МГРИ | РОССИЙСКИЙ ГОСУДАРСТВЕННЫЙ ГЕОЛОГОРАЗВЕДОЧНЫЙ УНИВЕРСИТЕТ ИМЕНИ СЕРГО ОРДЖОНИКИДЗЕ

ФЕДЕРАЛЬНОЕ ГОСУДАРСТВЕННОЕ БЮДЖЕТНОЕ ОБРАЗОВАТЕЛЬНОЕ УЧРЕЖДЕНИЕ ВЫСШЕГО ОБРАЗОВАНИЯ

Sergo Ordzhonikidze Russian State University for Geological Prospecting (MGRI): International Cooperation in Geological Exploration and Mining Education

Rector of the Sergo Ordzhonikidze Russian State University for Geological Prospecting
Professor Yuri Panov

2025

MGRI's Unique Position in Russian Geological Education

100+

Years of Excellence

Leading geological education since establishment

50+

Countries

Alumni working in geological enterprises worldwide

1st

Russia's Leader

Largest centre for geologists and geophysicists

The Asia-Pacific region represents a strategic priority in geological exploration and subsoil management cooperation.

Three Pillars of Cooperation

MGRI: Building bridges between nations through excellence in geological education, research, and sustainable resource development.

Mineral Deposit Exploration

MGRI specialists participate in geological prospecting work around the world, applying contemporary methods for discovering and evaluating mineral resources with advanced technological approaches.

Training & Internships

Comprehensive programmes preparing international specialists through education in Russia and practical work at operational facilities in other countries, ensuring thorough professional development.

IT Technology Integration

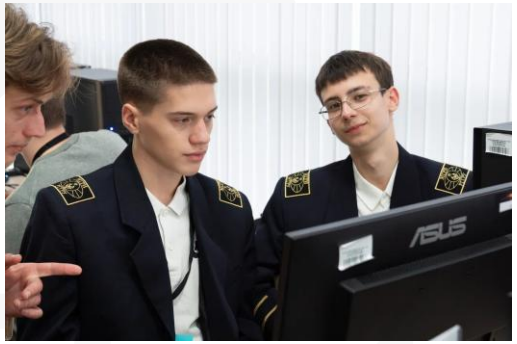
Integration of modern geological exploration methods utilising information technologies and digital platforms for enhanced efficiency and accuracy.

MGRI's Educational Philosophy

The educational process is built on principles of practice-oriented learning with extensive use of modern laboratory equipment, computer simulators, and virtual trainers for developing professional skills in safe conditions.









Programmes are designed considering contemporary industry challenges and international labour market requirements, ensuring graduates are ready to tackle real-world geological challenges from day one.

Educational Collaboration Framework

01

Student Exchange Programmes

Foreign students gain access to Russian educational technologies and scientific schools, whilst Russian students study unique geological conditions in partner countries through practical fieldwork.

02

Curriculum Development

Developing and modernising curricula considering specific needs of the mining industry, adapting content to regional geological conditions and national standards.

03

Research Partnerships

Joint scientific expeditions, knowledge exchange, publications in leading international journals, and participation in specialised conferences.

04

Technology Transfer

Implementing artificial intelligence, big data, and machine learning for geological information analysis and forecasting prospective sites.

International Activities: Six Strategic Directions

1. **Academic Mobility**
   Student and faculty exchange programmes for qualification enhancement and experience sharing between Russian and partner universities.

2. **Joint Research Projects**
   Collaborative scientific research in geological exploration and ecology, addressing critical challenges in resource sustainability.

3. **Curriculum Innovation**
   Development and modernisation of subsoil use courses considering current industry demands and available technological solutions.

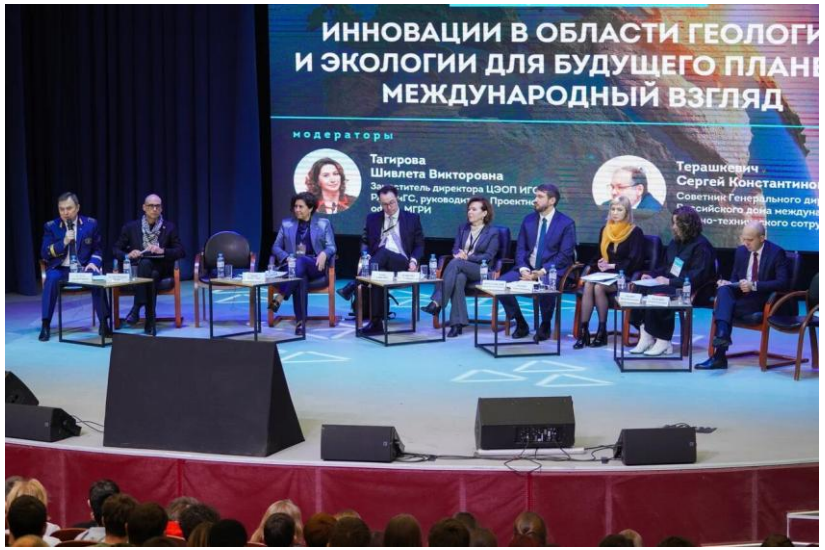
4. **Scientific Expeditions**
   Organisation of joint field research, results exchange, and publication of findings in international academic journals.

