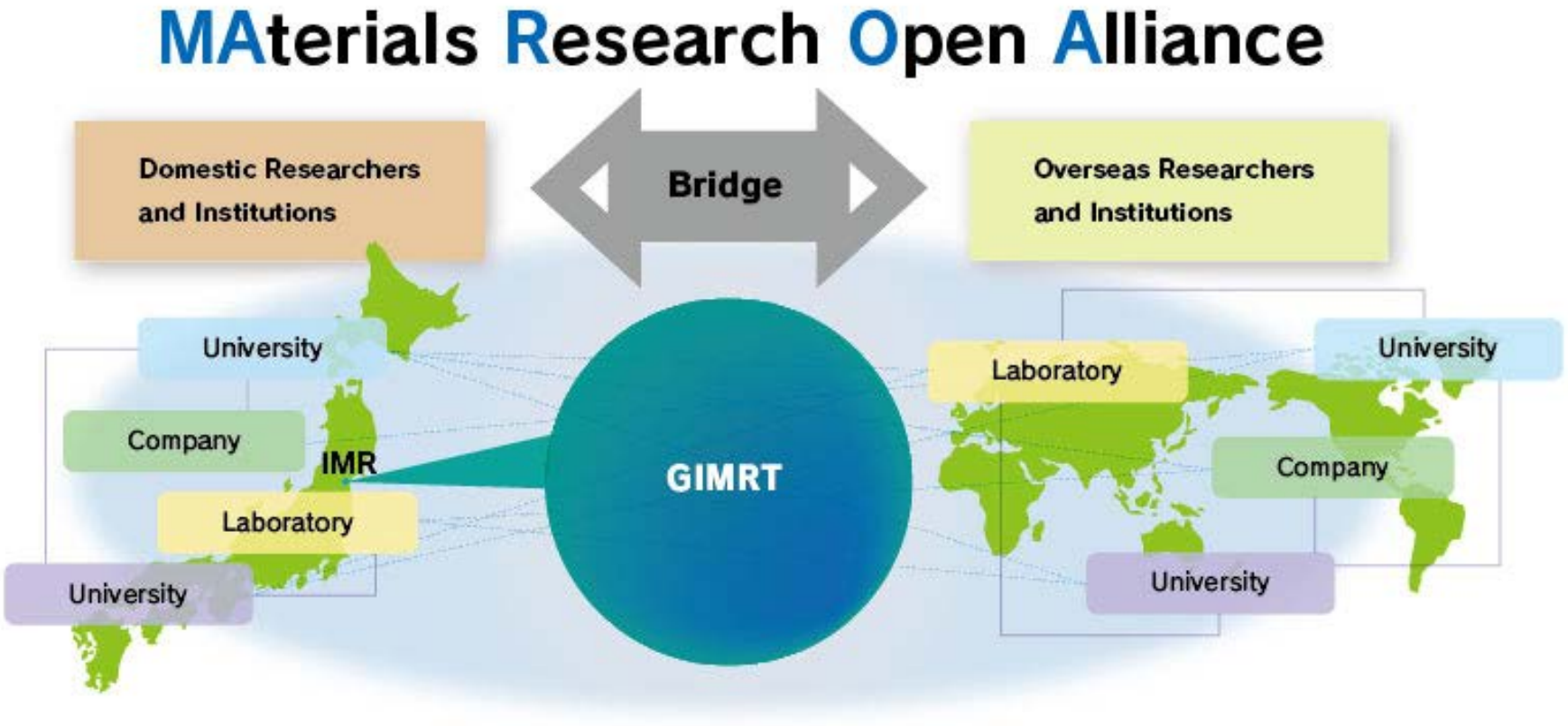
GIMRT Global Institute for Materials Research Tohoku
-International hub for collaborations in materials science-

Global Institute for Materials Research Tohoku (GIMRT)

Bridge multi-core collaboration research to establish international open research alliances in materials science.



Domestic /overseas researchers and facilities collaborate on the open system of International Joint Research

Research visit to IMR- basic single research visit

Objective

The program supports travel and staying expenses for overseas researchers who are willing to stay for a few weeks at IMR. IMR offers opportunity to conduct research collaboration and to use IMR resources developed for materials science.

