

# Open call for commissioned research project

Indo-Korea Science and Technology Center, Korea Institute of Science and Technology (KIST)

Control number: IKST/Research/2020-02/06012020

Indo-Korea Science and Technology Center (IKST), Bengaluru calls proposals for commissioned research project as below:

## 1. Classification: Calculation of the Gilbert damping parameter within Wannier 90 framework

No.	Field	Title of project	Budget	Period	Note
1.	Research	Calculation of the Gilbert damping parameter within Wannier 90 framework	Rs. 22,00,000	02/03/2020 ~ 02/03/2021	

## 2. Qualification and application

### A. Qualification for application

- ① Ph.D. degree holder in related area

B. Period of tender: 06.01.2020 (Mon) ~ 31.01.2020 (Fri)

### C. Required documents

- ① Official letter (one copy, English)  
② Project proposal (original two copies, English)

※ Email submission of above documents is mandatory to Mithun Suresh (+91 80 4669 7104/ 97415 38456, hr@ikst.res.in), parallel with direct or postal submission

### D. Application

- Deadline: 17:30, 31.01.2020 (Fri)
- Submission (Direct or Post)

- Address: NCC Urban Windsor, 3<sup>rd</sup> Floor, New Airport Road, Near Allalasanra gate, Opposite Jakkur Aerodrome, Bengaluru, Karnataka, India 560 065

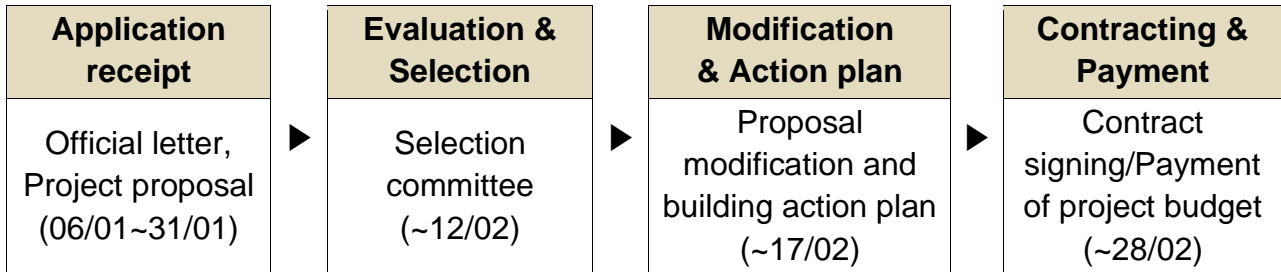
※ Please contact Mithun Suresh (+91 80 4669 7104/ 97415 38456, hr@ikst.res.in) for any inquiry

- Attachments:
1. Selection & Operation plan for research project
  2. Request for proposal
  3. Project proposal (format)
  4. Project result report (format). End.

# Selection and operation plan for research project

## 1. Selection procedure and criteria

Selection procedure:



※ Selection procedure timeline is subject to changes depending on internal schedules

Evaluation & Selection:

Method: Written and presentation evaluation

Criteria:

- Fundamental qualification of institute and P.I.
- Clarity of objectives, differentiation of performance strategy, feasibility of research contents against the budget
- Creativity and innovativeness of objectives and contents, application availability of research results

Modification & Action plan:

- Modification and improvement of project proposal of final candidate
- Building an action plan such as interim review, regular meetings etc.

Contracting & Payment:

- Signing a commissioned survey research contract
- Major conditions/terms of contract
  - Objectives/Contents In final project proposal
  - Contract period: 02.03.2020 ~ 02.03.2021 (1 year)
  - Payment: Advance (Inclusive tax, 100% of contracted amount, payment after contracting)

## **2. Result report**

- Result reports (original two copies) submission within two months from the last date of research period.

## **3. Notice**

- Selection result will be announced through email to individual(s)
- Duration for presentation evaluation is for 30 minutes (20 minutes for presentation and 10 minutes for Q&A)
- No documents will be returned after submission

## **Request for proposal (RFP)**

### **Calculation of the Gilbert damping parameter within Wannier 90 framework**

Gilbert damping parameter plays an important role in the performance of various magnetic devices such as hard drives, magnetic random access memories, magnetic logic devices, and magnetic field sensors. It essentially describes how fast magnetic moments would relax back to their equilibrium orientations, or how much power in a spintronic device would be consumed. From the experimental point of view, one of the most desirable quantities to be identified is the materials with the optimal Gilbert damping parameter that can support fast magnetization dynamics as well as low power consumption or switching current.

From a theoretical or computational point of view, the Gilbert damping parameter can be linked to the electronic structure of the material and can therefore be calculated using a first-principle based approach. The current proposal is focused on the development of a package to calculate the Gilbert damping parameter within the framework of a localized basis set, such as maximally localized Wannier functions. Such software can serve as a comprehensive tool for scanning different materials for optimal damping constants.

# **Project Proposal** (Arial, Bold, 18 pt)

(Paragraph spacing 1.15)

## **1. Overview of project** (Arial, Bold, 12pt)

- Title (Arial, 12pt)
- Period
- Budget

## **2. Information of P.I.**

- Name:
- Affiliation: Position, Dept., Name of Institute
- Educational qualification:
- Contact
  - Tel.:
  - Mobile:
  - Email:

## **3. Necessity and objectives** (Max. 1 page)

## **4. Details** (Max. 3 pages)

## **5. Strategies, methods and system**

## **6. Expected achievements and application plan**

## **7. Deliverables**

## **8. Timeline**

## **9. List of participants and budget plan**

# **Project Result Report** (Arial, Bold, 18 pt)

(Paragraph spacing 1.15)

## **1. Overview of project** (Arial, Bold, 12pt)

- Title (Arial, 12pt)
- Period
- Budget

## **2. Information of P.I.**

- Name:
- Affiliation: Position, Dept., Name of Institute
- Educational qualification:
- Contact
  - Tel.:
  - Mobile:
  - Email:

## **3. Objectives** (Max. 1 page)

## **4. Details** (No limit of pages)

### **4.1 Introduction**

### **4.2 Methods**

### **4.3 Results**

### **4.4 Conclusion**

## **5. Deliverables**

## **6. Expenses**