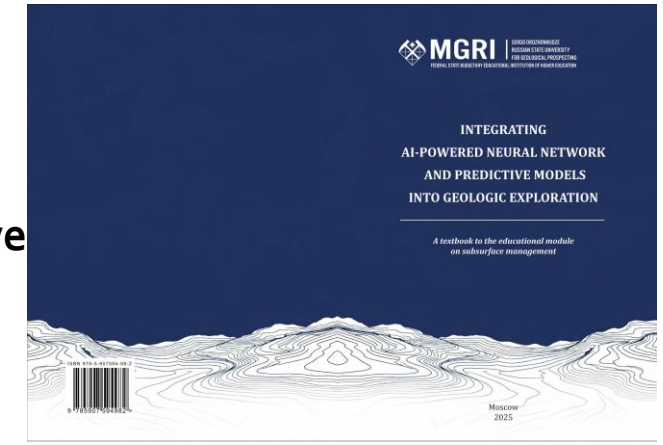
5. **Environmental Sustainability**
   Joint projects on sustainable subsoil use and minimising mining impact on the environment through EcoGeoMonitoring initiatives.

6. **Digital Transformation**
   Implementation of AI, big data, and machine learning technologies for geological analysis and resource forecasting.

Some current MGRI Int. Projects

- International Geological School MGRI training programmes
- Annual GeoNext Forum: Education, Technology and Innovation
- Joint MGRI-HUMG educational module on AI applications
- Bilingual textbooks development (Russian and English) with Hanoi University of Mining and Geology and University of Zimbabwe
- Annual meetings with the Vietnamese Association of MGRI Allumni
- Vietsovpetro Partnership
- MGRI-HUMG AI Centre for Minerals Research
- Minerals Research Centre at University of Zimbabwe established with MGRI's support





Landmark International Events 2024-2025

1

Russian-Zimbabwean Education Expedition (2024)

123 participants engaged in hands-on geological fieldwork, bridging academic theory with practical exploration.

2

Vietnam Alumni Meeting

Over 70 Vietnamese graduates reconnected in Hanoi, strengthening historical educational ties.

3

GeoNext Forums (2024-2025)

More than 1,000 participants explored future geo-resources through hybrid format engagement.

4

Russia-Vietnam Strategy Sessions (2024-2025)

62 specialists addressed current challenges in subsoil use cooperation between the two nations.

5

MGRI International GeoSchool (2025)

Zimbabwe Partnership: Building Research Capacity

In October 2023, the Mineral Resources Research Centre was established at the University of Zimbabwe with support from MGRI. This pioneering initiative represents a new model of international scientific cooperation.

Joint Geological Expedition

Participants collected geological samples from the Harare-Shamva greenstone belt, Magundi basin, and Great Dyke. Samples are being analysed in both countries' laboratories.

EcoGeoScan Stations

Two innovative environmental monitoring stations, "ECOGEOSCAN 1" and "ECOGEOSCAN 2", were launched on the University of Zimbabwe campus in November 2024.

Educational Exchange

MGRI faculty delivered lectures and masterclasses in Zimbabwe

Russian-Vietnamese AI Centre for Mineral Resources

June 2024

Alumni meeting in Hanoi with participation of Russian Deputy Minister of Science and Higher Education and Vietnamese officials.

Roadmap 2024-2026

Comprehensive plan for academic mobility, joint research, publications, and AI projects signed with Hanoi University.

AI Innovation

Showcased automated translation technology for educational video lectures using artificial intelligence and virtual instructors.

MGRI, together with Hanoi University of Mining and Geology, is working on establishing the **Russian-Vietnamese Centre of Artificial Intelligence for Mineral Resource Research**.

Mozambique Engagement: Opening New Frontiers

Intergovernmental Commission Participation

MGRI delegation participated in the third session of the Russian-Mozambican Commission on Economic and Scientific-Technical Cooperation in Maputo during July 2024.

Educational Cooperation Recognition

The Commission protocol highlighted MGRI's crucial role in developing inter-university cooperation with Mozambican institutions, particularly in joint staff training for subsoil use.

Technology Transfer Interest

Mozambican partners expressed significant interest in online educational courses using automated translation technology developed by MGRI's AI Research Centre.

Partnership with National Mining Institute

Collaboration between MGRI and Mozambique's National Institute of Mines on joint scientific projects and programmes for 2024-2027.

