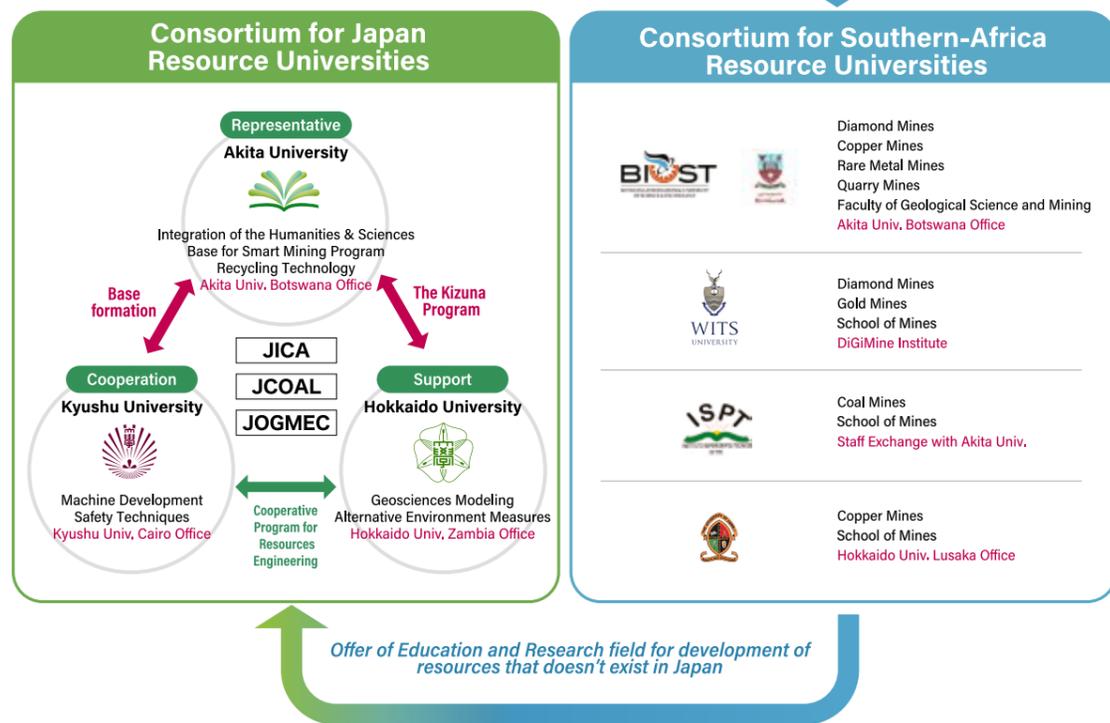# Consortium for Japan-Africa Resource Universities

Training of global human resources between Japan and Africa, who, using their combined knowledge of both past and present resource development and information engineering, will be able to implement new resource development technology in the coming decades (Smart Mining).

Offer of Japanese advanced resource technical research (Smart Mining) & education

Consortium for Japan Resource Universities

Representative
Akita University

Integration of the Humanities & Sciences
Base for Smart Mining Program
Recycling Technology
Akita Univ, Botswana Office

Base formation

The Kizuna Program

JICA
JCOAL
JOGMEC

Cooperation
Kyushu University

Machine Development
Safety Techniques
Kyushu Univ, Cairo Office

Cooperative Program for Resources Engineering

Support
Hokkaido University

Geosciences Modeling
Alternative Environment Measures
Hokkaido Univ, Zambia Office

Offer of Education and Research field for development of resources that doesn't exist in Japan

Consortium for Southern-Africa Resource Universities

BIUST / University of Botswana
Diamond Mines
Copper Mines
Rare Metal Mines
Quarry Mines
Faculty of Geological Science and Mining
Akita Univ, Botswana Office

WITS UNIVERSITY
Diamond Mines
Gold Mines
School of Mines
DiGiMine Institute

ISPT
Coal Mines
School of Mines
Staff Exchange with Akita Univ.

