

**May, 2025**

**Standard Operating Procedure (SOP)  
for the Usage, Maintenance, and  
Management of Major Lab Equipment**



**CSIR – Central Scientific Instruments Organisation Sector 30 C,  
Chandigarh, 160030**

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## 1. Objective

To establish the guidelines for the efficient and equitable utilization of high-cost equipment across CSIR-CSIO, ensuring optimal usage while maintaining accountability and transparency.

## 2. General Guidelines

- a) All equipment costing over ₹10.00 lakh and existing under various facility divisions namely CAIF, Integrated Workshop, Vacuum Technology, Centre for Nano Optics Fabrication (CNOF) and placed in various other departments must be included under this SOP.
- b) One nodal person from each facility division may be earmarked to maintain the facility utilization record.
- c) **All equipment worth over ₹10 lakhs must be brought under the concerned centralized facility. If the equipment is non-functional/semi functional, the facility in-charge will form a team to assess the condition of the equipment during transfer and a decision can be taken for necessary repairs or upgrades to ensure functionality.**
- d) Charges for external users for the analytical facility, including consumables, are predefined and available in the analytics.
- e) The payment shall be arranged by internal users (within CSIO) from appropriate budget heads of their externally funded projects.
- f) The present Work Order Form, available at iCSIO for the CAIF facility is modified to include the following two statements:
  - It is certified that I have no externally funded project (GAP, SSP, etc.) in the capacity of PI/Co-PI/Member other than the above-mentioned project.
  - It is also certified that the characterization of given samples is related to fulfilling the objectives of the above-mentioned project.
- g) A copy of the amended job card for the analytical facility is attached in Annexure- 6, for the approval of the Competent Authority.
- h) Unused or redundant equipment may be considered for donation to other CSIR laboratories for proper utilization, with the Director's approval.
- i) Instruments purchased from P-50, CSIR and any externally funded projects costing above ₹10 lakhs must be under the centralized facility divisions. Equipment, that cannot be physically shifted to the concerned facility division, should also be brought under the centralized facility and their inventory should not be listed under any individual scientist or technical staff. The head of a centralized facility must ensure smooth and easy access for all users to such facilities. The instruments under the departmental inventory should not be installed in individuals sitting place.

### 3. Usage, Maintenance and Management of various equipment

- a) The cost for consumables, annual maintenance contracts (AMC), or repairs for equipment that has not been physically shifted to the centralized facility shall be the joint responsibility of the centralized facility, and the department where the equipment is located. For high-cost equipment, i.e., those valued above 1 crore, a dedicated team (comprising frequent users of the equipment) may be formed to take responsibility for its maintenance and repair.
- b) For equipment requiring consumables, internal users must arrange these from their project funds.
- c) Till date, external users are transferring sample testing charges directly to CSIO account and same will continue further.
- d) The access of temporary staff (trainees, apprentices, etc.) should be limited to basic operations and not to critical settings and repairs. It should be done by experienced scientist/ technical staff or under their supervision.

#### 3.1 SOP for Usage of Facilities

Internal and external users can access the services of these facilities as per the below procedure:

##### A. Internal Users:

- a) **CAIF:** The users can access these facilities by applying through AnalytiCSIR online portal (<https://www.analyticsir.in/index>). The user can submit 04 samples in one request. The sample charges include the cost of consumable and utilities. (Measurement Charges attached in Annexure- 2). In some cases, like SPE and chromatography (GC, HPLC, IC), the consumables, such as chemicals (solvent etc.), standards, filters, cartridges, etc., shall be made available by the user before the start of the respective analyses.
- b) **Integrated Workshop/Vacuum Technology/CNOF:** The users can share their requirements through e-mail/discussions and through subsequent **Integrated Workshop/ Vacuum Technology/ CNOF** job cards in the iCSIO portal (as shown in Annexure- 4 and 5). Non-generic consumables, coating materials, non-standard fixtures, and tools that are to be made available by the user are conveyed and shall be arranged by the user before the start of the fabrication/ coating process.
- c) **Equipment purchased under ongoing/completed projects:** The instruments purchased under CSIR and Externally funded (ongoing/ completed) projects and costing above 10 Lakhs must come under the concerned facility division based on nature of equipment irrespective of its physical location. The usage of such equipment's by internal users will also be through defined SOP i.e. raising the request form/job card for the respective equipment and the availability of the equipment for the job will be confirmed from the respective PI/HoD by concerned facility head. All the respective PIs/HoDs have to provide the access to the equipment within mutually agreed time frame.
- d) In case any conflict arises, the matter will be brought to the notice of Chairperson, SOP Implementation Committee for suitable solution.

- e) For internal users having externally funded projects or contingency grant (in case of PhD students), the usage for a specific job work can be transferred from the externally funded project/contingency to the LRF.
- f) For internal users having CSIR/In-house projects, the facility will earn equivalent virtual points which will be calculated based on the number of job cards attended and completed.
- g) After the online application, the concerned personnel have to fill out a payment form, which is available at the iCSIO portal and clearly indicates the payment source (Modified Form attached in Annexure-1). The Payment Form will be submitted to the concerned facility division.
- h) Once the process is completed, the sample will be handed over to the user, and the job card will be closed.

