

**BHARATHIAR UNIVERSITY : COIMBATORE 641 046**

**TENDER NOTICE**

**Ref.No. C7/DST-PURSE/9486/2018**

**Date. 19.04.2018**

Sealed Tenders are invited by the Registrar, Bharathiar University, Coimbatore 641 046 up to 3.00 P.M on **22.05.2018** (Separate Technical bid and Commercial bid) from the **ISO Certified firms for the supply and installation of Multiprobe Nuclear Magnetic Resonance Spectrometer under DST-PURSE (Phase-II) Program.**

<p><b>TENDER COST: Rs. 15,750/- EMD: Rs.2,50,000/-</b> <b>LAST DATE FOR SUBMISSION OF TENDERS:22.05.2018 up to 3.00P.M.</b> <b>TECHNICAL BIDS OPENING DATE : 22.05.2018 at 4.00 P.M.</b></p>
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For Tender document and details of Terms & Conditions can be downloaded from our website [www.b-u.ac.in](http://www.b-u.ac.in) and [www.tenders.tn.gov.in](http://www.tenders.tn.gov.in) between **23.04.2018** to **22.05.2018**.

**NOTE :For any clarifications please contact**

**Dr.P.S.Mohan, Prof & Head, Dept.of Chemistry**

**Ph.No. 0422- 2428311 during office hours**

**REGISTRAR i/c  
HARATHIAR UNIVERSITY**

**BHARATHIAR UNIVERSITY –COIMBATORE 641 046**

**TENDER CONDITIONS AND INSTRUCTIONS FOR THE SUPPLY AND  
INSTALLATION OF MULTIPROBE NUCLEAR MAGNETIC RESONANCE  
SPECTROMETER**

1. Sealed Tenders will be received by the **Registrar, Bharathiar University from the ISO Certified firms up to 3.00 p.m. on 22.05.2018** for the **supply and installation of Multiprobe Nuclear Magnetic Resonance Spectrometer to be purchased under DST-PURSE (Phase-II) Program as specified in the schedule (Appendix I).**
2. Tender should be addressed to the Registrar, Bharathiar University and should be only in sealed covers by Registered post/ or in person. Tenders received in ordinary covers without seal will not be considered.
3. The tender cover with **Ref.No. should be superscribed as “Tender for the supply and installation of Multiprobe Nuclear Magnetic Resonance Spectrometer under PURSE (Phase-II) Program.** The covers received without such superscription will be rejected summarily. All covers containing the tender should be sealed. Separate sealed covers should be used for technical and price bid and please be superscribed on the cover
4. **Technical Bids will be opened on 22.05.2018 at 4.00 p.m. by the Registrar or his/her nominee in the presence of the tenderers** or their representatives who may be present at the time of opening. The representatives of the tendering firms who are attending during opening of the tenders should bring a letter of authorization from the tendering firms, which they represent to identify their bonafied.
5. Each tender shall be accompanied with the requisite Tender Cost of **Rs.15,750/- and EMD of Rs.2,50,000/-** in the form of DD drawn in one of the Nationalised Banks in the name of “Registrar, Bharathiar University” payable at Coimbatore. Cheques and Bank Guarantees will not be accepted. EMD will not carry any interest.

The tender submitted without the earnest money deposit be summarily rejected provided that any category of tenderers specifically exempted by the Government from the payment of earnest money deposit /tender cost necessary certificate should be enclosed for exemption otherwise it will be liable for rejection.

6. Tenders received late will be returned to the tenderer unopened.
7. Any quote where the financial bid is included in the technical bid will be summarily rejected.
8. a) The tender should contain particulars like the name and address of the Tenderers, Net rate including GST, transportation, delivery, installation and commissioning of the above equipments .  
b) The rates will be kept firm for 180 days from the date of the opening of the Tenders in acceptance.  
c) The rate should be quoted both in words and figures with detailed technical specification, make and model. Any scoring or overwriting should be attested by the

tenders with full signature. The rate quoted should be firm and should not be subject to any variation clauses.