How to apply

1. Find an IMR local contact (information of centers/divisions/groups, see web site)
2. Select one of centers or divisions/groups as the place to do research
3. Get an user ID at GIMRT user system
4. Submit a basic proposal at GIMRT user system. The contents of proposals are different for different programs. Application call is 4 times/year.

What will be supported (upper limit depends on the review scoring)

1. Travel expenses of the proposer and collaborators to come to IMR
2. Domestic travel expense for visiting non-TU collaborators to perform complemental collaborating research as long as it is short.

Bridge Proposal-International Multi-core Research Collaboration

Overseas Institute

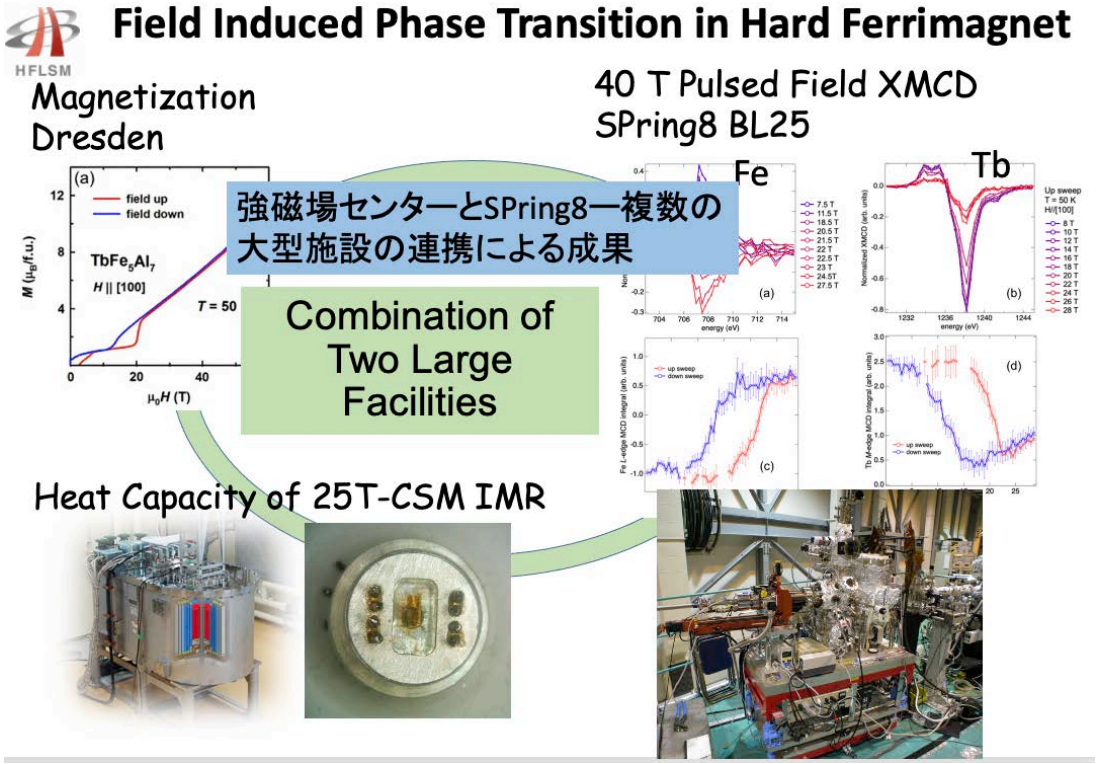
Non-TU Domestic Institute

Overseas Research Support < 0.5 M JPY

Single Visit
Travel Support <0.5 MJPY

Bridging multi-core Research
Additional Travel Support
<0.1 M JPY/each

IMR @ Tohoku Univ. (TU)



