

(Non-committal Eoi)

Invitation of Expression of interest is invited for supply, installation, commissioning and testing of performance acceptance of IRMS system for CHNOS isotopic analysis

Inter University Accelerator Centre (IUAC), an autonomous centre of UGC, Ministry of Education, Government of India invites on behalf of Director IUAC Expression of Interest from interested manufacturers of **IRMS system for CHNOS isotopic analysis**.

For overview of the existing system, scope, pre-qualification criteria, bidding terms and conditions and suggested response formats, please visit our website <https://www.iuac.res.in/index.php/tenders>

Interested parties who meet the pre-qualification criteria may furnish their Expression of Interest with all the necessary documents in a sealed cover along with the covering letter duly signed by an authorized signatory on or before 14th January 2025 by 17:00 hours at the following address:

To,

The A.O.(S&P)

IUAC, Aruna Asaf Ali Marg,

Post Box 10502

New Delhi – 110067.

Envelope should be properly labelled with “EOI for IRMS system for CHNOS Isotope analysis”

Prospective bidders are also invited to make a presentation on 15th January 2025, 11:30AM at IUAC premises for detailing all the available versions/models of the instruments and peripherals to be able to generate isotopic data for the purpose mentioned above. Bidders are also requested to submit the relevant documents of the presented versions/models of the instrument.

1. Introduction

Inter-University Accelerator Centre (IUAC) was set-up by the University Grants Commission as the first Inter-University Centre (IUC) called Nuclear Science Centre after due approval of the Planning Commission and the Prime Minister in October, 1984. The basic objective of Inter-University Accelerator Centre (IUAC) is to provide front ranking accelerator based research facilities to create possibilities for internationally competitive research within the university system.

Currently, IUAC is in the process of setting up of National Geochronology Facility. Under this project an Isotope Ratio Mass Spectrometry system for CHNOS isotopes analysis is proposed to be installed.

The C, H, N, O and S isotopes are used in various geological applications such as Stable Isotope studies, Oceanography, Palaeothermometry, Climatology, Stratigraphic Boundary determination, Geochemistry and in Forensic Sciences and Agricultural research. Stable Isotope of Oxygen is world-wide use to establish oxygen isotope stratigraphy using Marine isotopic stages up to 5 million years back in time. It is also used for Marine Isotopic Stage dating up to 5 Ma. The C, H, N, O and S isotopes are also useful for Studying the evolution of organisms from Pre-Cambrian to recent. etc.

Indicative technical specifications of proposed facility are provided in Annexure – I.

2. Objectives of EOI

The primary objective of EOI is to identify the suitable vendors who have technical competence, capability and experience in manufacturing, installation and commissioning of an Isotope Ratio Mass Spectrometry system for CHNOS isotopes analysis. The qualified bidder (after due process of tendering, post EOI) will be responsible for design, development, fabrication, supply, installation, commissioning and testing of performance (as per test criteria) of the proposed system as per the final technical specifications. The EOI intends to find out the available versions/models of CHNOS analyser and peripherals to be able to generate isotopic data.

3. EOI Submission procedure

- a. Interested applicants are requested to submit the application in a sealed and signed envelop to *Director, Inter University Accelerator Centre, Aruna Asaf Ali Marg, New Delhi 110067*. **The last of submission of application is ___14 January 2025__ by 17:00 hrs. The format of Application should be as per annexure – II.**
- b. Prior to the submission of EOI, Applicant may visit IUAC (or send email) for technical clarification. The applicant is requested to contact *Administrative Officer (S&P) (iuacstores@gmail.com)* for any administrative queries or *indenter Dr. Pankaj Kumar (pkb@iuac.res.in)* for any technical queries related to EOI.
- c. Along with the application of EOI, the applicants are requested to submit following documents:
 1. Brief company profile as per **annexure – III** along with all required documents listed
 2. Financial details of organization as per **annexure – IV**
 3. Proof of similar supplies executed in the past as per **annexure – V**
 4. Signed copy of self-declaration certificate **annexure – VI**
 5. Quality accreditations licensing requirements
 6. Facilities available with the applicant along with manpower expertise
 7. After – sales support infrastructure

EoI can be downloaded from the IUAC website (<https://www.iuac.res.in/index.php/tenders>). The bidders are expected to examine all instructions, forms, terms, project requirements and other details in the EoI documents. Failure to furnish complete information as mentioned in the EoI documents or submission of a proposal not substantially responsive to the EoI documents in every respect will be at the bidder's risk and may result in rejection of the proposal.

