

GIMRT is the International User Program of Institute for Materials Research (IMR), Tohoku University

IMR is the International Center of Excellence for Materials Science founded in 1916



Our Mission

- ◆ Conducting a broad range of basic and applied materials research
- ◆ Creating new materials that benefit society
- ◆ Contributing to civilization and the well-being of mankind

Area - Category of Facility, Center, and Research Group

- Research Divisions and Groups
- International Research Center for Nuclear Materials Science
- Cooperative Research and Development Center for Advanced Materials
- High Field Laboratory for Superconducting Materials
- Center for Computational Materials Science
- Quantum Beam Center for Materials Research
- Innovative Knowledge Hub for Humanities and Materials Science

Type - Proposal Scheme

- **Single Visit** - Research Visit to IMR
- **Bridge Research** - Research Visit/Collaboration including **3rd Party**
- **Oversea Research** - Support for **Young Researcher of Japan** to perform for weeks of collaboration research in **Oversea Institutions**
- **Workshop** - Support for organize workshop at IMR

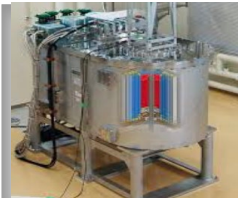
World Leading Facilities



International Research Center for Nuclear Materials Science

- Unique post irradiation materials research infrastructure
- World leading laboratory for physics and materials science on actinide

IRCNMS



High Field Laboratory for Superconducting Materials

- The world highest superconducting user magnet by unique cryo-free technology
- Development of superconducting and magnetic materials

HFLSM

Materials Science Oriented Supercomputer

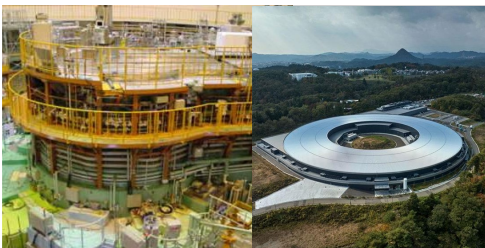


Center for Computational Materials Science

CCMS

- Supercomputer oriented for computational materials science
- Member of K computer user network and High-Performance Computing Infrastructure

Collaboration with Large Scale Facilities



Quantum Beam Center for Materials Research

- Contributing to the formation of complementary quantum beam platform
- Integrating material science and quantum beam usage

QBCMR



Cooperative Research and Development Center for Advanced Materials

- Comprehensive support for materials development and investigation
- Sharing of knowledge to develop new materials

CRDAM

Research Division and Groups

Collaboration of expert of Materials Research

RDG

RDG: Research Divisions and Groups
RDG program is the joint researches between users and IMR members of each RDG



Prof. Nomura : **Theory of Solid State Physics**

Theoretical Investigation of Quantum Many-Body Physics

Prof. Fujiwara : **Crystal Physics**

Crystal Growth for the Future of the Human Being Society

Prof. Nojiri : **Magnetism**

Exploring Frontier of Magnetism in High Magnetic Fields

Prof. Sakai : **Low Temperature Physics**

Coming Soon

Prof. Sasaki : **Low Temperature Condensed State Physics**

Emergent Properties of Correlated π -electrons in Flexible Assembly of Organic Nanostructures

Prof. Fujita : **Quantum Beam Materials Physics**

Exploring Spin Functions Using Quantum Beams: Visualizing the Dynamic World of Electrons

Prof. Onose : **Quantum Functional Materials Physics**

Spins Make Materials Functional

Prof. Furuhashi, Prof. Miyamoto : **Microstructure Design of Structural Metallic Materials**

Advanced Microstructure Control for Developing New Structural Metallic Materials

Prof. Kubo : **Materials Design by Computer Simulation**

Solution of Energy and Environmental Problems and Realization of Safe and Secure Society by Computer Simulation

Prof. Akiyama : **Environmentally Robust Materials**

Elucidation of Effects of Hydrogen on Material Properties and Design of Environmentally Robust Materials

Prof. Kasada : **Nuclear Materials Engineering**

Materials Resistant to Extreme Environments Open the Door to the Next Generation Base Load Power Plants

Prof. Yoshikawa : **Advanced Crystal Engineering**

Novel Functional Crystals and Advanced Sensors for Future

Prof. Ichitsubo : **Structure-Controlled Functional Materials**

Development of Novel Functional/Structural Materials Through Structural Control or Phase-Transformation Process