- d) University shall not pay increase in duties, taxes and surcharges on account of any revision by the Government at the time of supply and installation.
- e) Supply shall be as per the specifications mentioned in the Appendix and according at the time of supply
- f) Supply shall be as per the specifications mentioned in the Appendix and according at the time of supply.
- g) The tender should quote as per the tender specifications of the equipment only. Option shall be given separately.
- h) The tender form (Annexure I & II) should be completed in all respects. Wherever the information is not relevant to your bid, the space should be appropriately filled with 'NA or NIL'. No space shall be left blank. All the crucial documents should be signed and enclosed otherwise the tenders are likely to be rejected.
- i) If the given space is insufficient to give required information, additional sheets may be added. Each such additional page shall be numbered consecutively and shall bear our tender reference number and signature of bidder or his/her authorized agent.

**9. Faxed bids are liable to be rejected.**

- 10. The tender shall be valid for a maximum period of 180 days from the date of opening. If the tender validity is less than 180 days the tender will be rejected as non-responsive tender. Tenderer should not withdraw his tender after the tenders are opened. In case the tender is withdrawn after it opened, the EMD will be forfeited and black listed.
- 11. The EMD of the unsuccessful tenders will be refunded immediately after the tenders are disposed of by the competent authority.
- 12. Successful tenderer shall execute an agreement for the fulfillment of contract in the stamp paper in the model form. The conditions stipulated in the form should be strictly adhered to and violation of any of the conditions will entail termination of the contract without prejudice to be right of the University and to recover any consequential loss from the successful tenderer.
- 13. Successful tenderer shall remit a **Security deposit 6.5% to the order value** Security Deposit will be refunded at the end of warranty period subject to the satisfaction of the University. The EMD may be adjusted towards Security deposit payable.
- 14. If the successful tenderer failed to act upto the tender or backs out when his tender accepted, security deposit will also be forfeited to department.
- 15.a)The material should be supplied strictly in accordance with the specifications given in the Appendix and should fulfill the successful tests carried out by the Competent Authority of the University. The supply and installation should be made as per the delivery schedule to be sent by the Registrar along with the exact location of the work. The guarantee period shall take effect from the date of installation. Successful tenderer shall be liable to change any defective part during the warranty period. In either case the damaged or defective items will have to be taken back at supplier's cost and risk.

16. The commissioning and installation should be completed within the stipulated period mentioned in the supply order. If the supply is not made within the period, the supply order will be cancelled and the EMD & Security deposit will be forfeited.
17. The materials are to be guaranteed for at least one year of installation and commissioning against manufacturing defect and bad workmanship. The warranty period specified will commence from the date of installation.
18. The materials quoted shall conform to ISI standard. The make of the materials shall be mentioned in the tender.
19. Any dispute arising out of this contract shall be settled only at the court having jurisdiction of Coimbatore.
20. The authority competent to accept the tender reserves the right to reject or accept any tender without assigning any reasons thereof.
21. Regarding the acceptance of supply with reference to the specification and quality of materials supplied, the decision of Registrar shall be final.

22. **Price:**

- a) **For Imported:** The Price shall be quoted in Currency for CIF Chennai /CIP Chennai / FOR Coimbatore. If the equipment is imported but quoted in INR please quote the basic price inclusive of duties/GST as per the existing Govt.rules. If necessary, the required documents will be provided along with the supply order.
- b) **For Indigenous:** Quote the price in INR inclusive of GST and warranty. Separate charges for warranty will not be considered at any cost, should mention the valid GST Registration/ Numbers along with the copy of the registration Certificate.

22 The University is registered with DSIR and eligible for exemption towards customs duty as per the Government Notification No: 51/ 96 Customs Dt.23.7.1996.and Central excise duty as per Government Notification No.10/97 Central Excise Dt: 1.3.1997.

23 This University do not have IEC number and exempted from application of rules as per Foreign Trade for importers in certain cases since 1993. This is a Research Institution Permanent IEC numbers shall be used at the time of Customs clearance .

