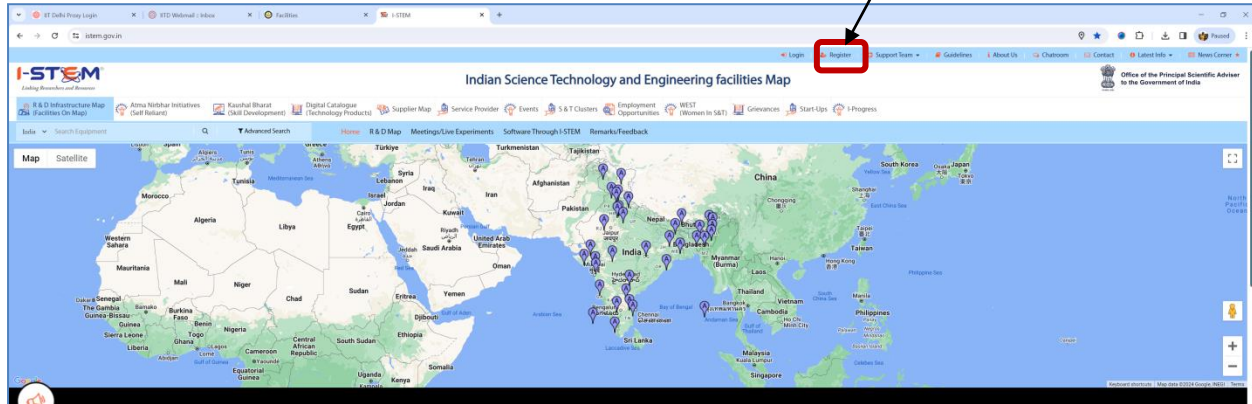
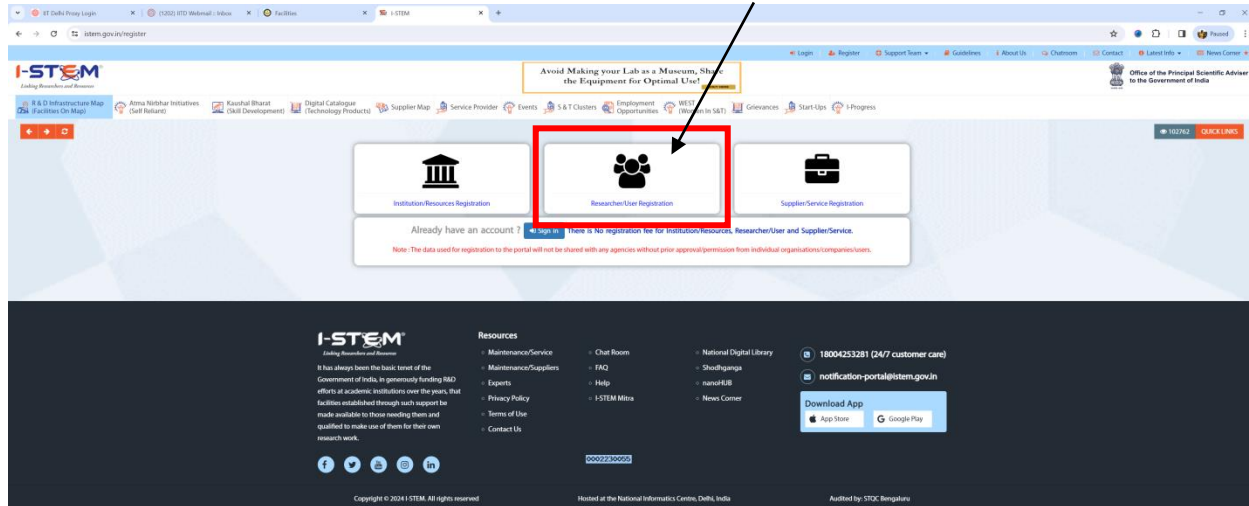