Prof. Miyasaka : **Solid-State Metal-Complex Chemistry**

Design of Coordination Polymers Toward the On-Demand Control of Their Correlated Electrons/Spins and Chemical Reactions

Prof. Kato : **Non-Equilibrium Materials**

Development of New Structural/Functional Materials through Nonequilibrium and Liquid Metal Dealloying Processes

Prof. Seki : **Magnetic Materials**

Materials Fabrication for Magnetics/Spintronics by Nanostructure Control and Composite Design

Prof. Orimo : **Hydrogen Functional Materials**

Materials Science of "HYDRIDES" for Energy Applications

Prof. Kumagai : **Multi-Functional Materials Science**

New Ceramic Materials Research by Integration of Advanced Computational Technology and Informatics

Assoc. Prof. Yamanaka : **Deformation Processing**

Advanced Processing for Developing Novel Structural Materials

Prof. Aoki : **Actinide Materials Science**

Heavy Fermion Physics of Actinide and Rare-Earth Compounds

Prof. Watanabe : **Analytical Science**

Development and Applications of Nano Fine-structure Characterization and Chemical Analysis for Understanding Various Materials Properties

Prof. Chen : **Research Laboratory on Quantum Materials**

Coming Soon

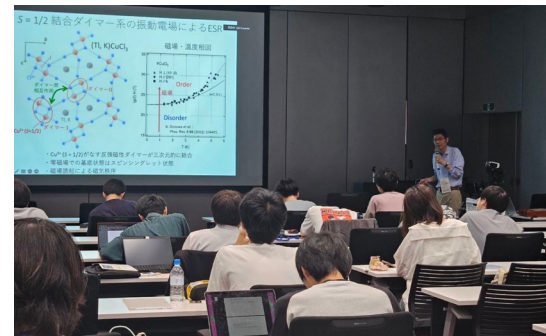
Prof. Umetsu : **Cooperative Research and Development Center for Advanced Materials**

Advanced Materials Make Dreams Come True - A Bridge to the Future

Prof. Awaji : **High Field Laboratory for Superconducting Materials**

Exploring Novel States of Materials in High Magnetic Fields

Workshop, Summer School



Innovative Knowledge Hub for Humanities and Materials Science

Materials science

(Chemical & Quantum Beam Analysis,
Fabrication & Computational technology...)



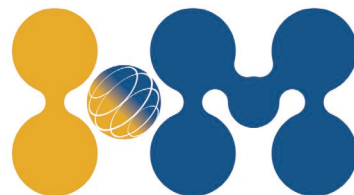
Humanities

(Cultural Heritage, Natural Historical Properties,
Art...)



IKH was established in 2023 to create a new academic field by the close collaboration between humanities and materials sciences. To achieve this goal, IMR aims to build the hub for new collaborative research with [seven academic institutions](#) covering varieties of science.

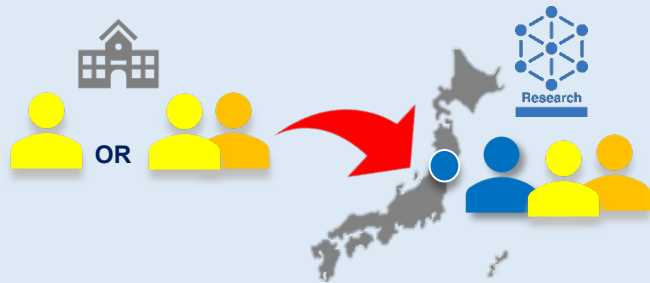
To open the new academic discipline, new proposal scheme including long-term proposal category, will be implemented to GIMRT.



IKH

Innovative Knowledge Hub for
Humanities and Materials Science

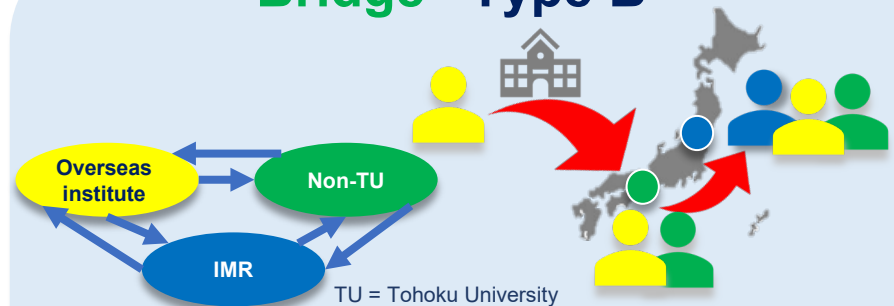
Single Visit Type S



Standard research visit to IMR (1~2weeks)

- Multiple visitors/Multi persons visit available (Ph. D student can be collaborator)

Bridge Type B



Multi-core Research Collaboration

- for Overseas researchers
 - Visit IMR together with non-TU collaborators
- for non-TU domestic researcher
 - Invite a researcher from overseas institute to own institute
 - Work together at IMR and at J-PARC, Nano-Terasu etc.

