

International Center for Research and Education on Mineral and Energy Resources

# ICREMER



Akita University

# Creating a global resource field hub, developing sustainable resources, and contributing to resource security

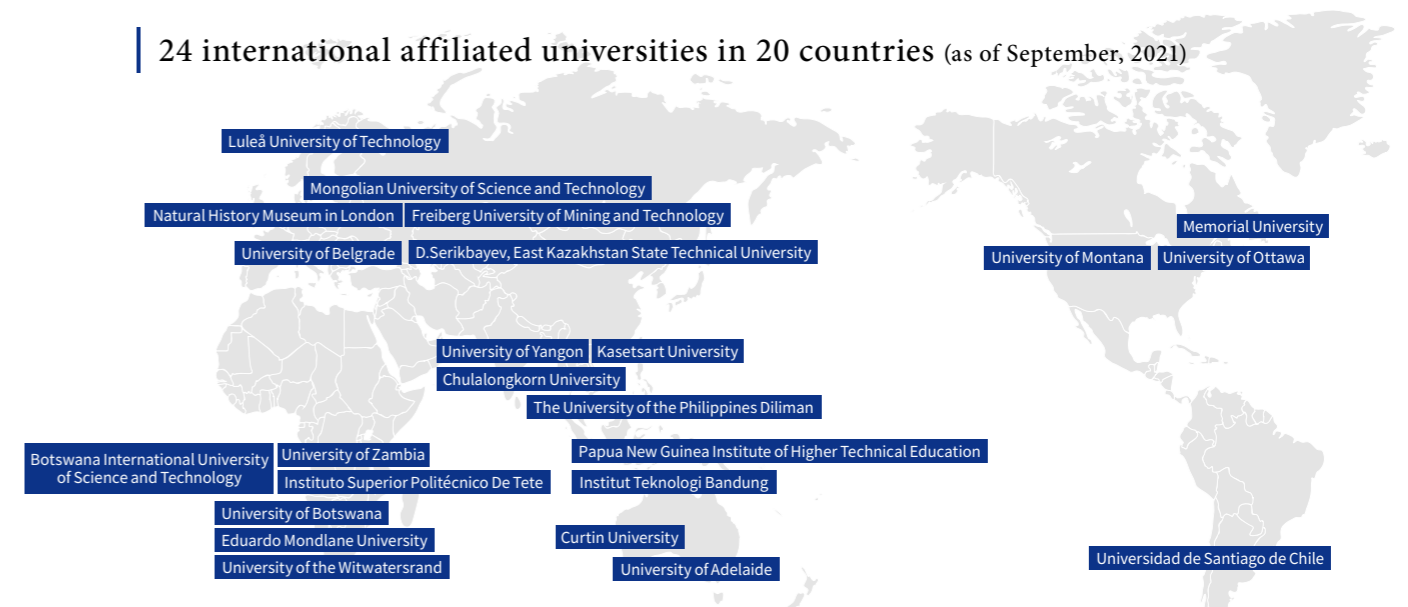
## Greetings from the ICREMER Director, Prof. Atsushi Shibayama



ICREMER was formed as a university facility in 2009. The philosophy and goal in the resources field has been unwavering since then. Furthermore, the environment for resource studies has been diversifying. We are embarking on new endeavors to realize a green society and achieve Society 5.0 and the Sustainability Development Goals (SDGs). ICREMER has spearheaded collaborative activities with resource-rich countries as a specialized group at Akita University. We have a track record of research exchange activities with 24 universities in 20 countries. We are gaining valuable experience and accumulating achievements by conducting short-stay programs and continuing international exchanges with young people. However, those activities have mainly focused on resource production and resource development based on traditional resource science. Now, in the second half of the 21st century, we must reform our approach to resource science to include SDGs, carbon neutrality, contributions to solving global challenges and incorporating artificial intelligence (AI) and data science. In order to convert our resource science of the past 100 years to this new phase, new strategies, visions and execution are essential. It is time we challenge to change while pursuing our existing efforts. Our members, together with all the people involved, will lead the activities to develop our center and open a new era for resource science. We appreciate your support and cooperation.

## Exchange achievements with other universities

24 international affiliated universities in 20 countries (as of September, 2021)



## Domestic partner university

- Hokkaido University
- Waseda University
- Tohoku University
- Kyushu University
- University of Tokyo



JSPS Research Base Formation Project at BIUST in Africa  
Joint Research Meeting and Field Survey (Field Work)



Bor Metallurgical Laboratory in Serbia, Joint Research Meeting with University Of Belgrade, Bor and Field Survey (Field Work)



Educational exchange and university research at the University of the Philippines Diliman



# Basic goals and strategies

— We aim to be an international base of resource education and research that is capable of developing and securing sustainable resources.

**Basic goals** | We will contribute to the development of sustainable resources and enhancing the resource security of the community by being a strong foundation of international resources education and research.

## Purpose of establishment

### ▶ Playing a part in resource diplomacy

We work to secure and maintain good relationships with resource holding countries.

### ▶ Aiming to make an international contribution to the resource field

We share more advanced, suitable and environment-friendly technology with developing countries, as well as enhance human resources by capacity-building and collaboration with universities and research institutes.

### ▶ Fostering international human resources

Japanese researchers and industry professionals are expected to demonstrate their abilities in the international community. We are also required to promote education and research with an international perspective.

## Organizational missions and main activities

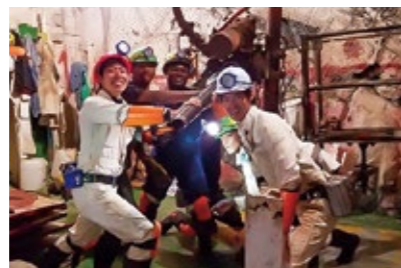
**Contributing to harmonious resource development in resource holding countries**



Main activities

Improving capacity and human resources in resource education and research institutes in resource holding countries.