Venezuela Initiative: Expanding to Latin America

IMGRI faculty members conduct working visits to Caracas, Venezuela, establishing crucial partnerships for geological and hydrocarbon sector cooperation through lectures and seminars.

Ministry of Petroleum Meeting

Presented MGRI's capabilities in solving oil and gas industry challenges through science-intensive approaches and discussed joint educational programmes.

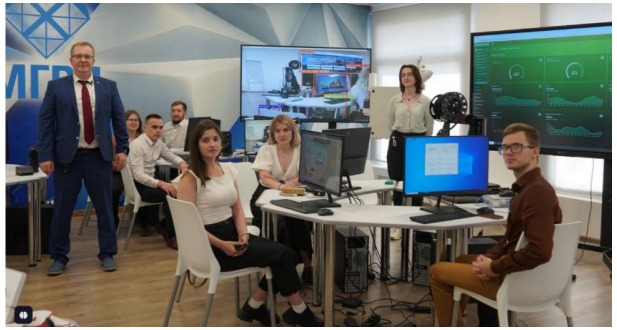
University of Hydrocarbons Partnership

Negotiations with Rector Vilmar Alfredo Castro Soteldo resulted in agreement to prepare a cooperation memorandum covering educational integration and joint projects.

MGRI's Advanced Technology Integration

Digital Tools Revolutionising Geological Education

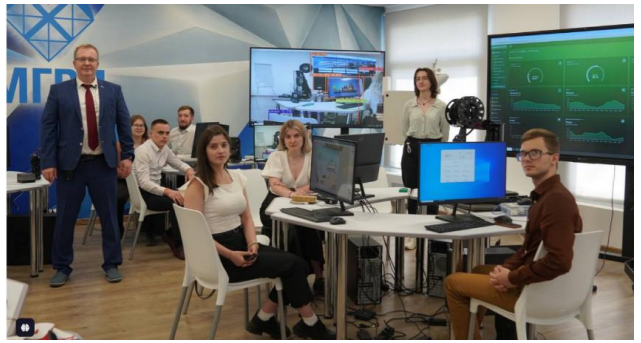
- Geoinformation systems (GIS) for spatial analysis
- 3D modelling of mineral deposits
- Data interpretation programmes for complex geological structures
- Real-time monitoring systems for environmental impact



Three Transformative AI Applications

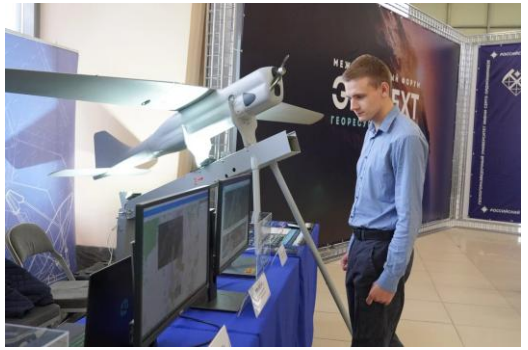
Automated Data Processing

AI algorithms process petabytes of geophysical data within hours, creating detailed 3D models of geological structures and deposits with accuracy unattainable through traditional methods.



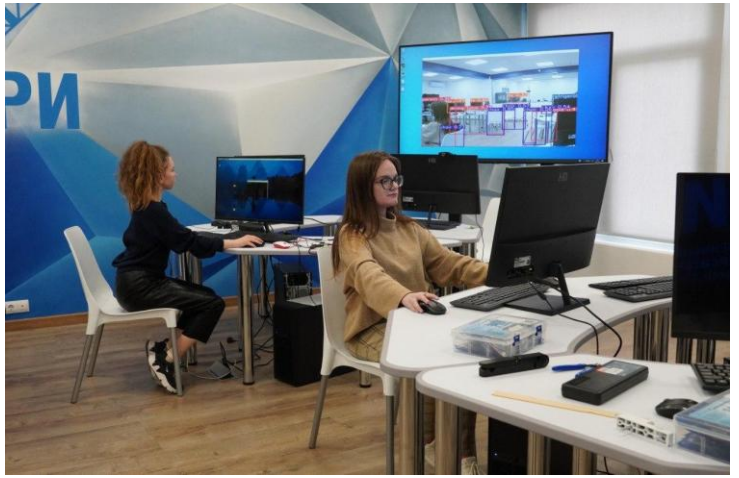
Deposit Forecasting

Machine learning analyses historical drilling and exploration data to identify patterns and predict locations of promising sites whilst assessing geological risks with unprecedented precision.



Extraction Optimisation

AI-based systems manage extraction processes in real-time, monitor environmental safety, and predict emergency situations before they occur—particularly valuable for Vietnam's dynamically developing economy.



Future Prospects and Challenges

Cooperation in geological exploration and AI technology implementation in subsoil management stands at the threshold of a new development stage.

Training specialists with skills in digital geology and artificial intelligence application represents a priority direction for MGRI international activities .

Thank you for your attention!

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Спасибо за внимание!