Flexible cost sharing

Other University

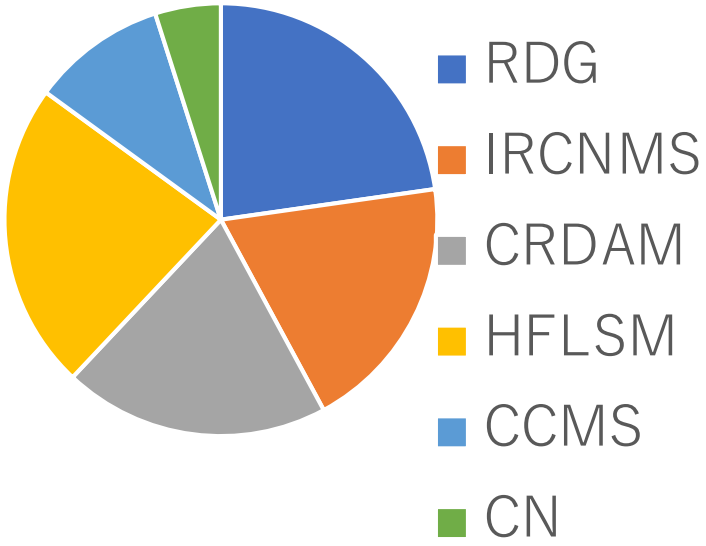
Flight	IMR Visit	Collaboration Visit	Flight

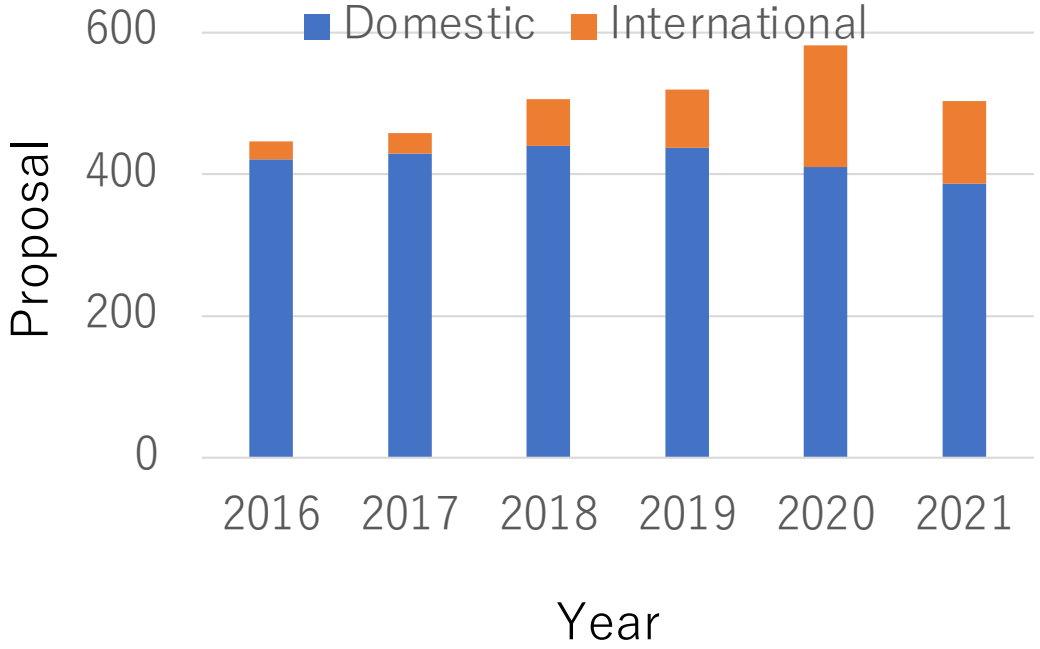
Proposal Submission
4 times/year
Not bound to fiscal year
Dec. Mar. May, Aug.

