

INTER-UNIVERSITY ACCELERATOR CENTRE

ARUNA ASAF ALI MARG, NEW DELHI-110067, INDIA

NOTICE INVITING TENDER(NIT)

Tender No: IUAC/NIT/08/SMK/2017-18

Name of Tender: Fabrication of Integrated bobbin structure and stand for the superconducting MRI Magnet.

1	Technical specifications of the Fabrication and supply of Integrated bobbin structure and stand for superconducting MRI Magnet.	As per Annexure-I
2	Required quantity	1 set
3	Earnest Money Deposit(EMD) in INR Bidder/vendors registered with NSIC and Foreign bidders quoting directly are exempted from paying EMD	INR 1,20,000/-
4	Cost of tender document	Rs.500/- (Rupees Five hundred in the form of D.D. or Cash) for hard copy. Nil if downloaded from IUAC website
5	Last Date and Time of Submission of Tender	3:30pm on 6 th October, 2017
6	Date & Time for opening of Tender (Technical Bid, Part-I)	3:45 pm on 6 th October, 2017
7	Date & Time for opening of Tender (Price Bid, Part-II)	The date and time will be intimated to the technically qualified bidders only.
8	Address for submission of Tender	Administrative Officer (S&P), Inter-University Accelerator Centre, Post Box No. 10502, Aruna Asaf Ali Marg, New Delhi -110067
9	Place of the opening of the Tender	Inter-University Accelerator Centre, Aruna Asaf Ali Marg, New Delhi - 110067

TERMS AND CONDITION

1. Director, Inter-University Accelerator Centre (IUAC), New Delhi invites sealed tenders for Fabrication of Integrated bobbin structure and stand for superconducting MRI Magnet. Tender should be submitted directly by the original fabricator. In case of bid by authorized Indian Agent, the manufacturer authorization should be attached with the technical bid.

2. Submission of Tender

Tenders should be submitted in sealed envelopes in two parts separately, i.e. "*Technical Bid*"(Part-I) and "*Price Bid*" (Part-II). Both the parts should be further sealed in an envelope super-scribing Notice Inviting Tender (NIT) No. with Name of work, due date for opening, bidders name & address. The tender duly filled may be sent to above mentioned address either by post/Courier or hand delivered in the Tender Box kept in the area near west side entrance of IUAC, after ensuring that due entries are made in the register kept at the counter. It should not be handed over to any employee of the centre. No tender shall be accepted later than the time schedule specified above.

I. Technical Bid (Part-I): The following criteria/information/documents are essential to qualify the technical bid for the said item

- A. Technical bid should contain the Demand Draft of EMD amount. Vendor registered with NSIC and foreign vendors quoting directly are exempted from paying EMD.
- B. The bidder needs to submit the company profile and organizational setup.
- C. The bidder needs to submit credentials/ capabilities of doing high-precision large volume machining jobs. The bidder may submit the details of previously executed large similar type of machining/ welding/fabrication jobs with Aluminium alloys.
- D. The bidder must have suitable CNC machines like and other machineries to carry out the fabrication job and the bidder should have suitable welding machines like automated/robotic welding machines to carry out the job for consistent and uniform welding pattern.
- E. The bidder needs to submit a brief list of plants/machinery and tools in his possession.
- F. Coordinate-Measuring Machine (CMM)/Laser based dimensional measurement is an essential tool to be used during acceptance test of the integrated bobbin. The bidder need to submit the brief details of Coordinate-Measuring Machine (CMM) facility/laser based measurement system. The bidder needs to mention if they need to outsource the

service of CMM or laser based measurement. The name of the service provider need to be mentioned in the technical bid of the tender.

