

JAIN/CNMS/NMR/2024

Request for quote (RFQ) from domestic (India-based) manufacturers, Indian OEM or its authorized Indian distributor for a 400 MHz Liquid- and Solid-State NMR spectrometer

Tender Opening Date: 20th June 2024

Date for Pre-Bid Clarifications: 27th June 2024

Date for Posting for Final Revised Tender: 29th June 2024

Date for Final Bid Submission: 11th July 2024

This is an RFQ for procurement of a **400 MHz Liquid- and Solid-State NMR Spectrometer** System. The spectrometer will be installed at **Center for Nano and Material Sciences, Jain (Deemed-to-be University), Jain Global Campus, Bangalore – 562112.**

The quotation should clearly indicate the terms of delivery and installation schedule, the estimated date for commissioning and validation, and payment terms. **The tender should be submitted in two separate sealed envelopes - one containing the technical bid and the other containing the commercial bid, both of which should reach us, duly signed on or before 5 pm, 11th July 2024.**

Note: The Bidder should belong to either class 1, class 2 or MSME supplier distinguished by their “local content declaration” as defined by recent edits to GFR. They should mention clearly which class they belong to in a cover letter

- a) *Class 1 supplier: Goods and services should have local content of equal to or more than 50%.*
- b) *Class 2 supplier: Goods and services should have local content of equal to or more than 20% and less than 50%.*

Purchase preference as defined by the recent edits to GFR (within the “margin of purchase preference”) will be given to Class-1 supplier.

The quotations should be on FOR-Center for Nano and Material Sciences, JAIN (Deemed-to-be University) Bangalore basis in INR only.

The bids should be addressed and sent to:

The Director

Center for Nano and Material Sciences
Jain (Deemed-to-be University), Jain Global Campus
45th km, NH-209, Jakkasandra Post
Kanakapura Taluk, Ramanagara-562112
Bangalore, Karnataka (India)
Ph. No. +918027577212; +919886150598

Emails regarding any technical clarifications/queries should be sent to: br.geetha@jainuniversity.ac.in and CC to b.shubhankar@jainuniversity.ac.in


Prof. Geetha Balakrishna
(Signature with seal)
DIRECTOR
CENTRE FOR NANO AND MATERIAL SCIENCES
JAIN UNIVERSITY
Jain Global Campus, Jakkasandra Post,
Kanakapura Taluk, Ramanagara District - 562112

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Technical Specification and Requirements

400 MHz Liquid- and Solid-State NMR spectrometer

Please provide a detailed technical quote of your NMR system on the following points.

1. Magnet System (standard bore)

- The latest technology shielded magnet 9.4 Tesla with 54 mm bore superconducting magnet for 400MHz
- Helium hold time should be 365 days with a refill volume of 120 lts or less and Nitrogen hold time should be 14 days with a refill volume of 63 lts or less with auto-level monitoring and recording
- Liquid Helium and Liquid Nitrogen transfer Lines should be provided.
- At least 25 Room Temperature shims for excellent line shape.

2. Spectrometer

- **Radiofrequency (RF) Generator:** Two independent channels to handle nuclei such as ^1H , ^{13}C , ^{15}N , ^{19}F , ^{31}P , etc. nuclei, capable of performing multidimensional biological NMR experiments. High-performance power transmitters with a high band ($^1\text{H}/^{19}\text{F}$) amplifier (100 watts) and a low (or Broad) band (X) amplifier (300 watts or more).
- Gradient experiments such as Pulsed Field Gradient experiments with higher gradient strength, and faster shimming should be the capability of the machine. Frequency generation, digital receiver controls with oversampling, and digital filters should be quoted appropriately.
- Provisions for setting frequencies and field to lock and Digital-Auto Lock provide higher stability. The system should achieve the locking of the sample with different combinations of solvents in a short duration without manual interference.
- Auto shimming feature for solution-state and MAGIC Shimming for Solid state required.
- Gradient unit for Auto shimming ($^1\text{H}/^2\text{H}$) to achieve good line shape of sample and to perform all-new gradient pulse program-based experiment with the capability to run DOSY and other gradient experiments having capacity of 30 G/cm or better.
- Automatic Tuning and Matching for the nuclei understudy for liquid samples. Single Autotune unit for all probes (Ready model for future upgrading probes). If Autotune is not working still probe should be allowed to do manual tuning and matching to perform the experiments.
- Variable temperature experiments to be done in the range $+250\text{ }^\circ\text{C}$ to $-170\text{ }^\circ\text{C}$ with $\pm 0.1\text{ }^\circ\text{C}$ variations or a more comprehensive range should be provided. Accessories and consumables if any required for the variable temperature control should be quoted appropriately.
- The spectrometer should have the capability to use of triple resonance probes such as HCN/HCP in a standard two-channel configuration.
- High bandwidth receiver system with digital quadrature detection
- 16 Bit 100MHz Analog to Digital Converter or better to be quoted
- The maximum spectral width: $\sim 10\text{ MHz}$ or more