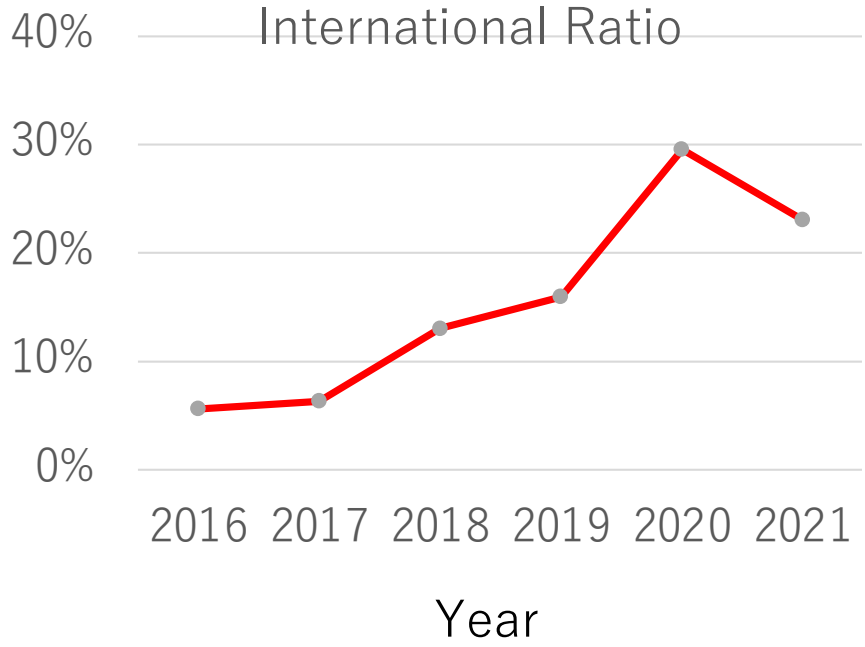
User Office

Application Statistics

	2021			2020		
	Domestic	International	Total	Domestic	International	Total
RDG	88	31	119	96	53	149
IRCNMS	75	44	119	79	40	119
CRDAM	77	11	88	97	9	106
HFLSM	89	12	101	90	17	107
CCMS	39	12	51	36	12	48
CN	19	6	25	16	7	23
Total	387	116	503	410	172	582







共同利用のcovid19対応まとめ

1. 5月後半から学内利用の再開、6月から県外からも受け入れ
2. 装置・設備は100 %稼働状態
3. 強力な感染防止対策の実施

   来訪者の登録, ペーパーレス手続, 接触者トレース,
   入室人数の管理, 共有物の消毒, 人数の絞り込み
4. 共同利用支援策

   ユーザーミーティング実施
   旅費の加算・弾力化(キャンセル等への対応)
   成果発表への支援
   リモート実験実施経費支援
   換気等の環境整備
5. 国際共同研究の推進

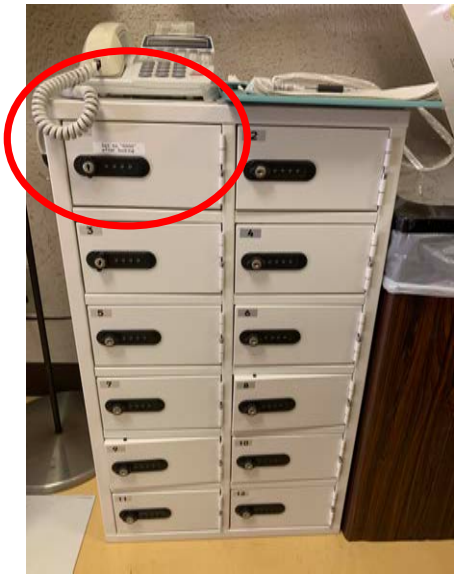
   リモート実験の実施
   研究計画の柔軟な運用
   海外からのフェローシップの受け入れ(10月より)
   国際会議の開催(ARHMF2020, 300名参加)
   中小学会との学会共催(ノウハウの提供)

来所への対応: トレース, 非接触, ペーパーレス

1. 玄関
   玄関は終日施錠。最初はインターホンで連絡して解錠。時間外はあらかじめカードキーを預けるように手配。
2. カードの受け取り
   玄関ロビーの暗証番号つきロッカーで受け取り（2147）
3. 研協との書類のやり取り
   ２号館１階警務員室脇の鍵付きロッカー利用
4. 靴の利用
   安全靴は、玄関クリーンボックス内から消毒済みのものを利用。実験期間中は共用せず同じ靴を使う。