24 **The customs duty after providing duty exemption certificates if applicable as per customs tariff for the said equipments shall be paid by the local supplier /Clearing agent at the time of Customs clearance which will be reimbursed subject to the condition on submission of original customs bills to the University after delivering the equipment to the department concerned. Necessary documents will be provided after receipt of original invoice/Cargo Arrival/Shipment notice from the Principal Supplier.**

**The Customs clearance, transportation and delivery charges up to the University have to be borne by the firm.**

25. **PAYMENT:**

- a) If the quoted price in currency . The payment will be made by irrevocable Letter of Credit (LC) / advance FDD(only copy) in favor of the Principal Supplier /Currency Wire Transfer to the Principal Supplier only after supply and installation of the equipment .

Advance Currency Wire transfer is not applicable

b) If the quoted price in INR, the payment will be made after supply and installation. No advance payment will be made.

**26. Loss or Damage:** External damages or shortages that are prima facie the results of rough handling in transit or due to defective packing will be intimated within a fortnight from the date of receipt of the material, Internal defects, damages of any internal parts that cannot ordinarily be exhibited on superficial inspection though due to bad handling in transit or defective packing will be intimated within two months from the date of receipt of the stores. In either case the damaged or defective stores will have to be taken back at supplier's cost and risk.

**27 Guarantee:** The Supplier shall undertake to repair free of charge or replace any defective part of the equipment supplied due to defective or faulty design or bad workmanship during a period of three years from the date of commissioning of the equipment.

**28 Leaflets and Descriptive Literature:** Full descriptive particulars and manuals of the equipment offered should accompany the tender. Information regarding the country of manufacturer or origin of materials in the manufacture of articles should be furnished.

**29. Tests:** Manufacturer's certificate for the routine tests specified in the BSS of the test issue or as per manufacturer's standard practice should be forwarded in duplicate. The materials will be rejected, if the test results are not satisfactory.

**30. Penalty Clause:** The delivery should be guaranteed by you under the penalty clause mentioned hereunder:

“Should delivery be delayed by strike, lockouts, fire accidents or any cause whatsoever, beyond the reasonable control of the contractor and whether such delay or impediment occurs before or after the time or extended time for dispatch or completion, a reasonable extension time shall be granted.

If the contractor fails in due performance of this contract, within the time fixed by the contractor the extension thereof, the contractor is liable at discretion of the purchaser to a penalty of 4% per month of the contract value of such portion only of materials as cannot, in consequence of the delay, be used during each month between the appointed or extended time as the case may be and the actual time of acceptance, and such penalty shall be in full satisfaction of the contractor's liability for the delay but shall not in any case exceed 25 % of the contract value of such portion of the materials.

### **31 Additional Documents required for qualification**

- ISO Certificate
- Number of years standing in the business.
- Average turnover in the last three years.
- Backup facility for the warranty period.
- GST Number along with the copy of the registration Certificate
- PAN Number along with the copy of PAN
- Company Profile.
- Copy of the supply order and installation record at reputed institutions / organizations and sufficient service back-up in Tamil Nadu / South India

- Customer Satisfaction Certificate from any of the institutions/organization is to be attached with the Technical Bid And Price Bid.
  - Any other relevant details in support of the items specified.
- 32. Only qualified bidders will be considered for technical evaluation. The bidders who are disqualified in the Technical evaluation, the Commercial bid will not be considered.**
- 33. Price bid evaluation will be done for imported inclusive of the customs duty /Customs clearance and other charges. For indigenous inclusive of all GST, warranty and other charges etc.**
34. The University will not offer any explanation to those tenderers whose technical bid has not been found acceptable by the technical evaluation committee.
35. Tenders will be considered only from the ISO certified Manufacturers / authorized distributors with sound technical and financial capabilities.
36. The University's general rules for the supply of the materials and works will apply on this purchase also.
37. Training at University Campus at free of charge.
- 38. Tender shall be submitted with brief description, make and model number, technical specifications etc. along with catalogue/manual.**
39. No communications from any tenderer adding to/adhering or explaining any terms of the tender will be considered prior to the submission or after opening of the tenders by the competent authority
40. In case of any modifications in specifications/terms and conditions/ any clarifications to the bid document it will be hosted in our website only and bidders are requested to log on to our website from time to time regularly for any amendment and no separate corrigendum will be issued in this regard.
41. The tenderer must not be blacklisted by Central Government, State Government or Government of Corporations or any organization in India. A certificate or undertaking to this effect must be submitted.
42. The tender is submitted subject to and agreeing the above conditions duly attested and certified.