**B. External Users:**

- a) **CAIF:** External users can access these facilities by applying through AnalytiCSIR and ISTEM online portals.
- b) **Integrated Workshop/Vacuum Technology/CNOF:** External users can avail of the services of this facility by writing to head of concerned division or by using the communication address available on the CSIO website under facilities.
- c) The timeline for process completion is conveyed to the user depending upon the feasibility, workload, and availability of the required facility. Since these facilities depend on several factors for their proper working, the timeline provided by the concerned division/ facility may change later. However, efforts will be made to maintain the timeline as much as possible.
- d) It is advised that the users must contact concerned scientist/ technical staff before providing the samples and prior to payment.
- e) After confirmation from CSIO and acceptance of the timeline, the concerned personnel have to make payment as per the charges approved by the competent Authority calculated based on CSIR payment rules<sup>#</sup>.
- f) External users can also use these facilities by filling out an offline job card and making direct payments to the CSIO account.
- g) Payment made by R&D Labs and Industries shall be confirmed from the Account Section of CSIR-CSIO, and an invoice will be generated through the BDG Section, CSIR-CSIO.

*#Unless specified otherwise by a mutually agreed upon MoU, project agreement or similar modalities approved by the competent authority*

### **3.2 SOP for Maintenance and Management of Facility**

The equipment and resources available in the facilities require annual maintenance, upgradation and emergency repair for their smooth operation. The following SOP is proposed for the maintenance of the equipment:

- a) The earnings from the testing/ fabrication/ characterization of the internal/ external samples/ units shall be used for the maintenance of the facilities, procurement of the consumables required for the testing and miscellaneous lab requirements.
- b) The operational requirement of the facility in terms of award/renewal of AMC, CMC, repair, and upgradation may be prioritized while allocating funds under P-07 every year. For this purpose, a consolidated requirement of the same shall be projected at the beginning of each financial year, which may be further considered by the Prioritization Committee for suitable allocation of the funds in consultation with the facility heads.
- c) Some equipment in the facilities is very old and will become obsolete in the coming years. Keeping this in view, the funds may be allocated from P-50 every year on a priority basis for procuring new facilities.
- d) Facility department/ Scientists are encouraged to take up research projects, technical services projects, testing and measurement services, wherever possible, to enable a sustainable model for maintenance and management of equipment.

#### **4. Additional Recommendations**

- a) The equipment list, make, model numbers, and utilization data, must be maintained for equipment above Rs. 10.00 lakhs and updated regularly for internal audits and reports.
- b) The expertise of trained technical manpower managing the facilities must be utilized effectively for operational efficiency. Availability of trained manpower should be ensured for the operation and maintenance of the facility.
- c) Facilities listed across multiple departments on the CSIO website must be consolidated for better visibility and management, and they may be categorized according to usage or nature.
- d) Immediately after installation of any new equipment/ instrument in any division, it should be made reflected by the Indentor/PI/HoD on the CSIO website and made accessible to users. This may be made mandatory for all future equipment purchases (Name of equipment, Model, and link of the product) as this will reflect on the strength of CSIR-CSIO.
- e) At the time of training of the newly installed facility, in any lab/division, the indentor/PI/HoD will give the prior information to the CSIO researchers (Scientists, Technical staff, PhD scholars etc.) using the appropriate path to take part in the training session. The names of trained persons should be recorded, so that their services can be availed as and when required.
- f) It is recommended that irrespective of the location of the equipment/ instrument, it should be made accessible as and when required for any internal or external user for its optimized uses.
- g) It is mandatory to list all equipment along with the name of the centralized facility on the website. Additionally, the contact details of the concerned HoD and the Scientist/Technical staff of equipment should be provided.

**Note:** *The SOP implementation committee is working on the preparation of the list of such facilities along with the name and contact details of the concern scientists, technical personnel of the facilities.*

- h) After the completion of the financial year, the amount earned by the available facility/ equipment may be converted into virtual points. These virtual points shall be calculated based on the number of job cards attended and completed, as there may be cases where the user from within CSIO does not provide any funds for carrying out the experimentation/ testing/ characterization/ fabrication. A corresponding amount, with the approval of the Director, CSIR-CSIO, can be given or transferred to the concerned Facility Divisions (STS projects) to purchase AMC of the instruments/ consumables/ maintenance and other daily routine expenses, etc.
- i) **In case of any dispute regarding usage of any instrument, concerned individuals may contact to Chairperson, SOP Implementation Committee for appropriate solutions.**
- j) Any upcoming facility will obey this SOP.