3. Probes

- 5mm multinuclear Broad Band Direct/observe Z-gradient Probe capable of covering nuclei range ^1H , ^{19}F , ^{31}P to ^{15}N (fully broadband including 60MHz to 70MHz), ^{39}K , ^{109}Ag with computer-controlled automatic tuning and matching (ATM) and able to perform all the inverse experiments with high S/N ratio for ^1H with 600 or more, ^{13}C with 270 or more on standard test samples. Variable temperature ranges from $-100\text{ }^\circ\text{C}$ to $+150\text{ }^\circ\text{C}$
- One 3.2MM HXMAS PROBE with essential accessories including 5 numbers of 3.2 mm Zirconium oxide rotors for solid-state NMR analysis. Probe should have the capability to cover

Nuclei for ^1H , ^{19}F , ^{31}P , ^7Li , ^{11}B , ^{23}Na , ^{27}Al , ^{13}C , ^{79}Br , ^{207}Pb , ^{29}Si , ^6Li , ^{15}N .

This probe includes additional attachments as well.

- MAS CONTROLLER
- CPMAS STANDARD SAMPLE KIT
- 3.2MM SOLID SAMPLING SET
- 3.2MM ZIRCONIA SAMPLE TUBE

4. Autosampler

- **Autosampler:** A fully functional autosampler with a capacity to handle at least 24 samples should be included along with the 24 spinners. All spinners should be applicable for the entire Variable temperature range i.e., +150 °C to -100 °C.

5. Hardware and Software Requirements

- A high-end workstation: with the latest configuration (minimum of 4GB RAM, minimum hard disk capacity 500 GB, 24" or bigger TFT Monitor, latest available processor, and other necessary accessories.
- **Additional Workstation for Data Processing:** A high-performance workstation (Windows operating system) for data processing with 8GB RAM and 1TB hard disk capacity with a 24" LED monitor should be provided.
- The software should be the latest one and should function with all the latest parameters automatically. The Windows-based operating system for NMR Data acquisition and processing of multidimensional experiments.
- The software should be enabled with all functionalities available in the software.
- Automated No D NMR software, Q NMR software, and J coupling analysis tool to be quoted.
- JASON Analytical software for data reporting and analysis with at least one year licence.
- Suppliers should offer unlimited NMR processing licenses for offline processing.

6. Accessories and Misc. Items

- 5 mm NMR Tubes – 500 numbers
- Initial supply of liquid helium and liquid Nitrogen for installation should be provided by the supplier.
- Warranty for Two years and should cover overall hardware/software and Annual maintenance contract (AMC) for one year after the standard two-year warranty period.
- Annual maintenance contract (AMC) for the 4th and 5th years after the standard two-year warranty and one-year AMC period should be fixed and mentioned in the quotation.
- On-site training for operation and maintenance should be given during the installation.
- Vibration Proof Table (one unit)
- Variable Temperature Accessory for solution-state NMR analysis:
10L Dewar (one unit) and 10L Dewar Heater S (one unit)

7. Other Requirements and Conditions

- All the technical details of all the basic items, essential accessories, and optional items should be produced.
- The minimum power required for the operation of the spectrometer with all the accessories must be specified in the quote.
- Specify the pre-installation requirement including the minimum ceiling height, room size, etc.

8. Please quote the shortest possible delivery time of the complete system. A delivery/installation time of less than six months from the time of placing the order is desirable.

9. Initial supply of cryogen for installation

The liquid helium required for installation should be provided by the NMR supplier. All responsibility/costs should be taken /covered by the manufacturer in case of quenching of magnet during installation, including all costs for re-charging, cryogenics, and if required complete replacement of magnet.

10. Consumables and Accessories:

- i. All items for preventive maintenance kit should be provided by the engineer during installation.
- ii. Essential spare parts for magnet/spectrometer.
- iii. Local supply items, such as a suitable compressor with a dryer with all the required filters, suitable UPS, and liquid nitrogen cryocans (2 numbers) with 50L capacity for refilling magnet with one trolley.

11. Onsite training

Initial on-site training to the staff for 2-3 weeks or as long as required to do all possible representative experiments and for routine maintenance. This can include special applications using software installed pulse sequences from the manufacturer.