Open ISTEM WEBSITE <https://www.istem.gov.in/>

Register yourself by click indicated arrow 1



Click Researcher/ User Registration



Fill all Red mark Boxes

The screenshot shows the I-STEM Registration User Registration Form. The 'Academic Information' section is highlighted with a red box. An arrow points to the 'User Type' dropdown menu, which is currently set to 'International User'. The 'Institution' dropdown menu is also highlighted with a red box. Below the dropdowns, there is a note: 'Note: If you are not able to find your institution, kindly request your Director/Principal/Registrar/Head of institution to register at [Click Here](#) and also write to us at academic@iitd.ac.in'. The 'Research Area' field is also visible.

Plz note that write user category carefully. Because your booking slot cost directly depends on this. Once you will submit, it could not be changed.

The close-up screenshot shows the 'Academic Information' section. The 'User Type' dropdown menu is open, showing a list of options: International User, Industry User, Start-ups/Company, National Research Lab User, IIT Member, Academic Internal but different department/lab, and Academic User. The 'Institution' dropdown menu is also visible, with a note: 'Principal/Registrar/Head of institution to register at [Click Here](#) and also write to us at academic@iitd.ac.in'. The 'Research Area' field is also visible.

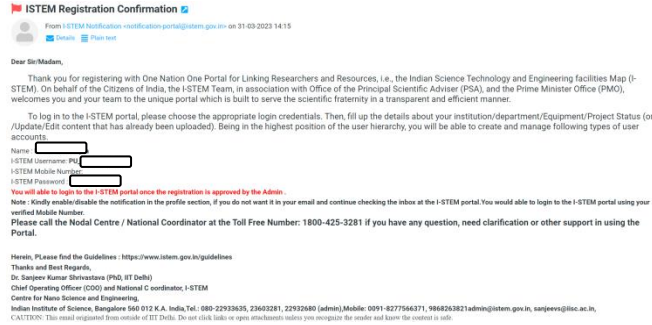
e.g. For IIT Delhi users Internal Academic

Academics Other than IITD users select External

Any research labs like CSIR etc. Choose National Research Labs

Once you will submit your Registration details, you will receive user details on a given e-mail like this





Generated user name will be starting from PU as indicated in above e mail

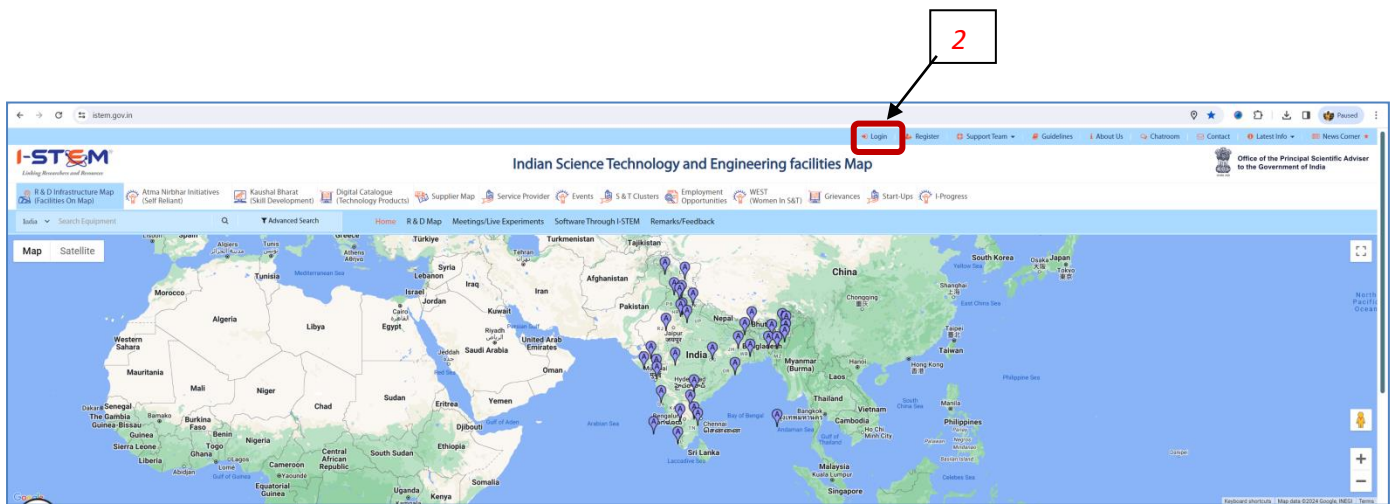
Plz note that once you receive User details by mail wait till 5-6 hr to activate