In exceptional circumstances and at its discretion, extend the deadline for submission of proposals by issuing an addendum to be made available on the IUAC's website, in which case all rights and obligations of IUAC and the bidders previously subject to the original deadline will thereafter be subject to the deadline as extended.

Each applicant shall submit only one proposal.

4. Qualification Criteria (shortlisting)

The invitation for EOI bids is open to all entities registered in India who fulfil prequalification criteria as specified below:

- a. The participation is restricted to companies registered in India.
- b. The Bidder should satisfy all of the criteria below on its own:
 - I. The Bidder should be a company registered under Indian Companies Act 1956. The company should be primarily providing IRMS **equipment** in India for at least the last five financial years for the year ending 31st March 2024 as evidenced by the Certificate of Incorporation issued by the Registrar of Companies, India. The bidder (Service Provider) will be a single legal entity.
 - II. The Bidder must have executed at least ten installations of similar type (in running conditions) with total contract value of INR 10 Crores or above in last 10 years. The information must be cited with valid documentation.
 - III. After sales support provided should be clearly emphasized.
 - IV. Proof of Registration of the bidder under relevant law, such Company Act / Trade License from appropriate authority.
 - V. A certificate (Affidavit) to be signed by MD/CEO of the Company that they haven't been debarred or blacklisted for any services, supplies or products dealing in, by any organisations or educational or research institutes/University or state/central government and no criminal case is pending or contemplated against them.
 - VI. All bidders should submit along with their EOI, copies of PAN card, GST Registration certificates.
 - VII. The bidders must submit copies of acknowledgement of Income Tax Return for the last three financial years.

All points mentioned will carry equal weightage and shortlisting (if required) will be done on the basis of a total marks obtained by each parties as evaluated by the technical / purchase committee appointed by the Director IUAC.

5. EOI Requirements

i) The Response to the Pre-Qualification Requirements shall be prepared in accordance with the requirements specified in this EoI and in the format prescribed in this document for each of the above mentioned qualifying criteria as proof of having the minimum requirements.

ii) Proposals must be direct, concise, and complete. All information not directly relevant to this EoI should be omitted.

iii) The Pre-Qualification Proposal shall be sealed and super scribed "Response to" on the top right hand corner and addressed to IUAC at the address specified in this document.

iv) The pre-qualification proposal should be submitted with two printed copies of the entire proposal, one marked ORIGINAL and the second one as DUPLICATE and a soft copy on compact discs (CDs) / USB drive with all the contents of the pre- qualification proposal. The words "Response to" shall be written in indelible ink on the CD / USB drive. The Hard Copy shall be signed by the authorized signatory on all the pages before being put along with the CD / USB drive in the envelope and sealed.

v) In case of discrepancies between the information in the printed version and the contents of the CDs / USB drive, the printed version of the pre-qualification proposal will prevail and will be considered as the proposal for the purpose of evaluation.

vi) The proposal should contain the copies of references and other documents as specified in the EoI.

vii) A board resolution authorizing the Bidder to sign/ execute the proposal as a binding document and also to execute all relevant agreements forming part of EoI shall be included in this envelope.

viii) IUAC will not accept delivery of proposal in any manner other than that specified in this EoI. Proposal delivered in any other manner shall be treated as defective, invalid and rejected.

6. Evaluation procedure of EOI:

On the receipt of EOI documents, an evaluation committee will shortlist a set of potential applicants based on the qualification criteria of EOI (**point number 4**) and the presentation made by each applicant (date and venue will be communicated later). A copy of presentation needs to be submitted during presentation.

The representatives of the interested organizations may attend the meeting at their own cost. The purpose of the meeting is to provide bidders an opportunity to present the technical details of the facility that they offer including discussion on various terms and conditions acceptable to both sides. Bidders can use the opportunity for clarifications regarding the EoI.

7. Disclaimer

All information contained in the EOI provided / clarified are in good interest and faith. The information contained in this EOI or subsequently provided to the applicant(s), whether verbally or in documentary or any other form, by or on behalf of IUAC, is provided on the terms and conditions set out in this EOI and such other terms and conditions subject to which such information is provided.

