

**Government of India
Bhabha Atomic Research Centre
Analytical Chemistry Division**

TENDER No: BARC/ACD/501/MF/RBA4013/2022/21

Date: Dec. 21, 2022

TENDER DUE DATE: 16/01/2023

**Name of work : Technical Support for Analytical and Experimental Works at
Analytical Chemistry Division**

Quotations are invited on behalf of Head, Analytical Chemistry Division in sealed envelope for *Technical supports for analytical and experimental works at ACD* as per following specifications, terms and conditions:

TECHNICAL SPECIFICATIONS:

Scope of work & Quantity: The scope of work includes the followings:

1	2	3
S.No.	Name of job	Qty
1.	Synthesis of metal composite materials	500 Nos
2.	Sample analysis using pH meter, conductivity meter, electrochemical and spectroscopic techniques, hydrothermal chamber, spray pyrolysis, sample preparation for X-Ray diffraction and AFM measurements	1000 Nos
3.	Sample solution preparation in size of 500 – 1000 ml	500 Nos
4.	Electrochemical measurements	500 Nos
5.	Purification of salts	60 Nos
6.	High temperature molten salt works	100 Nos

For detailed job description and other requirements please refer to **Appendix - A** of this specification. The jobs are to be carried out in different laboratories of ACD (Mod Labs).

TERMS AND CONDITIONS

Note: [Reference: (2/Misc-9/Lgl/2001/92 dated April 30, 2001, BARC)]

- I. Confidentiality:** No party shall disclose any information to any third party concerning the matters under this contract generally. In particular, any information identified as **"Propriety"** in nature by the disclosing party shall be kept strictly confidential by the receiving party and shall not be disclosed to any third party without the prior written consent of the original disclosing party.

This clause shall apply to the sub-contractors, consultants, advisers or the employees engaged by a party with equal force.

- II. "Restricted information" categories under Section 18 of the Atomic Energy Act, 1962 and "Official Secrets" under Section 5 of the Official Secrets Act, 1923: -**

Any contravention of the above –mentioned provisions by any contractor, sub-contractor, consultant, adviser or the employees of a contractor will invite penal consequences under the aforesaid legislation.

V. Prohibition against use of BARC's name without permission for publicity purposes:

The contractor or sub-contractor, consultant, adviser or the employees engaged by the contractor shall not use BARC's name for any publicity purpose through any public media like Press, Radio, TV or Internet

PRICE: Offered cost should be inclusive of total scope of work mentioned above. Maximum possible cost break up for various items and accessories, taxes and other charges, if any, is to be provided.

VALIDITY: Price quoted should be valid throughout the currency of the contract.

TAX: As applicable, should be clearly indicated in the offer.

COMPLETION PERIOD: The job is to be completed within Eighteen (18) months from the date of receipt of the order. Any delay which is attributable to the contractor is liable for penalty @ ½% per week (max. 5 %) to be imposed on the contractor. Extension required, if any, is to be applied before validity of the Work Order is over, with proper justifications.

INCOME TAX: Income Tax @ 2% and GST TDS @ 2% shall be deducted from vendor's bill.

PAYMENT: 100% including taxes after receipt of the unit at our site, successful commissioning and submission of the following documents:

1. Advance Stamped Receipt.
2. Original Bill.

Special Notes:

- Vendor should have security vetting from BARC.
- The vendors have to depute technically qualified manpower (BSc with Chemistry as one of the major subject with minimum two years working experience in analytical laboratories) or persons with at least 7 years with experience of working in chemical analytical laboratories. The work is equivalent to two technical people for about 18 months.
- The vendor has to arrange for valid PVC for all workers to work inside BARC.
- Safe handling of chemicals, equipment and instruments are to be ensured by the vendor through proper supervision.
- Safety goggles, paper masks, PVC shoes, aprons, soaps, duster and towels are to be provided by the vendor for all their persons coming for this work in required quantity.
- Sufficient manpower is to be provided on each working day to keep the work movement smooth. This will be decided based on the requirement from BARC side.
- All safety & security guidelines that may be provided by BARC are to be strictly followed during execution of the work order.
- Timely payment to the technician is required by the contractor

Please mention clearly the tender number, due date, party's name and subject on the top of the envelope duly sealed and addressed to Head, Analytical Chemistry Division BARC, Trombay, Mumbai – 400085.

The quotations should be sent by speed/ordinary/registered post to the above address and timely delivery of the quotation is to be ensured by the party. Private courier services are not allowed.

Note: Please mention your PAN No, G.S.T. No. & VAT TIN No with the offer. Otherwise the offer is liable for rejection.

A. Detailed Scope of work

1. **Synthesis of metal composite materials:** This will involve preparation of solid/ liquid samples through
 - a. Blending and mixing of 2 or more miscible liquids in predetermined quantities
 - b. Dissolution of measured amount of solids in known volume of liquids
 - c. Blending of two or more salts/ powders in measured amounts
 - d. Heating, grinding, heat treatments of the samples
 - e. Approx. time required for the job: 1 h/sample
2. **Sample analysis using pH meter, conductivity meter, electrochemical and spectroscopic techniques, hydrothermal chamber etc.:** This will involve step by step procedures prescribed for the instrument concerned, sample feeding, analysis and data recording. Approx. time required for the job: 1.5 - 2 hrs. /sample
3. **Sample solution preparation in size of 500 – 1000 ml:** This job will involve preparation of various reagents and solutions as standards for laboratory use. The solutions are to be kept in proper containers with labels containing the details. Approx. time required for the job: 45 min - 1hr/ sample
4. **Electrochemical measurements:** Electrochemical measurements to be carried out using the electrode as guided. Also, for some cases, electrode based titration may be performed by proper instruments. All measurements are to be repeated 3 times for accurate results. Approx. time required for the job: 45 min - 1hr /sample for 1 person.
5. **Purification of salts:** This will include experiments with various solutions and membranes in pressure diffusion cells or equilibrium cells. The job will include preparation of feed, running the trials and collecting the product streams. Approx. time required for the job: 8 – 10 working hrs./ experiment for 1 person.
6. **High temperature molten salt works:** High temperature molten salt work to be carried out through the week long working schedule, this requires the preparation, purification of salts and melting them at high temperature 600 to 1100-degree C. Require the loading of samples in the furnace and placing electrochemical and carry out measurements as guided.

B. Terms and conditions:

1. BARC will provide all instruments, chemical reagents, working facilities and services required for carrying out the works.
2. BARC representatives will provide necessary operational and safety guidance to the persons coming for work, hence it will be required not to change the people deputed for the work frequently.
3. The analytical equipment and experimental facilities are to be handled with proper precautions to prevent any damage that may occur to personnel, equipment or samples.
4. All the data pertaining to the experiments and analysis are to be recorded properly and presented on daily basis. No data shall be taken outside in any form.
5. Any problem found in equipment/ system is to be reported immediately.
6. Cleanliness and good peaceful working environment is to be maintained meticulously.
7. Experiments/ analysis are to be carried out strictly as per instructions only.