On approval you will receive e-mail like this



If anyhow you didn't receive approval mail, you can check with your user details to login if it works than go ahead

Login with your user credential by click on indicated box 2



Side by side in another window open SATHI WEBSITE

<https://sathi.iitd.ac.in/Home.html>


Go to facility and select as per your choice of interest name of Instrument; for Eg.; To book TRCM/STED- select TRCM/STED

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Stimulated Emission Depletion Microscopy (STED)


Stimulated emission depletion (STED) microscopy creates super-resolution images by the selective excitation of fluorescent molecules followed by the action of a high-power depletion laser. The deactivation of fluorophores minimises the focal point's illumination area, giving enhanced achievable resolution for a given system. The depletion laser is instrumental in depleting the excited state of the molecules in the periphery of the focal spot by stimulated emission, thereby reducing the point spread function (PSF), leading to a higher resolution. Among the different types of super-resolution techniques that push the resolution of microscopes beyond the diffraction limit, STED microscopy is truly optical in its application. Using STED, cellular imaging has been obtained down to a resolution of ~20 nm (in the lateral direction). In principle, the higher the power of the depletion laser, the more the point spread function reduces.



[→ Read More...](#)

Time Resolved Confocal Microscope (TRCM)

Time-Resolved Confocal Microscope (TRCM) provides single molecule sensitivity and high temporal resolution combined with outstanding capabilities and ease of use. TRCM allows numerous measurement and analysis options and is a versatile tool for current research and analysis. TRCM is based on the principle of a confocal microscope and is primarily used for detecting and imaging single molecules. In general, for ensemble-based measurements, the signal obtained is an average of all the molecules so excited in the detection volume, meaning lacking information on the spread in the ensemble. On the other hand, single-molecule measurements have gained widespread recognition over the years because of their ability to detect and follow single molecules, thereby providing insights into the underlying heterogeneity of the systems being studied. In a typical single-molecule setup, the confocal volume is about one femtoliter (fL) or less, such that, at one nanomolar (nM) concentration of a diffusing sample, there is on average less than one molecule inside the detection confocal volume.



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Click on read more

Click Booking

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Time Resolved Confocal Microscope (TRCM)



Time-resolved Confocal Microscope (TRCM) provides single molecule sensitivity and high temporal resolution combined with outstanding capabilities and ease of use. TRCM allows numerous measurement and analysis options and is a versatile tool for current research and analysis. TRCM is based on the principle of a confocal microscope and is primarily used for detecting and imaging single molecules. In general, for ensemble-based measurements, the signal obtained is an average of all the molecules so excited in the detection volume, thereby lacking information on the spread in the ensemble. On the other hand, single-molecule measurements have gained widespread recognition over the years because of their ability to detect and follow single molecules, thereby providing insights into the underlying heterogeneity of the systems being studied. In a typical single-molecule setup, the confocal volume is about one femtoliter (fL) or less, such that, at one nanomolar (nM) concentration of a diffusing sample, there is on average less than one molecule inside the detection confocal volume.