**SIGNATURE OF THE TENDERER**



# Technical Specifications for 400 MHz Multiprobe Nuclear Magnetic Resonance (NMR) Spectrometer

## Magnet:

- ❖ Latest state of the art 400 MHz FT-NMR spectrometer for multi-dimensional and multi nuclear solution state NMR experiments.
- ❖ Ultrashielded superconducting magnet system including anti vibrational stand with an operating field of 9.4 tesla with active shielding and standard bore size (54 mm); with field stability of <10 Hz/hour or better.
- ❖ Shortest possible radial and axial distance of 5 Gauss stray field from the center of the magnet. Please specify the stray field distances
- ❖ Cryogen cooled shim system in addition to room-temperature shims for optimal line shape (please mention the number of cryogen-cooled and room-temperature shim coils); automated gradient shimming capability with associated accessories (software/hardware).
- ❖ Minimum 300 days liquid Helium hold time and long liquid Nitrogen hold time. Please specify the total liquid He and liquid N<sub>2</sub> hold volume, refill interval and refill volume for liquid He and liquid N<sub>2</sub>.
- ❖ Liquid Helium and Liquid Nitrogen level indicating digital meters with alarms.
- ❖ All support equipment for cryostat (e.g. liquid He and liquid N<sub>2</sub> transfer line).
- ❖ Pneumatic sample load/spin/eject system on both solid and liquid state.
- ❖ Optional - Auto sampler with a capacity of 24 samples or above.

## Console

- ❖ Equipped with two RF channels (please specify the frequency range of operation with best frequency and phase resolution) in addition to lock channel with provisions for deuterium decoupling and observation. Please specify the configuration and bandwidth of all the channels. Minimum 2 channel architecture with upgradation possibility to 3-channel and solid-state capability. [This should be an add-on accessory] / Two RF Channel Spectrometer with one receiver can also be accommodated for consideration.
- ❖ Dual/Multi receiver capability with digital receiver for simultaneous acquisition of multinuclei. Excellent detection capability and elimination of artefacts such as quadrature images with control unit having state of the art technology for signal acquisition, filtering, sampling, multi nuclei acquisition etc. A future upgradation with 3-channel spectrometer with 3<sup>rd</sup> receiver should be possible to be added later for Protein measurements. [This should be an add-on accessory]
- ❖ Broadband frequency generation for all channels.
- ❖ Waveform generators for all channels for pulse shaping (please specify bits and total memory of the shape card).



- ❖ Quadrature-artifact-free phase sensitive detection.
- ❖ Receiver control unit for signal acquisition with real-time digital filtering along with oversampling technology – with dual receiver. / Single receiver can also be accommodated for consideration
- ❖ Frequency, phase and amplitude shaping capability with individual/simultaneous switching of the parameters in 25 ns.
- ❖ Real time calculation of parameters of pulse sequences.
- ❖ Broad-banded frequency generation for all the channels.
- ❖ Fast Ethernet based communication system between all the channels.
- ❖ High-power linear broadband amplifiers of >300 W for X-channel and ~100 W for  $^1\text{H}$  (and/or  $^{19}\text{F}$  channel) for double resonance liquid state. Please specify all relevant parameters including power (Wattage), frequency range, duty cycle, maximum pulse duration etc. Information please be provided for solid state/3 channel upgradation in future.
- ❖ Multinuclear preamplifiers with a  $^2\text{H}$  preamplifier for lock channel and observation.
- ❖ Automatic high performance gradient shimming for 1D and 2D along with lock, spinning and insert and ejection of samples.
- ❖ Lock system should have high precision phase- and field-corrections (please provide documental evidence).
- ❖ Built-in tune/match display and add-on filters for noise reduction.
- ❖ ADC with high dynamic range and sampling rate. Please specify the resolution of the ADC (in bits) and the maximum sample rate.
- ❖ Z-gradient accessory with a maximum available provision.
- ❖ Pulsed field gradients of any desired shape with high resolution.
- ❖ Variable temperature unit with the facility for -150 °C to +150 °C with a resolution, accuracy and stability better than 0.1 °C. Sample temperature should be monitored and not the gas temperature. Also the variable temperature range may be flexible in the lower temperature range upto -100° C.
- ❖ State-of-the-art software interface for NMR acquisition and processing.
- ❖ Single Bay console unit.