**This SOP shall come into effect immediately upon approval by the Director, CSIR-CSIO. The committee shall review and approve any amendments or exceptions to the SOP.**

# Annexures

Annexure-1

Exiting Job Card available at CSIO Website:



सीएसआईआर . केन्द्रीय वैज्ञानिक उपकरण संगठन  
CSIR-Central Scientific Instruments Organisation  
विज्ञान एवं प्रौद्योगिकी मंत्रालय, भारत सरकार  
Ministry of Science & Technology, Govt. of India

## CSIO-Analytical Facilities (CAF)

### For internal users only

Work Order :  
Date :  
Name of User :  
Name of Guide/PI :  
Division :  
Equipment/Facility Name :

SN	Test Name	No. of samples	Rate per sample (Rs.)	Total Charges (Rs.)

Toward the characterization of \_\_\_\_\_ samples for \_\_\_\_\_ (Name of facility),  
debit an amount of Rs. \_\_\_\_\_ from Project No. \_\_\_\_\_ under Budget  
Head \_\_\_\_\_ .

Project Leader

### FAG Code:

Debit an amount of Rs. \_\_\_\_\_ from above said Budget Head/Project No. and credit it  
in Budget Head \_\_\_\_\_ .

Head, CAF

Head, PME

COFA/FAO

## Facilities available in Central Analytical Instrumentation Facility (CAIF):

S. No	Name of the Facility	Model	Make	Test Name	Charges (internal Users) (in Rs.)
1.	Gas Chromatography	Master GC	DANI	Detection and quantification of gases	640.00
2.	HPLC	Acquity	Waters	LC-based identifications	800.00
3.	Ion Chromatography	Dionex ICS-5000+ DC,	Thermo Scientific	Separation of ions and polar molecules in liquids	905.00
4.	Powder XRD	D8 Advance	Bruker	Structural confirmation of the materials	950.00
5.	FT-IR Spectrometer	iS10	Nicolet	Chemical identification of the materials	320.00
6.	UV-Visible Spectrophotometer	Cary 4000	Perkin Elmer	Absorbance studies of the materials	320.00
7.	UV-Vis-NIR Spectrophotometer	Cary 5000	Perkin Elmer	Absorbance studies of the materials	1065.00
8.	NIR spectrometer	NIRS DS2500 Analyser	Metrohm	Absorbance studies of the materials	270.00
9.	Raman Spectrometer	InVia,	Renishaw	Identification of functional groups (without mapping)	600.00
				Identification of functional groups (with mapping)	1100.00
10.	Fluorescence Spectrophotometer	Cary Eclipse	Agilent Technologies	Photoluminescence nature of the material	295.00
11.	Automated Solid phase extraction (SPE) system	GX-271	Gillson	Solid phase extraction	1090.00

12.	Calibration vapor generator	GEN-SYS OVG-4	Owlstone Inc		1070.00
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Raising EDF Job Card in iCSIO portal



Raising MDF Job Card in iCSIO portal



Job Card for the Facilities available in Vacuum Systems (VS):

 CSIR-CSIO	JOB CARD
<b>Thin Film Coating Facility (TFCF)</b>	
<u>To be filled by Indenter/User</u>	
Date: _____	
Description of Work	
No. of Samples	
Whether coating material being provided with sample?	Yes / No
Project No.: _____ Funding Agency: _____ Project Leader: _____	
Name & Signature of User: _____	
Department: _____	
Sign of HoD/Project Leader: _____	
<u>To be filled by TFCF</u>	
Work Assigned to: _____	Job Card No.: _____ Date: _____
Equipment used: _____	
Date of Completion of Work _____	
Sign of Scientist/Technician/PA _____	
Sign of Head, TFCF _____	
<u>To be filled by Indenter/User after completion of work</u>	
Remarks, if any: _____	
Material/Samples received by the user (sign with date): _____	
Name: _____	

## Job Card



वैज्ञानिक तथा औद्योगिक अनुसंधान परिषद  
COUNCIL OF SCIENTIFIC & INDUSTRIAL RESEARCH  
(विज्ञान एवं प्रौद्योगिकी मंत्रालय, भारत सरकार)  
MINISTRY OF SCIENCE & TECHNOLOGY, GOVT. OF INDIA

Central Analytical Instrumentation Facility (CAIF)  
(For Internal Users Only)

Work Order:

Date:

Name of the User:

Name of PhD Guide/PI/Co-PI:

Division:

Name of the Facility:

S. No.	Test	Number of Samples*	Rate (per Sample) (Rs.)	Total (Rs.)
1.				
2.				
Total				

\* Maximum 04 samples will be received at a time.

**Project Details**

Total sum of Rs. \_\_\_\_\_ towards the characterization of samples is related to fulfilling the objectives of the Project No. \_\_\_\_\_.

**FAG Code (for external funded projects):**

Debit an amount of Rs. \_\_\_\_\_ from above said Project under Budget sub-head \_\_\_\_\_

**Certification from the PhD Guide/PI/Co-PI/Member**

- It is certified that I have no externally funded project (GAP, SSP etc.) in the capacity of PI/Co-PI/member other than the above-mentioned project.
- It is certified that I have no internally funded project in the capacity of PI/Co-PI/member other than the above-mentioned project.

[Project Leader]

[Head, CAIF]