- G.** The bidder need to submit necessary documents of similar type of works successfully executed in the past 3 years. The Indian bidder should have successfully completed at least one of similar nature of work of more than ₹50lakhs value with reputed organizations, Govt. Dept., Public sector & Autonomous bodies for minimum qualification. The foreign bidder need to submit necessary documents of similar type of works successfully executed in the past 3 years.
- H.** The bidder needs to agree to sign a formal Non-Disclosure Agreement (NDA) after receiving the job order.
- I.** The bidder is required to attach entire NIT (except the price bid part) duly signed & stamped as a token of acceptance to the NIT conditions with this bid.
- II.** Price Bid (Part II): In this bid, the bidder is required to quote the price for the *fabrication of integrated bobbin structure and stand for superconducting MRI magnet* according to the scope of work & technical specifications and drawing as per *Annexure-I* and *Annexure-II*. The price should be in breakup. The Indian bidder needs to separately mention all components of the cost which includes the fabrication cost as per *Annexure - I*, GST, Insurance, packing and forwarding charges up to IUAC Delhi, any other costs etc. The fabrication price should be inclusive of all material, fabrication, material testing, CMM measurement and report, tooling cost, labour, services etc. No overwriting on Price bid is allowed and it should be duly signed by authorized person & stamped on all the pages. The foreign bidder is required to quote their prices both on FOB and CIF ,New Delhi.

Important Instructions

Tenders to be submitted with following the manner.

Envelope No. 1 (*Technical Bid*): Shall contain “*Acceptance of Terms & Conditions*”, “*Technical Bid*” and Earnest Money Deposit (EMD) if any, technical Literature/Brochures and a copy of the price bid with *the price columns without any price information* . Vendor needs to put a “tick mark” or write “quoted” on the price column for each quoted items. The technical offer should not contain any price information.

Envelop No.2 (Price Bid): It has to be sealed. It shall contain price bid only. It needs to be

fully signed. The envelopes must be super-scribed with the following information:

- Tender Reference Number i.e. NIT No.
- Due Date of opening (mentioned in item 6 on the first page of NIT)
- Name of the Bidder

Both the envelopes should be further sealed in an envelope super-scribing Notice Inviting Tender (NIT) No. with Name of work, due date for opening, bidders name & address.

- III.** Earnest Money: EMD of ₹ 1,20,000/- has to be enclosed along with the Technical bid (Part-I). The EMD shall be only in the form of Bank Draft in the name of “Inter-University Accelerator Centre”, payable at “New Delhi”. No cheque / cash shall be accepted as EMD. EMD of technically disqualified bidders will be returned within 30 days from the date of evaluation of the technical bids. EMD of successful bidder will be released on successfully delivery of the integrated bobbin structure at IUAC, Delhi. Tender received without earnest money from the bidder other than NSIC/SME and foreign bidders will be rejected.
- IV.** Scope of Work: Detailed scope of work, terms and conditions, specifications etc. are enclosed with this NIT as per Annexure I.
- V.** Completion time: The offer should accompany a realistic time chart for the completion of job. The time will start after receiving the design drawings from IUAC. The vendor shall convert the design drawings into manufacturing/fabrication drawings and complete it within 30 (thirty) days. IUAC personnel will review the fabrication drawing and necessary approval will be given to the vendor after thorough discussions/meeting. The vendor needs to complete the fabrication job and it needs to be ready for delivery within 120days after receiving the final approval of fabrication/manufacturing drawing from IUAC personnel. IUAC personnel will inspect all the components at vendor’s site before delivery. Any delay in completing the work for reasons attributable to the bidder is liable for liquidated damages as per clause (XV) of NIT. Under the force-majeure conditions or any delay due to reasons beyond control of the bidder, IUAC may grant suitable time extension for which the supplier has to request along with the justification/ reasons well in advance to the IUAC for approval without any prejudice to price escalation. No time extension request shall be considered after the expiry of completion period/contract. The decision of the IUAC, will be final and binding on the bidder/supplier.