玄関のインターホン


靴用クリーンボックス


鍵付きロッカー

2号館鍵付きロッカーの案内

共同利用の支援プログラム–今が大切

1. 共同研究型(リモート実験と組み合わせ)の実施支援
   実施経費, 消耗品経費を追加配分
   実施人員となる学生謝金の支払い
   装置使用料の減免

2. リモート共同実験の支援(Team Viewer等のVCN, webカメラ)

3. ワークショップやセミナー開催への支援

4. 換気扇設置など感染防止対策への間接的な支援

5. 若手の成果発表の支援, 論文オープンアクセス, 査読料, 投稿料, 会議参加費

6. 長期滞在型共同利用の新設 (4-6週間)

国内の利用者は旅費ベースで昨年の65~75 %程度

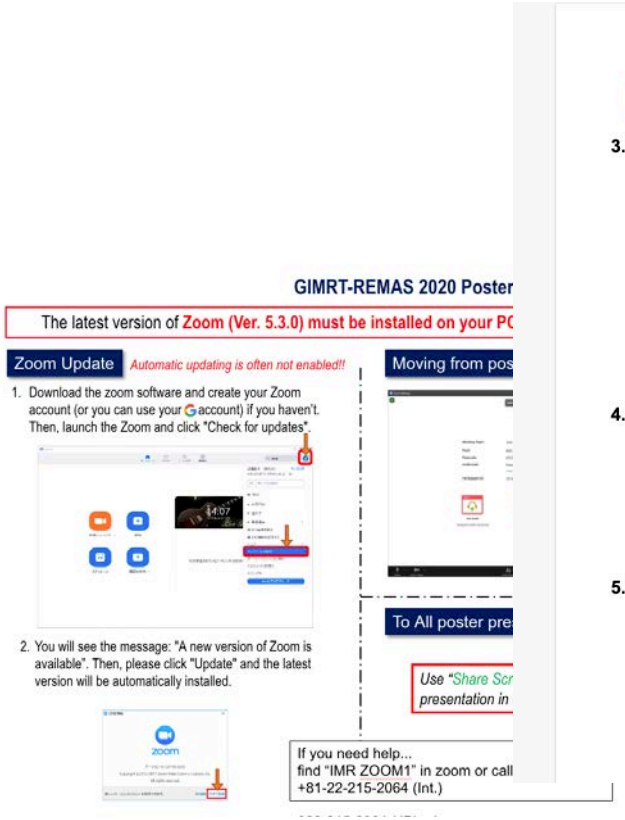
中小規模学会の学術交流の支援

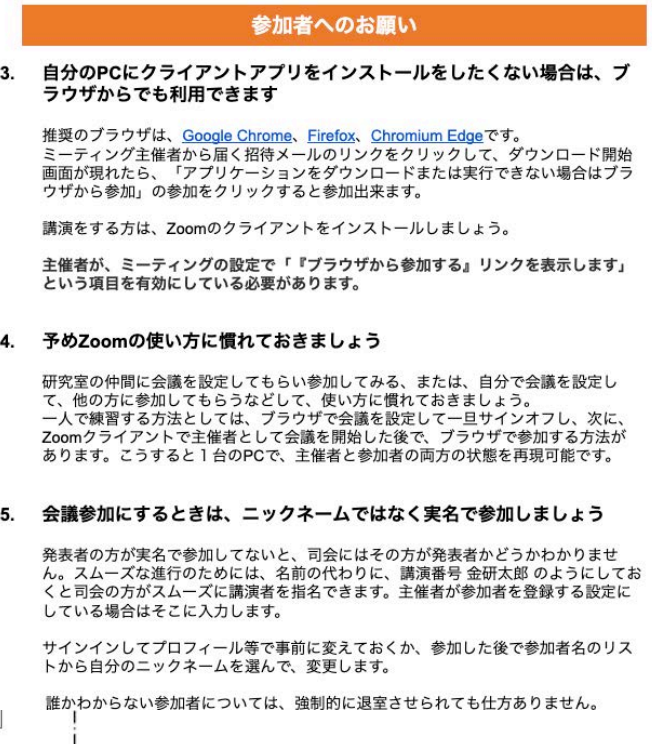
問題点　大規模学会に比べ資金、リソースが不足ーオンライン開催に対応が困難
　　学生や若手研究者の発表経験や教育に空白が生まれる