The purpose of this EOI is to provide interested parties / applicants / manufacturers with information that may be useful to them in the formulation of their application for qualification and subsequent selection pursuant to this EOI.

This EOI is not an offer by IUAC to the prospective applicants or any other person. This EOI is neither intended nor shall it be constructed as creating or requiring any ongoing or continuing relationship or commitment with any party or person. This is not an offer or invitation to enter into an agreement of any kind with any party.

Though adequate care has been taken in the preparation of this EOI document, the interested applicants shall satisfy itself that the document is complete in all respects. The information is not

intended to be exhaustive. Interested agencies are required to make their own inquiries and assumptions wherever required.

Intimation of discrepancy, if any, should be given to the specified office immediately. If no intimation is received by this office by the date mentioned in the document, it shall be deemed that the EOI document is complete in all respects and firms submitting their interest are satisfied with the EOI document in all respects.

The issue of this EOI does not imply that IUAC is bound to select and shortlist applicant(s) for the next stage or to enter into any agreement(s) with any applicant(s). IUAC reserves all right to reject any application submitted in response to this EOI document at any stage without assigning any reason thereof. IUAC also reserves the right to withhold or withdraw the process at any stage.

Neither IUAC nor its employees and associates will have any liability, any loss, expense or damage which may arise from or be incurred or suffered in connection with anything contained in this EOI document or any matter deemed to form part of this EOI document, the information and any other information supplied by or on behalf of IUAC.

IUAC accepts no liability of any nature whether resulting from negligence or otherwise howsoever caused arising from reliance / use of any statements / information contained in this EOI by the applicant. IUAC is not making any representation or warranty, express or implied, as to the accuracy or completeness of any information / statements made in this EOI.

The applicant shall bear all its costs associated with or relating to the preparation and submission of its application including but not limited to preparation, copying, postage, delivery fees, expenses associated with any demonstrations or presentations which may be required by IUAC or any other cost incurred in connection with or relating to its application. All such costs and expenses will remain with the applicant and IUAC shall not be liable in any manner whatsoever for the same or any other costs or other expenses incurred by an applicant in preparation or submission of the application, regardless of the conduct or outcome of the EOI.

Annexure – I

Indicative Technical specifications of Isotope ratio mass spectrometer for CHNOS isotopes:

IUAC is planning to procure an isotope ratio mass spectrometer (IRMS) for CHNOS isotopic analysis including carbonate clumped Isotopes and Triple Oxygen in Geological samples. The system should also be able to connect with suitable gas chromatography for separating different compounds from bulk natural samples for enabling IUAC to perform compound specific radiocarbon dating with its existing ^{14}C AMS facility.

It should have following tentative specifications:

1. The IRMS should feature an accelerating voltage of 5,000 volts or above.
2. Absolute sensitivity of CO_2 should be equal to or better than 1100 molecules/ion in continuous flow mode and 800 molecules/ion in dual inlet mode.
3. The instrument should have a mass range of 2 to 96 amu at the full range of accelerating voltage with an electromagnetic analyzer for the separation of masses.
4. Mass resolution of 110 or better at 10% valley definition.
5. Amplifier range must be mentioned.
6. Internal Precisions for CO_2 , N_2 , SO_2 , H_2 and CO must be specified in both continuous flow and dual inlet mode. Also, the linearity for above species in CF mode must be mentioned.
7. IRMS should, without any upgradation, be capable of accommodating EA, GC, Carbonate and water analysis devices.
8. Filament must be less reactive for enhanced durability.

Required specification for the operation of IRMS and associated inlets must be specified.

Continuous flow interface:

- It must be possible to connect multiple inlets (both low flow and high flow) with IRMS permanently without any hardware modifications.
- It must be possible to dilute the analyte gases automatically prior to introduction to IRMS.
- It must be possible to connect 5 or more reference gases permanently.

Dual Inlet Interface

- The system should have a dual bellow mechanism each for sample and reference line to perform automatic intensity matching of both sides.
- The air compressor required for pneumatic operation should be supplied.