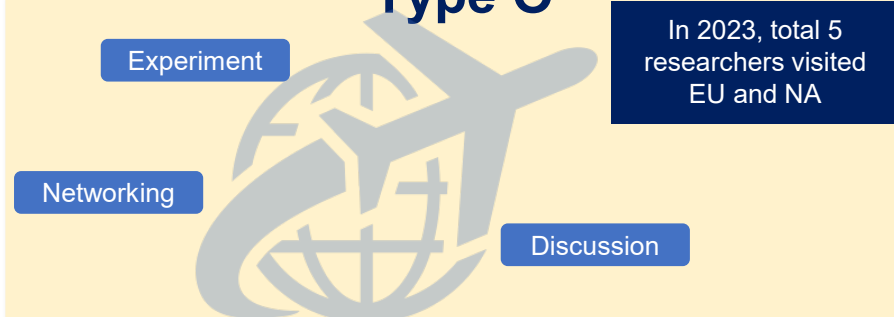
Covis Co-research visit



Team visit (combination of Long & Short stay) for strong and sustainable co-research team

- Example
 - Residential type visit (Type G= Guest Professor)
 - +
 - Short-term intensive visit (Type S)

Overseas Research Type O



For young scientist (under 40) in Japan (2 weeks ~ 3 months)

- Travel support (up to JPY 0.5M) to visit overseas institutes for research collaboration

High Magnetic Field Laboratory for Superconducting Materials

Support for user

- Access for HIGH Field Magnets
- Technical Support for Experiments
- Support for Travel Expense
- Support for VISA and other Documents



Duty for user

- Write a Completion Report
- Publish Results
- Buy Proper Insurance (travel, medical, and accident)
- Safety Training
- Provide Documents Necessary for Visit and Reimbursement



For oversea proposal, the maximum travel support is 0.5 MJPY/proposal
There is some reduction based on the review scoring

How to apply

1 Read Proposal Call and Guideline

[Proposal Call and Guideline are here](#)

2 Find Facilities or Research Groups to use/collaborate and check what you can do there

3 Find an IMR Local Contact and discuss if your proposal can be performed

4 Get a **User ID** at GIMRT User System and prepare **Proposal** [Proposal forms are here](#)

5 Submit a proposal at GIMRT User System

[GIMRT application site](#)

[Information of IMR Researchers](#)

[Information of GIMRT Program](#)

Recent Activity of GIMRT at SNS

▪ [X \(Twitter\)](#)