Applications

1. The quantification of molecular dynamics or molecular properties.
2. Studies of DNA-protein complexes.
3. Studies on protein structure and dynamics.
4. Interaction studies in material and life sciences.
5. Analysis of a multitude of parameters down to the single molecule. Imaging methods such as Fluorescence Lifetime Imaging (FLIM), FLIM/FRET, FCS/FCCS, FUS/FUCCS, Pulsed Laser Excitation (PLE), Fluorescence Anisotropy (FluorAnisotropy).
6. Analysis of a single-molecule quantum dots, carbon nano-tubes, and defects center study using anti-bunching phenomenon.

Main Features:

Instrument Make	ProQuest Microline 208
Microscope	A complete confocal system with a laser combining unit (LCU), inverted microscope body and a multichannel detection unit.
Objectives	PL20x PlanAchromatic objective, NA = 0.4, PL40x PlanAchromatic objective, NA = 0.85, Super-Numerical-Aperture objective 60x (NA = 1.2), water immersion objective with collar correction suitable for 0.15-0.2 mm glass coverslips, working distance 0.23 mm.
Diode lasers	Four diode lasers having central wavelengths of 405 nm, 485 nm, 532 nm and 640 nm.
Resolution	Pico-second scanning stage with nanometer resolution and piezo-electric sample stage with micrometer accuracy.
Measurement modes	Fluorescence Correlation Spectroscopy (FCS), Fluorescence Lifetime Correlation Spectroscopy (FLCFS), Fluorescence Lifetime Imaging (FLIM).
Detectors	2 SPAD detectors (spectral response from 300-700 nm), detection efficiency upto 45% at 530 nm.

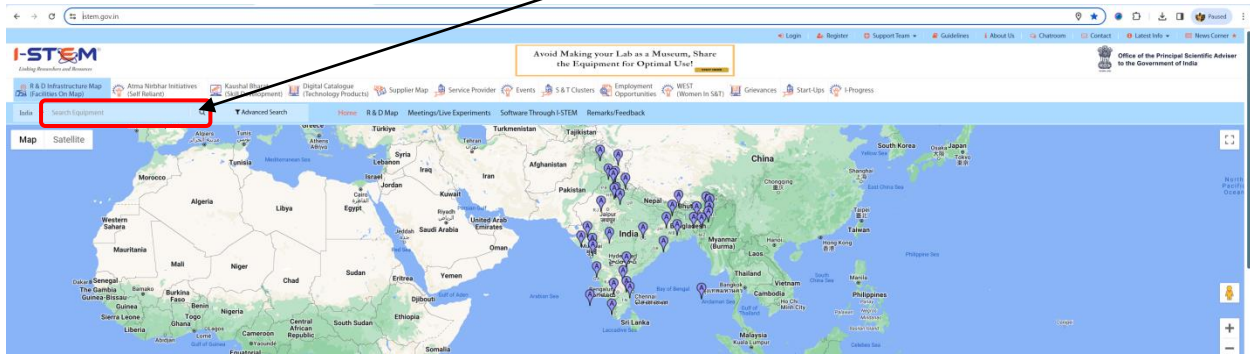
[→ Booking](#)

How to Contact

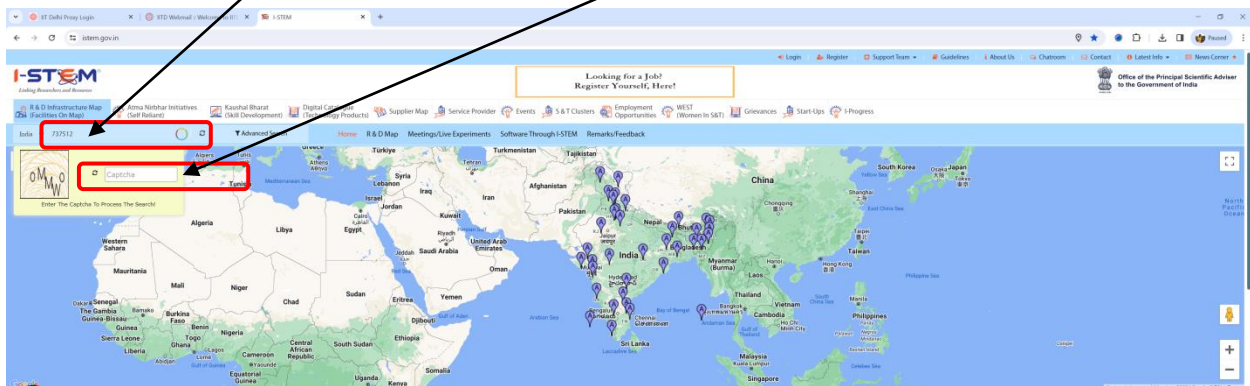
Another way to open particular Instrument