### Probes for 400 MHz NMR Spectrometer:

- 1) 5 mm double-resonance broadband high resolution probe with an actively shielded single axis Z-gradient for observation/irradiation of all NMR nuclei in the range  $^{31}\text{P}$  to  $^{109}\text{Ag}$  in addition to  $^1\text{H}$  (please quote for maximum broadband range available); including  $^1\text{H}$  ( $^{19}\text{F}$ ) and vice versa including facility for 1H-19F correlation 2D expts. sensitive to low gamma nuclei detection; a deuterium lock channel. Variable temperature range unit with the facility from  $-150\text{ }^\circ\text{C}$  to  $+150\text{ }^\circ\text{C}$ ; automated tuning and matching. Also the variable temperature range may be flexible in the lower temperature range upto  $-100\text{ }^\circ\text{C}$ .
- 2) 5 mm double-resonance ( $^{13}\text{C}/^1\text{H}$  nuclei) high resolution probe ( $^{13}\text{C}$  observe/sensitive) with an actively shielded single axis Z-gradient for observation and a deuterium lock channel. Variable temperature range unit with the facility from  $-150\text{ }^\circ\text{C}$  to  $+150\text{ }^\circ\text{C}$ ; automated tuning and matching. Also the variable temperature range may be flexible in the lower temperature range upto  $-100\text{ }^\circ\text{C}$ .
- 3) Optional: To study natural products and/or samples of low amount/quantity, a 1.7 mm variable temperature triple-resonance probe for observation of  $^1\text{H}$ ,  $^{13}\text{C}$  and  $^{15}\text{N}$  with auto tuning and matching and having pulse field gradient capability with minimum operational temperature range of  $-50$  to  $+80\text{ }^\circ\text{C}$  with all accessories for low and high temperature operations. All the relevant probe specifications such as 90 deg pulse lengths, sensitivity etc for standard nuclei ( $^1\text{H}$ ,  $^{13}\text{C}$ ,  $^{15}\text{N}$ ) are to be provided.

Please specify the following:

- Pulse widths for  $^1\text{H}$ ,  $^{13}\text{C}$ ,  $^{19}\text{F}$ ,  $^{31}\text{P}$ ,  $^2\text{H}$  and  $^{15}\text{N}$  using standard samples. Please specify the sample used. Also provide the standard samples for all these nuclei
- Best resolution and line-shape (under sample spinning and non-spinning conditions). Please specify the line-widths measured using the standard sample.
- Best Signal-to-noise (S/N) ratio values for each nuclei of the probe measured using standard samples (Please provide data and mention the sample used). Provide specifications for each nuclei.
- Maximum gradient strength
- Gradient recovery times (not more than  $100\text{ }\mu\text{s}$ ).
- Decoupling pulse width, power, bandwidth, duty cycle capability on each RF channel.
- Temperatures range over which the probe can be used.

### User-interface:

A compatible high-end workstation with preferable Windows operating system, LED monitor, CD/DVD read/write drives, USB ports.

Compatible high-end laser jet b/w printers.

### NMR software:

Latest version of the NMR software for spectrometer control, data acquisition and processing, and automatic recording of multiple experiments. Software tools for Structure Analysis,

Integration and Deconvolution of 1D, 2D and 3D spectra, NMR simulation, Multiplet analysis, Relaxation data analysis.

Automatic setup with acquisition, analysis and quantification of the NMR samples.

High-end graphic tools for plotting one- and multiple-dimension spectra, for drawing structure and for making presentations on NMR experiment.

Optional - Structure elucidation software.

Additional workstation for data processing having similar configuration as acquisition PC.