Copper Mines
School of Mines
Hokkaido Univ, Lusaka Office

CONTACT YOUR SUPERVISOR TO APPLY FOR THE PROGRAM

University of the Witwatersrand, Johannesburg :Prof.Fred Cawood
<Frederick.Cawood@wits.ac.za>

The University of Zambia:Prof.Bunda Besa /Prof. Emmanuel Chanda
<bbesa@unza.zm>/〈emmanuel.chanda@unza.zm〉

The Polytechnic Institute of Tete:Prof.Bernardo Bene
<bbene@ispt.ac.mz>

Botswana International University of Science and technology:Prof.Elisha Shemang
<shemange@biust.ac.bw>

University of Botswana:Dr.Zibisani Biza Bagai
<bagaizb16@gmail.com>

Office
Akita University Smart Mining Program

Facutly of International Resource Sciences
Graduate School of International Resource Science
1-1 Tegatagakuen-machi, Akita City 010-8502
Phone:+81 18-889-2382
https://www.akita-u.ac.jp/shigen/iuep-w-safrica

Akita University

Akita University/Kyushu University
Smart Mining Program

INTER-UNIVERSITY EXCHANGE PROJECT ✿ MEXT

Akita University/Kyushu University

An innovative program for development of core human resources for smart mining to lead sustainable resource development in Southern Africa

Zambia
Mozambique
Botswana
South Africa

Southern Africa

Purpose and Overview of Exchanging Program

In resource-rich Southern Africa countries, advanced development of those underground resources is critical for economic growth, with an urgent need for increased education and research ability to better equip personnel with the skills needed to balance effective resource development with environmental conversation. This coursework-based undergraduate and master's program develops a base for multi-layered enterprise development. Information engineering (AI, IoT, and Big Data etc.) is the core technology of "Industrial 4.0" and "Society 5.0" that is in turn based on both the traditional and current state-of-the-art in which Japan excels. This program will produce globally-minded individuals who possess the ability to practice the future of resource informatics (Smart Mining) in both Japan and Southern Africa.

Nurturing Global Talent

Training of the global leaders skills listed below

1. Practical skills based on advanced technical knowledge
2. Ingenious technological development skills based on a solid foundation of Information Engineering to allow for a dimensional transition into the next stage of current resource development studies
3. Design and management compatibilities with a panoramic view of the whole resource and environmental system
4. Ability to negotiate between producer and consumer countries with a sense of balance that demonstrates a firm understanding of the positions of both parties

Curriculums

Selection of Students for the Master's Program 2021～

A total of 10 undergraduate students can participate in the master's program regardless of participation in the undergraduate program.

Short-Stay Program 2021～ (UG)

A total of 10 undergraduate students from Africa (WITS, BIUST, UB, ISPT, and UZ) will visit Akita University to attend lectures and meet with representatives of companies and government agencies.

Resource Fieldwork Abroad 2021～ (UG)

A total of 10 undergraduate students from Akita University and Kyushu University will visit one of the Southern Africa resource consortium universities to attend an approximately month-long training session.

Collaborative Training of Humanities (Online) 2022～ (M1)

Discussion exercise and liberal arts classes related resource development, such as resource economics, environmental economics, Sub-Sahara Africa development, and international relations, will be held online. This unit is to provide the theoretical basis of research development through comprehensive education in sustainably resource development.

Virtual Traveling Class (On-Demand) 2022～ (M1)

Students will attend virtual, on-demand lectures that simulate travel to Akita University, Kyushu University, and Hokkaido University to further foster a basic understanding of resource development.

Basics of Mining Informatics (On-Demand) (M1～M2)

Both Japanese and African students will self-study the basics of resource informatics by using GOOCUS (LMS) (This is fundamental engineering informatics education for resource science students and is a core part of this program).

Japanese/English Language Training (On-Demand) (M1～M2)

On-Demand self-studies by using GOOCUS (LMS)

Collaborative Training of DigiMine (M2)

Students will receive approximately 10 days of practical experience in the Smart Mining technique that is currently under development at the DigiMine Lab. In Witwatersrand University. This will provide important context to the knowledge obtained through the Basics of Resource Informatics unit.

Collaborative Research Project (M2)

A collaborative research team comprised of students from the Japan-Africa program will participate in a two-week initiative at the Akita University International Center for Research and Education on Mineral and Energy Resources following a course set by the Consortium of Japan-Africa Resource Science Universities. The team will be mixed of Japanese and African students to deepen engagement and increase cross-cultural awareness. In structuring the course, requests from both faculty members and resource professionals in both Japan and Africa are considered.

Certificate

Graduate students who participate in the program will receive a master's degree from their own institution and certificate of program completion.