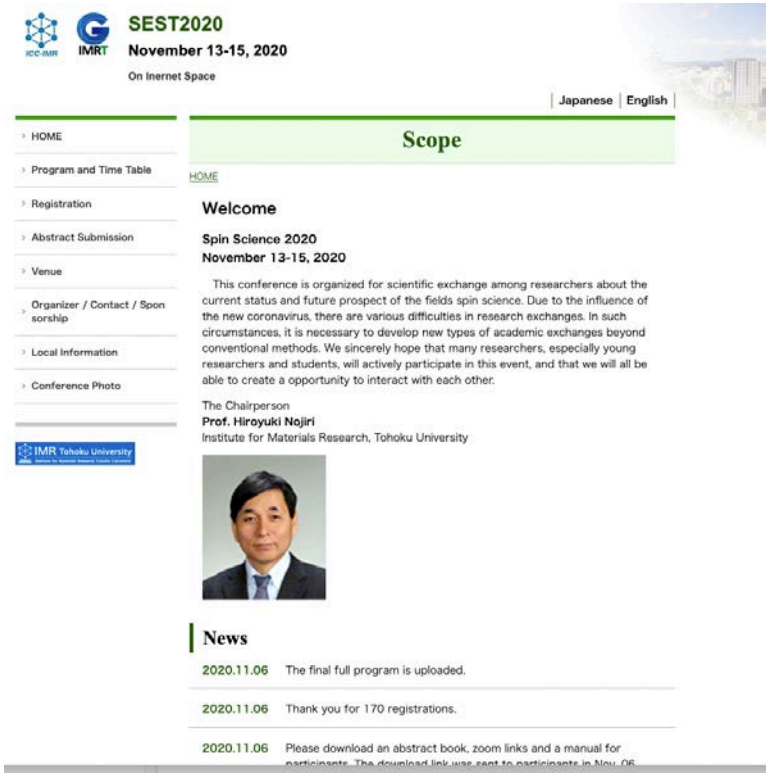
金研の対応　　中小学会の会合を金研共催･GIMRT共催とすることで実施を支援

具体的な手法ウェブサイトやオンライン開催の経験、マニュアル、リソースを共有

金研を中心とする研究のネットワークを強化







For post-Corona, over come to “Corona-gap”

Suspension of international exchange more than one year is very unusual in last 50 years, despite the exchanges over internet for advanced communication tools

The post-corona will be affected by the gap in educations, exchanges in research experiences, international academic exchange and exchange of students/researchers.

Quick recovery of the research collaborations/exchanges are necessary

GIMRT program will be conducted by combining long stay programs such as fellowship, guest professor etc.

ポストコロナに向けたアジア地域学術ネットワークの形成

問題点　ポストコロナでは引き続き、地域交流の重要性が高まる
　　国際学会での地位向上が学術における地位向上には欠かせない
　　アジア地域での学術リーダーとしての地位強化が必要

金研の対応　　GIMRTの機能を生かして、アジア地域の学術ネットワーク形成を主導

具体的な手法　創立と維持のためのインターネットリソースの提供、創生者としての影響力の確保、アジアからの人材と研究活動の集積地の形成

日本の研究の物質・材料科学分野での国際的な地位強化と主導性確保

実例: アジアオセアニア物理学会連合に凝縮系物理・材料分科形成
　　12月5日に金研で設立総会

Declaration of the founding of the Division of Condensed Matter Physics in the Association of Asia Pacific Physical Society

1st /Jan. /2021

Condensed Matter Physics is one of the major parts of physics that covers a wide range of disciplines. Diversity and interdisciplinarity are the essential features of their activities. It is constantly developing with strong interactions with various scientific areas and contributes to the expansion of human knowledge and the developments of society.