Elemental Analyzer

- The system must have two separate furnaces viz. Combustion and Reduction furnace, with independent temperature control.
- The furnaces should be able to achieve a temperature of 1100 °C or higher in case of combustion (CNS mode) and 1400° C or higher in Pyrolysis mode.
- The system should be offered with an autosampler for continuous analysis of 80 samples or more.
- The autosampler must be Zero blank to ensure the complete removal of atmospheric gases.
- It should be possible to analyze Sulphur at a higher column temperature than Carbon and Nitrogen within the same run. The temperatures of the column should be acquired by the software during sample analysis for monitoring and diagnosis purposes.
- CNS & OH precision should be guaranteed for all three isotopes in a single run. The external precision should be quoted.
- EA should be capable of operating as a standalone unit for CNS elemental analysis.

Interface for Water Analysis

- The system should be capable of analysing water samples. The system should utilize headspace analysis of liquid to avoid blockage of the sampling needle/ syringe. An autosampler with a capacity of 80 samples or more should be provided along with the system.
- The system should have a suitable mechanism to ensure the gases being delivered to IRMS are completely moisture free.
- The External precision for water isotopes in both continuous flow and dual inlet should be quoted.

Interface for Carbonate Analysis

- The system should be capable of analyzing carbonate samples between 20ug - 1000 ug or better.
- The systems should have an autosampler with a capacity of 30 or more samples.
- The system should have a suitable mechanism to ensure the gases being delivered to IRMS are completely moisture free.
- The system should ensure automatic matching of sample and reference gas intensities before analysis using bellows.
- The External precision for C, O isotopes for carbonate samples in both continuous flow and dual inlet should be quoted.

Gas Chromatograph

- High-precision gas chromatograph with combustion and pyrolysis interfaces to provide capability of on-line precise analysis of $^{13}\text{C}/^{12}\text{C}$ (under continuous flow conditions) in individual compounds separated by gas chromatograph with total workstation control of the instrument, data processing and reporting.
- Should have Split, split-less capillary injector and electronic flow control.
- The GC should be equipped with a Flame Ionization Detector (FID) with provisions of individual GC-IRMS and GC-FID operations.
- Oven temperature: Ambient to 400°C or higher with overheat protection.
- A fully integrated auto-sampler for a minimum of 15 samples or more for automatic analysis of liquid samples.
- External precisions should be quoted for GC-IRMS analysis.

Miscellaneous

- Requirement of micro balance should be specified.
- All the gases needed for above mentioned system with all the modes should be specified.
- All the necessary gas cylinders and associated parts (regulators, purifiers, panel, gas line fittings and plumbing etc. as required from reputed companies) should also be provided.
- Consumption of gases based on 1000 samples/ year on each inlet.
- NIST/USGS/IAEA traceable Standards (3 nos.) each for CHNSO on EA, Water samples for OH, Carbonate and for GC- Carbon,
- Requirement of UPS must be specified.
- Liquid nitrogen tank 50 ltr, (2 nos.) should be offered.
- IUAC appointed committee reserve the right to conduct on-site demonstration of the quoted specification on the existing instrument installed in India at any point of time during tendering process/before placement of purchase order.
- List of required Spares for the warranty period of 3 years must be provided/ quoted.
- Suitable PC for the operation and data processing and collection with below minimum specifications must be mentioned.
- 3 years of comprehensive warranty of the instrument and associated peripherals (including parts and labor)
- The technical committee reserves the right to conduct site visits for demonstration of the quoted specifications on an existing instrument installed in India at any point of time during tendering process/ before placement of purchase order.

Annexure - II

(To be submitted on Company's letter head)

[Date]

To,

Director

Inter University Accelerator Centre,

Aruna Asaf Ali Marg New Delhi - 110067

Subject: Invitation of Expression of interest is invited for supply, installation, commissioning and testing of performance acceptance of IRMS system for CHNOS isotopic analysis

Dear Sir,

Having examined the Expression of Interest (Eoi), the receipt of which is hereby duly acknowledged, I/We, the undersigned, intend to submit a Pre-qualification requirements proposal in response to the Expression of Interest (Eoi) for Invitation of Expression of interest is invited for supply, installation, commissioning and testing of performance acceptance of IRMS system for CHNOS isotopic analysis.

I/We attach hereto the response as required by the Eoi, which constitutes our proposal.