Open ISTEM WEBSITE <https://www.istem.gov.in/>

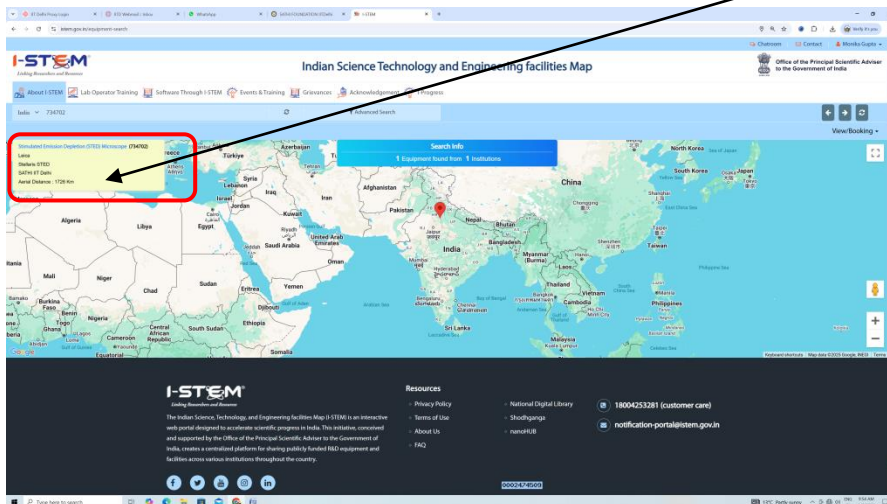
Write code number of Particular instrument of Interest in Search dialog for TRCM code no is 734701 for STED code no is 734702



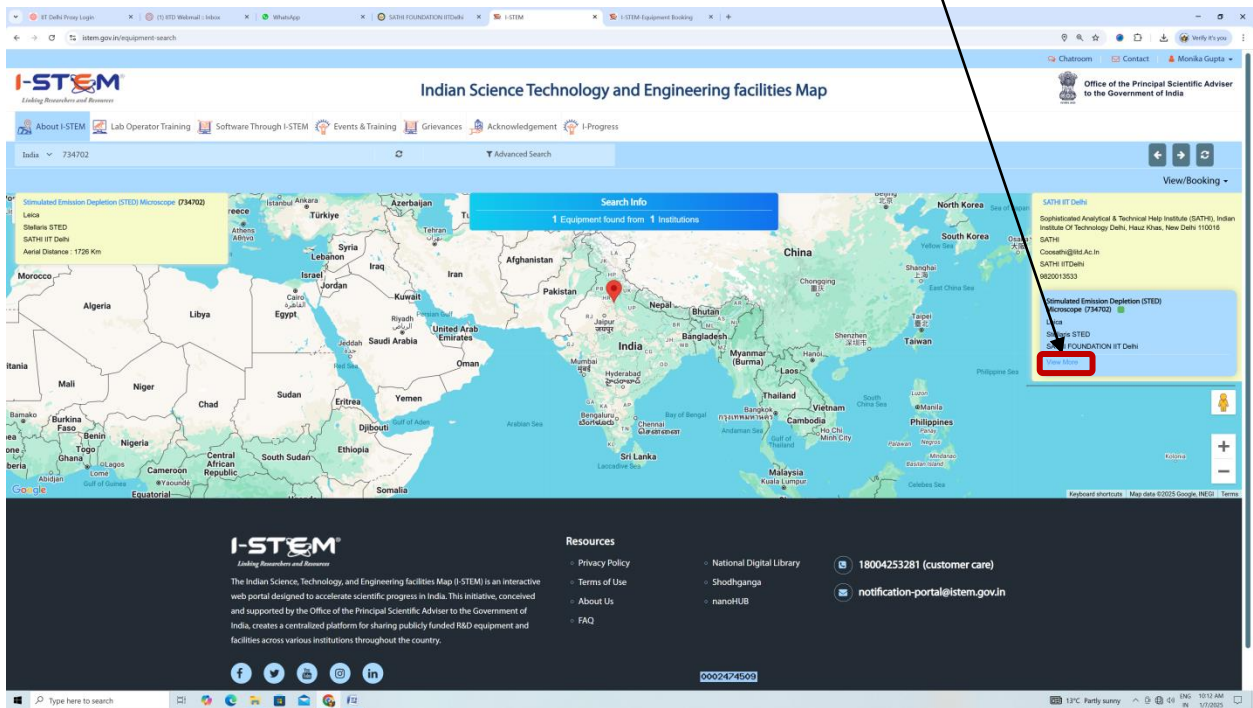
Once you will write Code no, it will ask to write correct Captcha, Write captcha in given box and enter