**Other Requirements:**

Liquid Helium and liquid nitrogen for installation should be included in the quotation

Suitable UPS with minimum back up 5 hour for uninterrupted power supply for functioning of the spectrometer

Oil free latest version air Compressor of sufficient capacity and appropriate dryer with filter for supply of dry air with appropriate dew point for smooth operation of pneumatic unit, autosampler and variable temperature unit

50 L liquid Nitrogen Dewars- 4 Nos, one trolley/tray with wheels to carry LN2 dewars, Liquid Nitrogen and Liquid Helium transfer devices are to be quoted in INR

Liquid Helium supply and filling contract for 5 years from the date of installation

5 mm standard NMR tubes for the spectrometer – 500 numbers

**Optional Requirements:**

Real-time (online) reaction monitoring kit (syringe pump and capillary)

Extended warranty for additional 2 years should be quoted

| Please provide a list of NMR instruments sold in India

**SIGNATURE OF THE TENDERER**



## ANNEXURE – I

### TECHNICAL BID

**Tender reference No:** \_\_\_\_\_

1. Name and address of Bidder
2. The details of EMD  
Amount of EMD Rs. \_\_\_\_\_, DD No. \_\_\_\_\_ dt  
Bank: \_\_\_\_\_
3. Due Date of bid :
4. The bid shall remain valid for acceptance for 180 days, from the date of tender opening.
5. Schedule of Requirements:

Sl. No	Brief description of stores	Qty Required	Qty Offered	Delivery	Unit price (Rs)	Total Cost (Rs)
				At Bharathiar University Coimbatore	To be filled in Annex:II	
(i)	GST		%	-	-	
(ii)	Wararanty5years-			-	-	
(ii)	Other charges, if any			-	-	
<b>Grand total cost in Rs.</b>						
Total cost (in words) _____ Rupees.						

**Note: (1) All columns must be filled up.**

**(2) Adhering to the format given above is a pre- requisite for considering your bid.**

**(3) Please indicate applicability.**

I/certify that I/We have completely read and understood and agree to all the terms & conditions given in Part II.

Date : \_\_\_\_\_ Signature of Bidder : \_\_\_\_\_

Office Stamp \_\_\_\_\_ Signing as : \_\_\_\_\_

Name in block letters : \_\_\_\_\_  
:Mobile No. \_\_\_\_\_ Fax No. \_\_\_\_\_ e mail \_\_\_\_\_

**ANNEXURE: II**

**PRICE BID**

**Tender reference No:** \_\_\_\_\_

1. Name and address of Bidder
2. The details of EMD  
Amount of EMD Rs. \_\_\_\_\_, DD No. \_\_\_\_\_ dt  
Bank: \_\_\_\_\_
3. Due Date of bid :
4. The bid shall remain valid for acceptance for 180 days, from the date of tender opening.
5. Rates for items given in Techno-commercial offer at Schedule of requirements are as follows:

SINo	Brief description of stores			QtyOffered	Delivery	Unit price	Total Cost
					At Bharathiar University Coimbatore		
(i)	GST		%	-	-		
(ii)	Other charges, if any			-	-		
<b>Grand total</b>							
Total cost (in words)		Rupees.					

- NOTE :**(1) All columns must be filled up.  
 (2) Adhering to the format given above is a pre- requisite for considering your bid.  
 (3) Please indicate applicability.

**Date** : \_\_\_\_\_ **Signature of Bidder** : \_\_\_\_\_  
**Office Stamp** \_\_\_\_\_ **Signing as** : \_\_\_\_\_  
 \_\_\_\_\_ **Name in block letters** : \_\_\_\_\_  
**Tele No.** \_\_\_\_\_ **Fax No.** \_\_\_\_\_ **e mail** \_\_\_\_\_

**LETTER OF ACCEPTANCE**

**To**

**THE REGISTRAR  
BHARATHIARUNIVERSITY  
COIMBATORE – 641 046**

**I/We agree to furnish required supplies /services as detailed in the Tender schedule or such portions thereof as you may specify in the Acceptance of Tender in accordance with the General Terms and Conditions governing the contract / supply order enclosed hereto duly accepted on receipt of the order for the same.**

**I /We agree to hold this offer open until and shall be bound to supply / omission /erect the equipment and dispatch the same within the specified period.**

**I/ We agree to supply and commission /erect the equipment and complete the whole of the work and hand over to the purchaser within the period of weeks. From the date of receipt of intimation from you regarding acceptance of this tender / receipt of supply order.**

**Signature of the bidder  
With office stamp  
Name & Address**

**Station  
Date:**

