

Ref.: I-STEM Phase-II/internship

Date: 03/01/2022

To:

The Head of Institution/Coordinators/In-Charge
All the R&D facilities/Central Facilities
(Established/funded by the GoI)

Sub: Internship Program for building pool of Skilled Manpower for supporting R&D infrastructures

Dear Madam/Sir,

Thank you very much for being part of an initiative of the Office of the Principal Scientific Adviser, Govt. of India, i.e., the Indian Science Technology and Engineering facilities Map (I-STEM). The initiative has been taken to link Researchers (Students/PhD Researchers/Faculty Members/Technical Staff/Engineers) with R&D Resources/Established Research Labs available with academic and national labs across the country, to conduct R&D for taking India towards "Atma Nirbharta". The I-STEM web portal was launched by the Honourable Prime Minister of India, Shri Narendra Modi, on Jan 03, 2020.

I-STEM has hosted the catalogue of R&D facilities (not limited to analytical instruments only) in various institutions in the country, with a view to making them available to needy users, whether in the academia or industry. In addition, the I-STEM program supports researchers in Tier 2&3 academic institutions/national labs in conducting their research by providing technical assistance as well as by linking them with needed R&D resources across the country. A researcher may demand the use of equipment by reserving a time/slot through the portal in any nearby institution or elsewhere in India. If need be, a researcher can file a grievance on the portal, to ensure accountability in the scientific system. In addition, I-STEM supports academic institutions by providing technical assistance in running their R&D equipment, and by connecting them with researchers/start-ups/industries/suppliers/service providers through the portal. I-STEM has compiled a digital catalogue of the technologies/products developed in various academic institutions, national labs and PSUs, which are at different technology readiness levels (TRL), such as "Prototype", "Field-Tested", "Ready to Commercialize", as well as "Already Commercialized". This can help young researchers in identifying research topics based on need and potential applications. I-STEM has also started supporting the indigenous development of R&D equipment and technical supplies, as well as the program "Waste to Wealth", for refurbishing/repurposing written-off equipment in various institutions. I-STEM helps academic researchers by providing through its portal, free of cost, R&D software suites such as "COMSOL" for simulation and classroom instruction. The portal also allows academic institutions to advertise their webinars/conferences/meeting/skill development programs to help achieve greater participation in them. Furthermore, academics may use the online meeting platform "Webex" - at no cost - to conduct these webinars/meetings. The portal provides the facility to display opportunities for students (such as internships), as well as an option for institutions to seek skilled manpower for their R&D facilities.

Proposal for Engagement between I-STEM and SAIF Labs to create skilled manpower

It is common knowledge that, in the various academic setups/national labs, most high-end equipment lies idle or inoperative because of non-availability of either the required skilled manpower to operate and maintain them properly or because simple accessories are missing. Usually, funds are not available to maintain the equipment by replacing defective parts. This is the reason that custodians of well-established labs need to come forward to attend to such nitty-gritty to create skilled manpower, help and promote the initiative of the

new indigenous equipment development program, as well as train youngsters to open up, strip, repair, and/or retrieve useful spare parts of outdated equipment (written off by Custodian Institutions, as the I-STEM portal helps them maintain an up-to-date inventory).

The I-STEM team has been assigned several other tasks by the Govt. of India through its current program, one of them being “skill development” in the domain of science and technology, esp. skills related to the operation and maintenance of R&D equipment. For example, skill development in the operation, use, and maintenance of equipment and facilities used for R&D as well as for instruction in the academia. Another task assigned to I-STEM is to support and promote indigenous development of scientific instruments and facilities (as well as value-added technical supplies) for R&D and instruction. We understand that R&D infrastructure established by the GoI in your organization, such as SAIF, also has a similar mandate in the domain of Science and Technology, in order to, promote R&D in the country.

In these efforts, I-STEM and your organization may join hands because of sharing the two of the goals given by the funding agencies of GoI:

1. To train technicians for maintenance and operation of sophisticated instruments
2. To promote and practice in projects aimed at the development of prototypes of sophisticated instruments or to augment the capabilities of existing instruments.

Therefore, we propose a program in which (suitably qualified) interns will be provided with training at your Facility, with the interns being paid a stipend by I-STEM for the duration which can vary, depending on the instrument/facility on which interns are trained. During the training period, the interns could also be useful addition to the personnel to your R&D facilities and could contribute to the services provided by the established Labs. It would be a very beneficial and attractive feature of the proposed internship program if those who perform well are provided with a Certificate by your SAIF, which can help them find suitable employment.

Such an engagement between I-STEM and your organization would help the country achieve a greater degree of Atma Nirbharta in the days to come.

I-STEM, through its portal, will provide all the logistics support in advertising the program, placing on it the details of interns (selected and participating), and listing those who are certified by the labs so that others needy lab custodians may engage them for smooth running of R&D labs established across the country. To enable this, I-STEM has developed software modules such as, Events, Kaushal Bharat (skilled manpower), and Employment Opportunities.

Details of the internship program (max. upto 6 months), such as the number of interns, duration of internship, stipend to be paid to interns, can be worked out through mutual consultation. We therefore look forward to hearing from you at the earliest.

With Best Regards,

(Dr. Sanjeev Kumar Shrivastava)
National Coordinator Co-PI, I-STEM
Indian Institute of Science, Bengaluru
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Proposal for I-STEM Internship Program

1. Name of the Central Facilities/Lab:

2. Facility Coordinator(s)

S. No.	Name of the Coordinator/In-charge	Email ID	Contact No.

3. No. of Active Equipment (listed with I-STEM)

4. No. of Equipment (Idle Condition/Not working)

5. No. of Staff engaged with Lab (sanctioned):

S. No.	Name of the Staff	Email ID	Contact No.

6. No. of vacancies to be filled to run the facilities/equipment

7. No. of Interns that need to be engaged:

8. Equipment Usage statistics:

(List of distinct users with their Affiliation, contact No. and email id may be provided separately)

S. No.	R&D Equipment	Internal Users (within the Institute/University/Organization)		External Users (Outside the Institute/University/Organization)		
		Within Department	Outside Department	Academic	Start-ups	Industry/ National Labs

Note: The charges for services of Interns (Up to maximum of 6 Months), such as honorarium/stipend (mutually agreed with/or set by the I-STEM) will be reimbursed by the I-STEM, IISc, Bangalore. The additional honorarium based on performance for establishing a larger user database (than existing now) by advertising the efficacy/capacity of R&D infrastructure and in-house experts may be paid from your organizational Overhead obtained for the services provided to the users/researchers, if needed. Later on the trained tool engineers must be fully engaged with the required labs and they must be paid from the fund generated by those R&D labs.

The interns must have a good understanding of the scientific tools and must have degree/diploma from a recognized ITI, Polytechnic/College/University in the field of Science and Engineering.

The Intern, while undergoing training, must be required to help coordinators in executing tests of samples/specimens of dependent users; in running, and maintaining the equipment/usage records through I-STEM portal; as well as in conducting skill development training given to "internal users" and external researchers (so as to make them independent users of facilities). These Interns will be also working in coordination with the office of I-STEM.

The institute will prepare a budget estimate for the services (mutually agreed upon) and submit to the I-STEM for commitment and later final bills (consolidated) on Institute letter head need to be submitted for its reimbursement. The criteria of this program will be modified based on need from time to time or discrepancies found if any.

The proposal form will be available at <https://www.istem.gov.in/rd-infrastructure-map/funding-opportunities-researchers>. The filled form with the cover letter from the Head of Institution should be submitted to sanjeevs@iisc.ac.in and cc to istem.india@gmail.com