In the Asia-Pacific region, research and education in condensed matter physics are actively studied, and exchanges of personnel and knowledge are becoming more active across the region year by year and global international exchange. Given this situation, there is a strong need to form an organization representing the scientific community for systematic and continuous exchanges to further develop condensed matter physics in the Asia-Pacific region.

There was a meeting at Asia-Pacific Physics Conference 2019 in Malaysia, which was stimulated by the call for the division formation upon the initiative of the council of the Association of Asia Pacific Physical Society. It was then followed up by voluntary actions from condensed matter physics communities across the region. We have been continuing our discussion to form the Division of Condensed Matter Physics, despite the difficult situation due to the coronavirus in most of 2020. We have since made our significant steps toward the formation of the division. And we came to conclude that we will form the division for the following purposes.

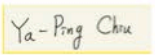
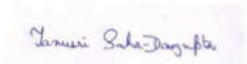
Division of condensed matter physics will promote the progress and disseminate condensed matter physics knowledge and its application through research presentations, exchange of knowledge, and corporation among members and other academic societies. We thereby aim to contribute to the development of academic research. It will cover the diverse research fields of condensed matter physics in the collaboration of related divisions/organizations/groups in the Association of Asia Pacific Physical Society.

Here, we declare the founding of the Division of Condensed Matter Physics and invite many researchers in the Associations of Asia Pacific Physical Society to join this division.

The names of the formal founding members and the initial participation members of the division are given in below.

Signatories of the founding and initial members.

The founding members

Name in Print	Date	Signature(electronic)
Hyeonsik Cheong	22-Dec-2020	
Ya-Ping Chiu	Dec. 23, 2020	
Hyoung Joon Choi	2020.12.28	
Kwang-Yong Choi	22-Dec-2020	
Feng-Chuan Chuang	Dec. 23, 2020	
Tanusri Saha Dasgupta	Dec. 18, 2020	

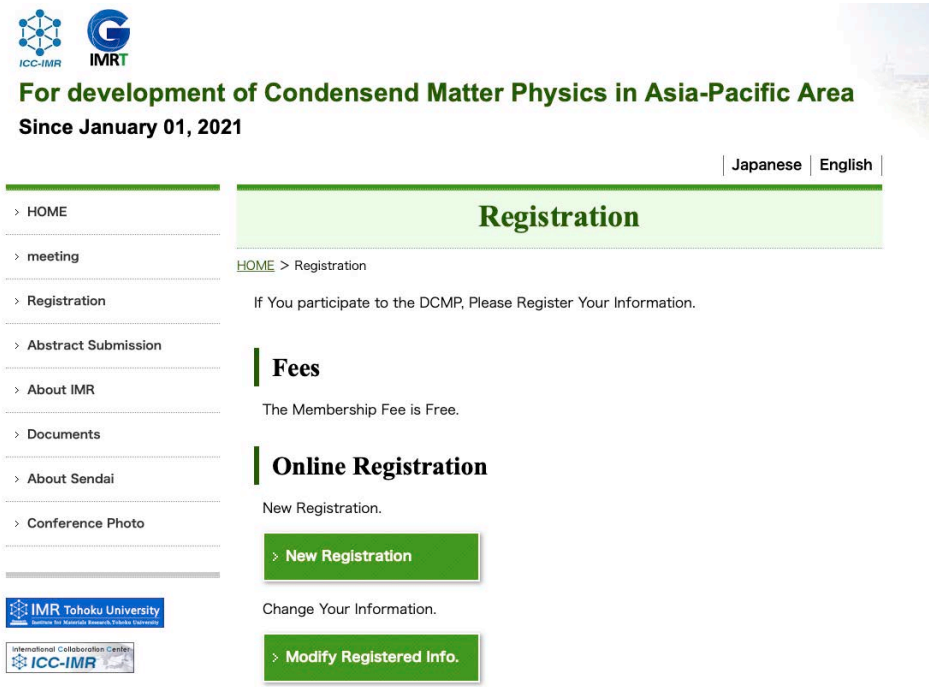
Condensed Matter Division in AAPPS

Register membership at following website.
http://aapps-dcmp.imr.tohoku.ac.jp/eng/index.html

What are the needs and the merits to have membership?