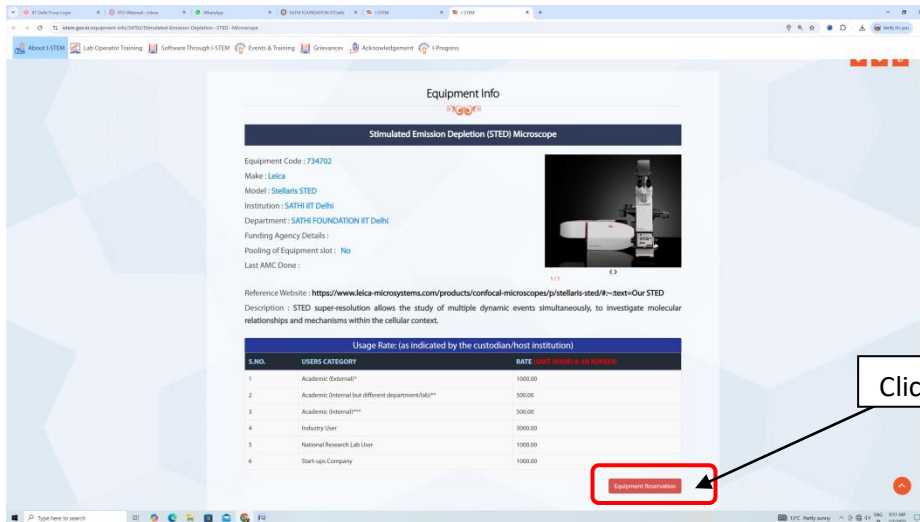
SATHI facility IITD only Instrument of particular Code will show, Click on Instrument name



Click on view more



Full details of Instrument with Cost for each user category will open. This page you can direct open via SATHI Website under Facility. After words steps are same



Tick mark this and click submit

Acknowledgement Statement For Equipment users:

I agree to acknowledge I-STEM and Host Institution of facilities, in any publication/report or dissertation that will incorporate results obtained from the facilities accessed through the I-STEM web portal. I agree also to inform I-STEM team of such acknowledgement in the following format:

The authors thank Indian Science Technology and Engineering facilities Map (I-STEM), a Program supported by Office of the Principal Scientific Adviser to the Govt. of India, for enabling access to the [Equipment Name with Model and Make-For Ex. SEM, Make:Zeiss and Model Gemini 300] funded by...at [Name of the Host Institute, & City/For Ex. Indian Institute of Science, Bangalore] to carry out this work.