**Contributing to maintaining and improving international competitiveness of our industry**



Main activities

Developing resource-related human resources

**Contributing to the development of resource science**



Main activities

Human resources exchange and joint-research with domestic and foreign advanced resource-related organizations

## Policy

1



### Designing programs and supporting human resource development

We design programs and support human resource development to strengthen educational and research abilities of resource-related universities and institutions in resource holding countries.

3



### Fostering active human resources on an international stage

We aim to conduct world-class resource science education and research in English

2



### Conducting education practically

We accept graduate students, engineers and researchers from domestic companies and resource holding countries. We offer practical education at a graduate level through on-campus lectures, lab experiments, and resource-related sitevisits mainly in Akita.



4



### Cooperating with related international organizations and promoting advanced resource science research

We offer a fulfilling education in our faculty and department to promotes advanced resource science and cooperate with related domestic or international organizations and universities.

5

### Contribution to Akita

We promote education and research activities in cooperation with local and neighboring companies to contribute to the betterment of domestic resource development.





# Introduction of activities

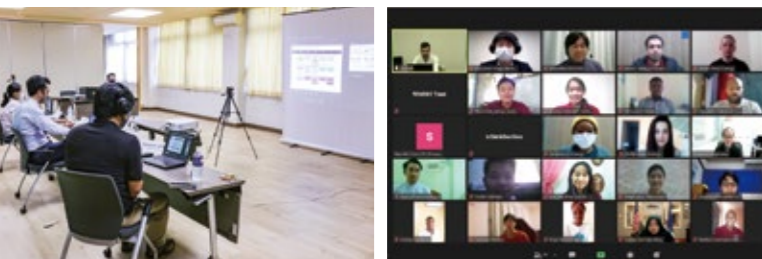
## Short Stay Program

This is an annual four-week training program that we have hosted since 2011. We welcome students of universities from resource-holding and developing countries that have international exchange agreement with Akita University. They can attend intensive comprehensive academic lectures, conduct field surveys in Akita and surrounding areas, and participate in laboratory experiments related to the lectures and field surveys. (18 students from 8 countries in 2019, 16 students from 7 countries in 2020 and 23 students from 14 universities in 13 countries in 2021)



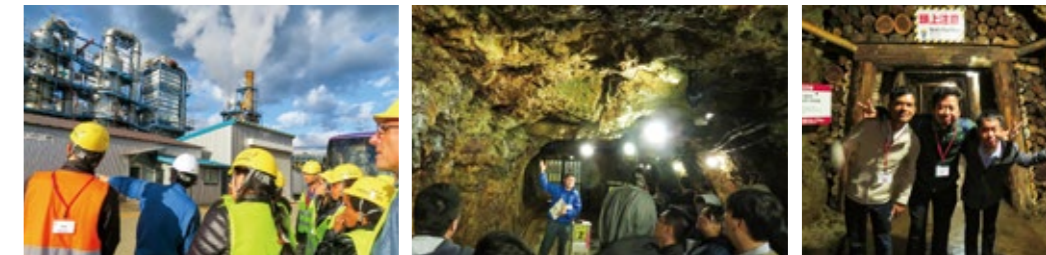
## Lectures

We offer comprehensive lectures to help participants understand resources in a comprehensive manner, including economic geology, economics and international relations.



## Field Trip

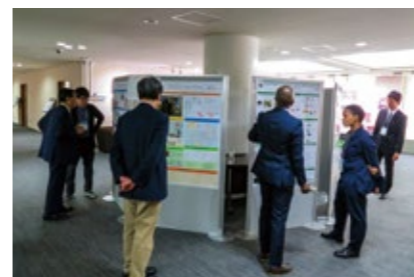
Students visit facilities related to resource development, such as smelting plants and underground mine tunnels to help them understand the environment, endeavors and problems in an actual operation.



Cultural experience!

## International symposium

Our international symposium is held annually to promote academic exchanges in the field of resource science and to introduce our latest endeavours and research results.



## Practical training

We conduct advanced experiments and practical training using the state-of-the-art laboratory equipment available in Akita University.





# Faculty Members



Specializing in mineral processing engineering and recycling engineering

**Prof. Atsushi Shibayama**



Specializing in drilling engineering, petroleum engineering, geothermal engineering

**Prof. Shigemi Naganawa**



Specializing in resource economics

**Prof. Tsuyoshi Adachi**



Specializing in resource separation engineering

**Dr. Kazutoshi Haga**



Specializing in petroleum geology

**Dr. Shun Chiyonobu**



Specializing in rock mechanics, DEM simulation, rock crushing, mining engineering, geomechanics

**Dr. Saadat Mahdi**



Specializing in international political economy, resource geopolitics, governance theory

**Dr. Fumiaki Inagaki**



Specializing in renewable energy systems, geothermal energy

**Dr. Mohammadzadeh Bina Saeid**



Specializing in geochemistry, mineralogy, economic geology

**Dr. Manalo Pearlyn Cabarubias**



Specializing in remote sensing, computer vision, image processing, machine learning

**Dr. Hisatoshi Toriya**

## | From Tokyo

By plane (about 65 minutes)



By train (Akita bullet train) (about 4 hours)



## | From Akita station

By bus (about 5 minutes)



Bound for TEGATAYAMA DAIGAKU BYOUIN or AKITA ONSENN \*weekday only

By taxi (about 5 minutes)

On foot (about 15 minutes 1.3km)



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