structural conditions of endogenous mineralization containment in paleo volcanic constructions; search of endogenous mineralization based on paleo volcanic reconstruction and geochemical methods.

The expert AEER (Association of Engineering Education of Russia) and AKKOPK (Agency on quality control of education and development of career) – independent education quality assessment.

Research work: The author of scientific papers in the reviewed Russian and foreign scientific magazines (SCOPUS, Web of Science, VAK), regularly makes reports at the international conferences in the field of geosciences. The executive manager of four contract-based works, the executive of one state-financed project and one government contract. He is completing his Ph.D. dissertation, thesis for Ph.D. Degree in Innovative methods of minerals researching.