Submit

Last AMC Done: _____

Reference Website : <https://www.leica-microsystems.com/products/confocal-microscopes/p/stellaris-sted/#:~:text=Our STED>

Description : STED super-resolution allows the study of multiple dynamic events simultaneously, to investigate molecular relationships and mechanisms within the cellular context.

Usage Rate: (as indicated by the custodian/host institution)

S.NO.	USERS CATEGORY	RATE (UNIT: HOURS & IN RUPEES)
1	Academic (External)**	1000.00
2	Academic (Internal but different department/lab)**	500.00
3	Academic (Internal)***	500.00
4	Industry User	3000.00
5	National Research Lab User	1000.00
6	Start-ups Company	1000.00

Equipment Reservation

Note:
i) Academic (External) means researchers belongs to the other institution.
ii) Academic (Internal but different department/lab) means researcher belongs to other department/lab or other institution.

Select particular date for slot

I-STEM Indian Science Technology and Engineering facilities Map
Linking Researchers and Resources

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Monika Gupta

Search for Equipment. 🔍

HOME ABOUT I-STEM EQUIPMENT INSTITUTIONS PEOPLE

Dr. Monika Gupta View/Booking

Booking Calendar

Equipment: Stimulated Emission Depletion (STED) Microscope

Equipment Code: 734702

Make: Leica

Model: Stellaris STED

Manager: SATHI IIT Delhi

Department: SATHI FOUNDATION IIT Delhi

Contact Operator

JANUARY 2025

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

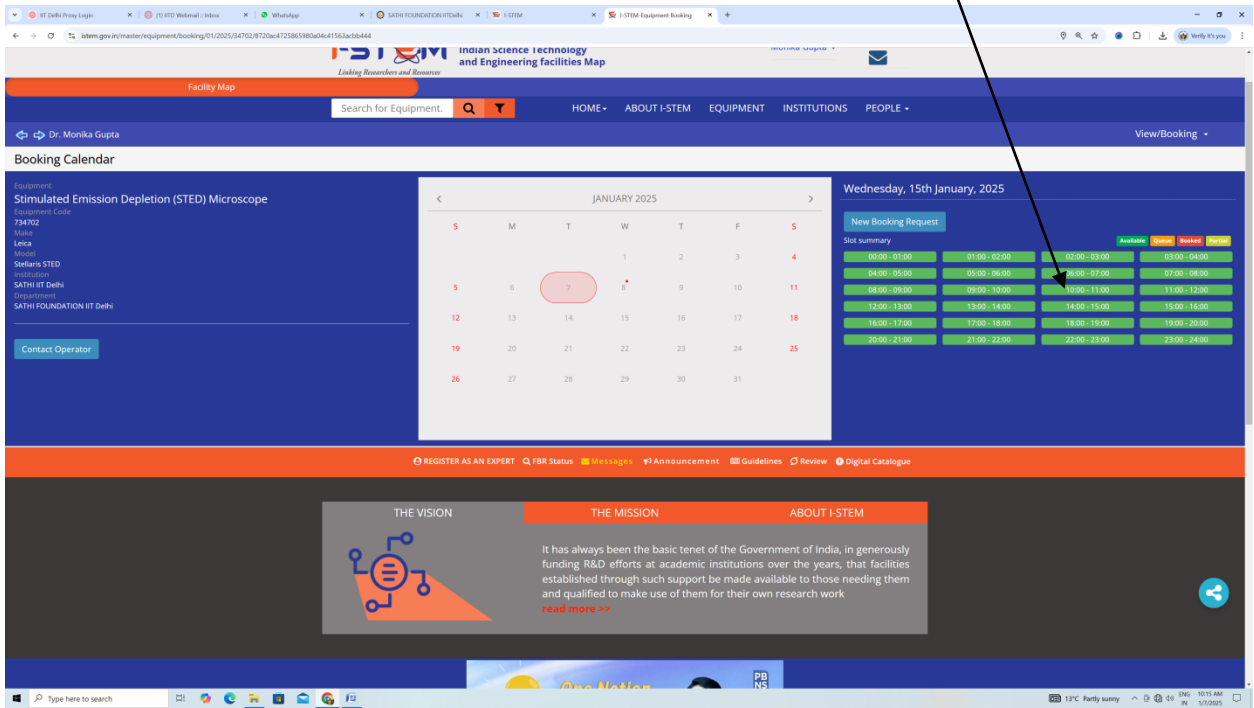
REGISTER AS AN EXPERT | FBR Status | Announcement | Guidelines | Review | Digital Catalogue