- VI.** Validity of Tender: Tender shall be valid for our acceptance without any change in rates and NIT conditions for a minimum period of 120 days from the date of opening of price bid.
- VII.** Escalation: No escalation over and above items rates quoted by the bidder shall be paid during the execution of contract.
- VIII.** Deviations: No deviation from the stipulated terms and conditions will be allowed. Tenders should be unconditional.
- IX.** Strict compliance with these contract documents is required unless otherwise specifically agreed in writing.
- X.** At the start of the contract, the successful bidder shall assign a person/ persons who will be responsible for the reporting to, and communication with the IUAC person.
- XI.** The successful bidder needs to work in close coordination with the designated IUAC person at all stages of the contract in order to resolve any technical issues or problems arise, in the most timely and efficient manner.
- XII.** Correspondence: All the commercial correspondence in respect of tender/contractual obligation shall be made to A.O. (S&P), Inter University Accelerator Centre, Aruna Asaf Ali Marg, New Delhi-110067, India (Email: joseph@iuac.res.in). For any technical query please contact Dr. Soumen Kar (kar.soumen@gmail.com)
- XIII.** Material Certificate and CMM/laser based measurement report: Test certificate along with material composition for the material used has to be submitted during on-site delivery of the item. In addition to this a complete CMM/Laser based measurement report of the fabricated item should also be submitted.
- XIV.** IUAC reserves the right to accept or reject any tender without assigning any reason and does not bind himself to accept the lowest tender and the decision of the centre in this regard will be binding on all the bidders. Tenders not complying with any of the provisions stated in this tender document are liable to be rejected.
- XV.** Terms of Payment: All Payment shall be made by bank transfer for the Indian bidder or through the letter of credit in case of foreign bidder, on submission of bills by the vendor after due certification by the IUAC personnel. For Indian bidder, 100% of the cost shall be released after delivery of item at IUAC, New Delhi. All payments shall be made after deduction of income tax at source and work contract tax applicable from time to time. For foreign suppliers the payment will be through L/C against shipping documents.

- XV.** Liquidated damages: In case the work is delayed beyond the specified completion period for reasons attributable to the bidder, deductions on account of liquidated damages @ 0.5% of the order value per week will be deducted subject to a maximum of 5% of the total works.
- XVI.** Tender once submitted will remain with the centre and never be returned to the bidders.
- XVII.** The Director, IUAC reserve the right to terminate the contract on account of the failure, poor workmanship, non-compliance of set norms/ specifications for the works, delay in progress of work, violation of any contract provisions by the Bidder. The contract can also be terminated at the request of bidder. In such cases the supplier is liable to pay liquidation damages @ 5% of tendered value besides security deposit.
- XVIII.** In case of any ambiguity / dispute in the interpretation of any of the clauses in this Tender Document, the decision of Director, IUAC shall be final and binding on all parties.
- XIX.** Any dispute arising out of this contract will be subjected to jurisdiction of New Delhi/Delhi.

Accepted
(Bidder's Signature)

Place:

Date:

Name:

Seal:

ANNEXURE-I

Technical Specifications and Scope of work

for

Fabrication of integrated Bobbin and stand of superconducting MRI magnet

Tender No: IUAC/ NIT/

A. Technical Details

The bidder has to quote for Fabrication and supply of one set of integrated bobbin and stand for superconducting MRI magnet as per drawing given in Annexure II.. The major components of the integrated bobbin structure and the corresponding material have been listed in the following table.

S.N	Major components	Material	Nos.
1	Bobbin for the MRI magnet	Aluminium Alloy (5083-O)	1 set
2	Bore of the Helium Vessel	SS-304L	1 set
3	End Flanges	Aluminium Alloy (5083-O)	2 sets
4	Bobbin stand	Low carbon steel AISI 1020	1 set
5	Rods	SS 304	4 sets

1. The bobbin, bore of the helium vessel and end flanges have already been designed. Hence the design of the bobbin, bore of the helium vessel and end flanges are not within the scope of the vendor. IUAC has given a tentative design of the bobbin stand. If needed, the successful bidder may re-design the bobbin stand to have better mechanical stability and easiness in handling. Bidder need to submit the tentative design along with the technical bid.