Primary and Secondary contacts for our company are:

	Primary Contact	Secondary Contact
Name:		
Title:		
Company Name:		
Address:		
Phone:		
Mobile:		
Fax:		
E-mail:		

I/We confirm that the information contained in this response or any part thereof, including its exhibits, and other documents and instruments delivered or to be delivered to Inter University Accelerator Centre (IUAC) is true, accurate, verifiable and complete. This response includes all information necessary to ensure that the statements therein do not in whole or in part mislead the department in its short-listing process.

I/We fully understand and agree to comply that on verification, if any of the information provided here is found to be misleading the short listing process, we are liable to be dismissed from the selection process or termination of the contract during the implementation of project, if selected to do so.

I/We agree for unconditional acceptance of all the terms and conditions set out in the EoI document.

I/We shall abide by the rules and regulations of the Institute in regard to the selection process of the agency and the final decision.

It is hereby confirmed that I/We are entitled to act on behalf of our company/ corporation/ firm/ organization and empowered to sign this document as well as such other documents, which may be required in this connection.

Dated this Day of 2024

(Signature) (In the capacity of)

(Name)

Duly authorized to sign the Tender Response for and on behalf of:

(Name and Address of Company)

Seal/Stamp of bidder

Witness Signature:

Witness Name:

Witness Address:

CERTIFICATE AS TO AUTHORISED SIGNATORIES

I,....., the (*Your profile in the company*) of, certify that who signed the above Bid is authorized to do so and bind the company by authority of its board/ governing body.

Annexure – III

Details of the Organization	
Name of organization	
Nature of the legal status in India (attach copies of original document defining legal status) a) A proprietary firm b) A firm in partnership c) A limited company or Corporation	
Year of Establishment	
Legal status reference details	
Nature of business in India	
Date of Incorporation	
Date of Commencement of Business	
Address of the Headquarters	
Address of the Registered Office in India	
Number of full time Experience manpower to execute the project	
Other Relevant Information	
Mandatory Supporting Documents: a) Certificate of Incorporation from Registrar Of Companies(ROC) b) Relevant sections of Memorandum of Association of the company or filings to the stock exchanges to indicate the nature of business of the company	

Annexure – IV

Financial Information			
	FY 2021-22	FY 2022-23	FY 2023-24
Revenue (in INR crores)			
Profit Before Tax (in INR crores)			
Revenue from IT services and system integration services (in INR crores)			
Other Relevant Information			
Mandatory Supporting Documents: a. Auditor Certified financial statements for the Last three financial years; 2021-22, 2022-23, and 2023-24 (Please include only the sections on P&L, revenue and the assets, not the entire balance sheet.) b. Unaudited financial statements certified by the Company auditor for the latest year (2023-24) (in case the auditor certified statement for 2023-24 is not available) c. Certification by the company auditors supporting the revenue break-up for IT Services and System Integration Services			

Annexure – V

Similar Projects undertaken in the past 10 years (multiple copies may be attached for different projects)	
General Information	
Name of the project	
Name and contact details of the client	
Current Status, publications etc.	
Project Details	
Description of the project	
Applications	
Technologies Used	
Infrastructure	
Other Details	
Provision of Training at Factory site while manufacturing	YES / NO
On-site training during installation	
Duration of execution of project (From date of receipt of order to commissioning of project)	
Total cost of the project	
Other Relevant Information	
Mandatory Supporting Documents: Letter from the client duly indicating the salient points like cost, period (time to complete the installation), post – installation support etc.	
Desirable Document: List of publication arising out of the mentioned installation carried out in past	
Project Capability Demonstration Complete details of the executed project shall be provided to indicate the relevance to the pre-qualification criterion (which is part of minimum qualification criteria).	

Annexure – VI

Self-declaration certificate

[To be submitted on Company's letter head]

Ref. No. Date:

To

The Director

Inter University Accelerator Centre

New Delhi – 110067

India

With reference to my/our expression of interest of IUAC, it is hereby declared that (name of company) was not declared ineligible for corrupt and fraudulent either indefinitely or for a particular period by any Govt. or other agency. (Name of applicant) also declare that there are no contractual restrictions or legal disqualifications or other obligations which will prohibit me/us from submitting the application for the EOI.

Signature of the Applicant:

Designation

Name of the applicant

Date:

(seal)