THE VISION **THE MISSION** **ABOUT I-STEM**

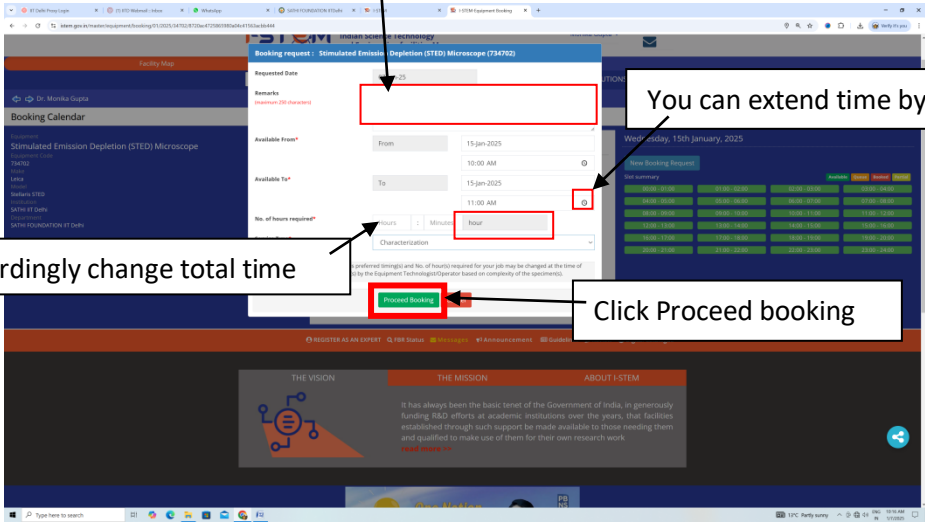
It has always been the basic tenet of the Government of India, in generously funding R&D efforts at academic institutions over the years, that facilities established through such support be made available to those needing them and qualified to make use of them for their own research work.

[READ MORE >>](#)

Time slots will open. Select any one time slot for booking, For eg 10:00 am-11 am



Fill all details
In **remarks** write clearly about your sample form and kind of measurements



You can extend time by click this logo

Accordingly change total time

Click Proceed booking

Give all details with starred mark,

Title of the Project,

No of samples Billing name & Address in which Invoice will be generated

The screenshot shows the I-STEM website's 'Service/Job Requisition Form (Characterization)'. The form is divided into several sections:

- Personal Information (User):** Includes fields for 'Title of Job/Project*', 'No. Of Sample' (set to 1), and 'Technical Information'.
- Booking Information:** Includes 'Nature of Samples', 'Specific Information (if any)', and 'Sample Name'.
- Current Billing Information:** Includes 'Name*' and 'Billing address*' fields.
- Costs:** 'Equipment Usage Cost' (₹ 400.00), 'Additional Cost' (₹ 0.00), and 'Total Estimated Amount' (₹ 400.00).

A red box highlights the 'Direct Booking' button at the bottom of the form. The text 'Do you need extra facilities?' is set to 'yes'.

Click Direct Booking and it's done

The concern Incharge will approve your booking and you will get message about your booking confirmation approved. Once your experiment has done please do payment from your account Online only.