2. Fabrication/Engineering drawings must be prepared by the vendor based on the drawings provided by IUAC. Vendor needs to provide the fabrication drawing with tolerances for the same in metric unit. A soft copy of the drawings will have to be submitted to concerned technical personnel and after due approval only fabrication can be started. IUAC personnel may visit the vendors site for final reviewing of the fabrication drawing. The soft copy of final version of all fabrication/engineering drawing needs to be submitted to IUAC.
3. The successful bidder shall also provide electronic copies of the all the engineering drawings in .pdf format along with SolidWorks or equivalent format. The vendor must keep a record of all the changes, where deviation from the information or dimensions contained in the manufacturing drawing is authorized by the IUAC person during the manufacturing. The vendor should update all the drawings according to the final production.
4. The bidder need to provide the details of methodology/fabrication procedure/work sequence /quality control in the Technical bid.
5. The offer should accompany a realistic time chart for the various activities from the date of supply order.
6. Minor changes in design should be allowed without any extra cost.
7. Bidders can contact IUAC personnel for any clarification before submitting the quote.
8. The magnet bobbin structure will have to be fabricated with specified tolerances and surface finish. The fabricated structure has to be handled carefully so that no grease or dirt is assembled on it.
9. The dimensions given in the drawing are indicative. The actual dimension of the bobbin will be shared to the successful bidder after signing NDA.
10. IUAC will not supply any material to the vendor. A material test certificate needs to be submitted by the bidder at the completion of the fabrication of integrated bobbin structure. The arrangement of fabrication material, fabrication related equipment and fastening equipment (if necessary) will be manufacturer's responsibility. The metallic part of the bobbin stand shall be coated with anti-corrosive and fire-retardant powder in Blue or Yellow paint.
11. The vendor should guarantee the proper welding procedure over Aluminium alloy body. Vendor may indicate the welding procedure to be followed for the job.

Vendor may mention any special technique of welding to be used for fabrication of the bobbin.

12. The dimension and tolerances are very critical for the magnet bobbin, so to certify its proper dimensioning and tolerances it is mandatory for the manufacturer to have suitable inspection mechanism (Laser based measurement or CMM measurement or any equivalent measurement). The verification of the dimension and geometrical tolerance will be performed in presence of IUAC personnel and inspection report shall be provided.
13. The residual stresses present either in the raw material or developed during the manufacturing process of the bobbin needs to be removed by annealing prior to final machining to achieve the desired dimensional accuracy and tolerances.

B. Quality Control, Inspection and Testing

1. Quality control

The vendor should have an independent quality control in executing the fabrication of the bobbin structure and its report shall be forwarded to the designated IUAC person. All the materials procured for the bobbin, helium bore shall conform to the material specifications. The material certificates shall be provided to IUAC as and when required.

2. Dimensional Verification

Dimensional accuracy of the bobbin structure shall be checked on the CMM /Laser based measurement in presence IUAC personnel during on-site inspection. The corresponding report shall be generated and submitted to IUAC.

3. Testing of welding joints

Non-destructive weld examination (Radiography) need to be done wherever necessary and the corresponding report to be submitted to IUAC

4. Mass Spectrometer Leak Detection (MSLD) of welding joints

The collar or ring flanges of the helium bore will be welded to the cylindrical shell of the bore. Similarly, there will be seam welding on the cylindrical shell. The welding joints of the helium bore need to be leak tested using MSLD in presence of the IUAC

personnel during onsite inspection. The vendor need to have a definite plan for the leak testing of the welding joints of the helium bore. If require, two end plates (Aluminium) can be used for blanking off the Helium bore during the leak testing. If require any groves for Viton 'O' ring can also be made on the Aluminium end plates. The bore of the helium vessel should be leak proof up to 5×10^{-9} Torr-l/s.

C. Cleaning, Handling, Packing and Shipment

1. The dimension of the bobbin structure is very crucial in achieving the desired performance of the MRI magnet. Hence, the fabricated structure has to be handled carefully so that no starches on the winding faces of the bobbin and flanges of the helium bore. The entire structure need to be degreased before delivery. The bobbin structure need to be free from any dirt and traces of oil.
2. Before the shipment of the consignment, the vendor shall make sure that all the items in the scope of the supply are fully included in the packing boxes. Packing cases must be robust enough to take care of the impact during handling and transportation. Packing shall be suitable for storage of items in a tropical climate. Suitable stiffener and cushion should be provided to arrest any movement and vibration during the transportation. Shock and tilt indicators must be fitted to reveal evidence of mishandling during transportation from the vendors site to IUAC.