1)Receive news letter reporting activities of condensed matter physics
2)Information for meetings, schools, user facilities, exchange programs and open positions,
3)Participation to the division conference and Asia-Pacific Physics Conference
4)Participations to the annual meetings for other physical societies thorough the joint session.
5)Submission of useful information for distribution in the condensed matter physics community
6)Ask endorsement/cooperation for meetings you are going to organize
7)Showing your international activity

Memberships
1)Regular Member-Physics PhD or equivalent education
2)Associate Member-for PhD students, Physics Bachelor or equivalent education,
The membership fee is free.



Japan High Magnetic Field Collaboratory

Condensed Matter and Material Science Community

Unified Steering Committee

Three core institutions

HFLSM
IMR, Tohoku Univ.

MGL
ISSP, Univ. of Tokyo

AHMFL
G. S. of Science, Osaka Univ.

Co-operation of three advanced facilities as single national laboratory

Steady field facility with supper conducting and hybrid magnets

Pulsed Field facility with destructive and non-destructive magnets

Multi-extreme conditions and co-operating magnets

Evaluate and certify superconducting materials
Industry Collaboration

Cooperative Institutes
MPRC, Kobe Univ.
FIR-UF, Fukui Univ.
RFHMFE, Osaka Pref. Univ.
Interdisciplinary Research

Co-operating Magnets

Other large scale facility

SPring-8

J-PARC

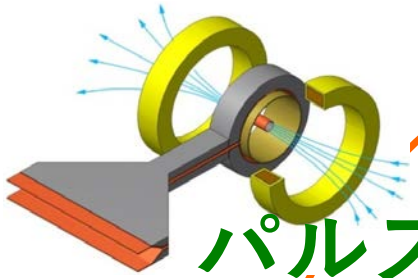
Support by users from more than 90 institutions

March, 2019, MOU for the Collaboratory
October, 2019, 1st call for Joint Proposal
April, 2020, Unified Steering Committee

強磁場コラボラトリー2026
材料・物質科学の革新を担う協同プラットフォーム

ロードマップ2020に認定

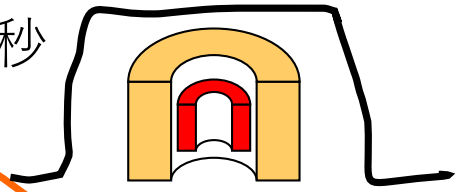
電磁濃縮
1000 T　1/100万 秒



パルス磁場

東大物性研国際
超強磁場科学研究施設

非破壊100 T
1-10 秒

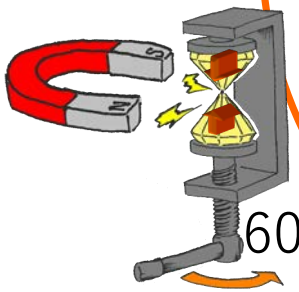


ロングパルス電源19億

協力機関
KOFUCネットワーク
(阪大、神戸大、福井大、大阪府大)

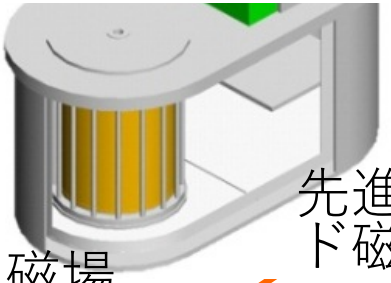
ネットワーク整備2億

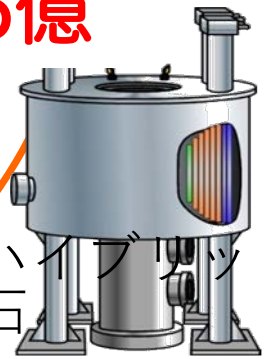
阪大先端強磁場
科学研究センター



複合極限
60 T 0.1秒+高圧

33T超伝導磁石16億





先進ハイブリッド磁石

超伝導定常磁場

東北大金研
強磁場超伝導材料研究センター