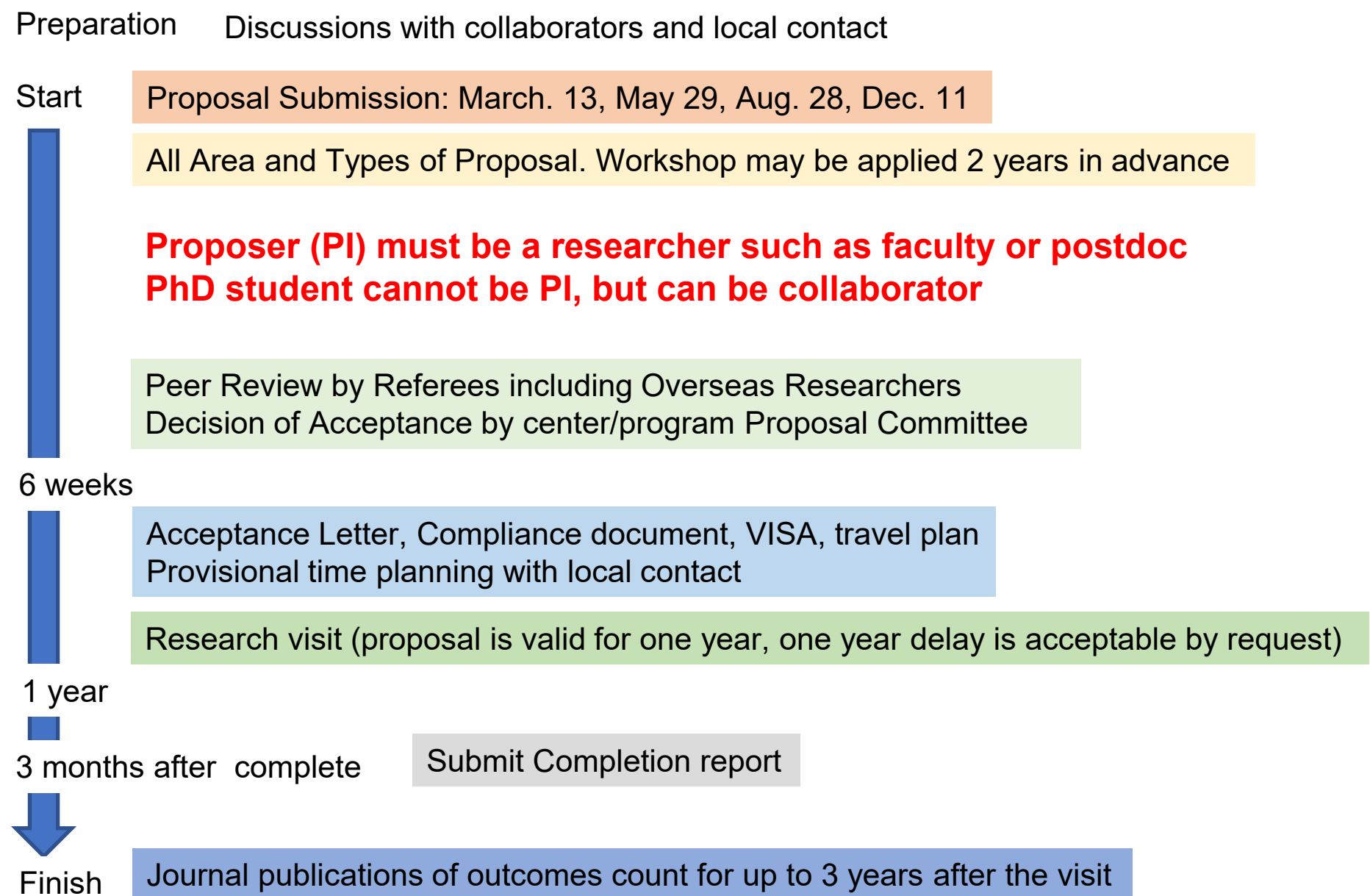
▪ [Instagram](#)



▪ [Threads](#)



Application and Review Process



Welcome your application

Join GIMRT !

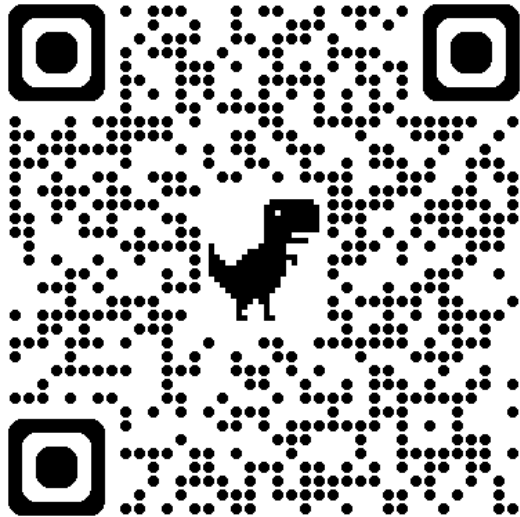


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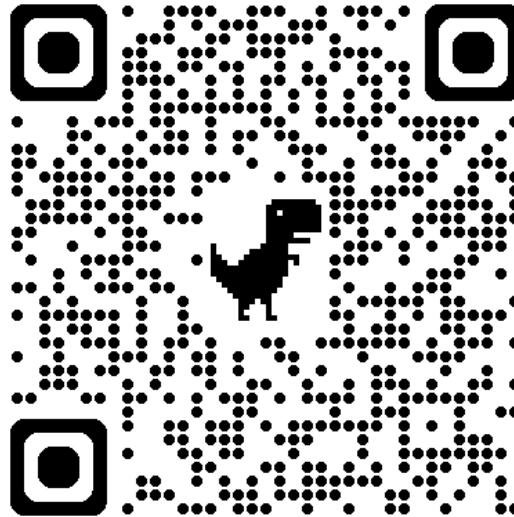
[Visit Our Website For More Information](#)

Introduction Movies Are Also Available

Bridge Scheme



Covis Scheme



Oversea Research