Terms and conditions

- 1.1. The electrical system installation shall be carried out by qualified electricians either employed or contracted by the vendor.
- 1.2. The price quotation should include the cost of installation, validation, and training of potential users.
- 1.3. The system should be provided with at least 2-years of warranty, on all parts and labor, from the date of installation. Annual maintenance contract (AMC) for one year after the standard two-year warranty period should be provided. An annual maintenance contract (AMC) for the 4th and 5th years after the standard two-year warranty and One-year AMC period should be fixed now itself.
- 1.4. The vendor must provide routine maintenance of the associated equipment that is part of this tender.
- 1.5. The vendor should have qualified technical service personnel for the equipment based in India and should assure a response time of less than 48 hours.
- 1.6. Vendor must provide a user list (with contact details including emails and phone numbers) of at least 5 customers from Indian Institutes/Labs where similar systems have been installed.
- 1.7. The lead-time for the delivery of the equipment should not be more than 10 months from the date of receipt of our purchase order.
- 1.8. The indenter reserves the right to withhold placement of final order. The right to reject all or any of the quotations and to split up the requirements or relax any or all the above conditions without assigning any reason is reserved.
- 1.9. Wherever requested data must be supplied along with technical compliance documents. Technical bids without supporting data will be deemed as technically non-compliant.
- 1.10. All guaranteed specifications will have to be demonstrated at the time of installation. Any necessary standard samples for that purpose should be brought by the service engineers.
- 1.11. Printed literature and published papers in support of all compliance to the prescribed specifications may be provided.
- 1.12. Technical evaluation by the institute may include demonstration to verify functionalities and capabilities of the system quoted. Any discrepancy between the promised specifications and measurements will be deemed as technical non-compliance.
- 1.13. The Bidder's firm should have existence for a minimum of 3 years. Enclose Company Registration Certificate and balance sheet of last three years.
- 1.14. The Bidder should belong to either class 1, class 2 supplier or MSME distinguished by their "local content" as defined by recent edits to GFR. They should mention clearly which class they belong to in the cover letter

c) Class I supplier: Goods and services should have local content of equal to or more than 50%.

d) Class 2 supplier: Goods and services should have local content of equal to or more than 20 % and less than 50%.

Purchase preference as defined by the recent edits to GFR (within the “margin of purchase preference”) will be given to Class-1 supplier.

- 1.15. The bidder should sign and submit the declaration for Acceptance of Terms and Conditions as per -Annexure 4.
- 1.16. The Bidder must not be blacklisted/banned/suspended or have a record of any service-related dispute with any organization in India or elsewhere. A declaration to this effect has to be given as per Annexure 3.

Check List to Be Submitted Along with Technical Bid

Please Attach Documents in the order given below.

S. No.	Section Title	Document Provided (Yes/No)	Document Page Number(s)
1.	Signed Check List for Technical Bid (this page)		
2.	Annexure-1: Details of the Bidder		
3.	Annexure-2: Declaration regarding experience		
4.	Annexure-3: Declaration regarding track record		
5.	Annexure-4: Declaration for acceptance of terms and conditions		
6.	Annexure-5: Technical Compliance Sheet		
7.	Annexure-6: Make and Manufacturer Details		
8.	Masked Price Bid (Note that the pricing information should be masked)		
9.	Technical specifications, Brochures and additional certifications where required		

I hereby declare all the above requested documents are appended along with the technical bid. I understand that the bid will be considered unresponsive if any of the above requested information is missing. I also understand that any bid with pricing information in the technical bid documents will be considered unresponsive.

(Signature of the Bidder)

Printed Name

Designation, Seal Date:

Check List to Be Submitted Along with Commercial Bid

Please Attach Documents in the order given below.

S. No.	Section Title	Document Provided (Yes/No).	Document Page Number(s)
1.	Signed Check List for Commercial Bid (this page)		
2.	Commercial Bid		
3.	Costing Sheet for AMC for 2 years (4 th and 5 th years) beyond the mandatory 2-Year warranty and 1-year AMC Period		

I hereby declare all the above requested documents are appended along with the commercial bid. I understand that the bid will be considered unresponsive if any of the above requested information is missing.

(Signature of the Bidder)

Printed Name Designation

Seal Date:

Annexure-1: Details of the Bidder

The bidder must provide the following mandatory information & attach supporting documents wherever mentioned:

Details of the Bidder

S1. No	Items	Details
1.	Name of the Bidder	
2.	Nature of Bidder (Attach attested copy of Certificate of Incorporation/ Partnership Deed)	
3.	Registration No/ Trade License, (attach attested copy)	
4.	Registered Office Address	
5.	Address for communication	
6.	Contact person- Name and Designation	
7.	Telephone No	
8.	Email ID	
9.	Website	
10.	PAN No. (attach copy)	
11.	GST No. (attach copy)	

Signature of the Bidder

Name Designation, Seal

Date:

Annexure-2: Declaration regarding experience

To
The Director
Center for Nano and Material Sciences
Jain (Deemed to be University), Jain Global Campus
45th km, NH-209, Jakkasandra Post
Kanakapura Taluk, Ramanagara-562112
Bangalore, Karnataka (India)

Ref: Tender No:
Dated:

Sir/Mam,

I've carefully gone through the Terms & Conditions contained in the above referred tender. I hereby declare that my company / firm has....., years of experience in supplying and installing NMR spectrometers.

(Signature of the Bidder)
Printed Name
Designation, Seal Date:

Annexure-3: Declaration regarding track record

To,
 The Director
 Center for Nano and Material Sciences
 Jain (Deemed to be University), Jain Global Campus
 45th km, NH-209, Jakkasandra Post
 Kanakapura Taluk, Ramanagara-562112,
 Bangalore, Karnataka (India)

Ref: Tender No:
 Dated:

Sir/Mam,
 I've carefully gone through the Terms & Conditions contained in the above referred tender. I hereby declare that my company/ firm is not currently debarred / blacklisted by any Government / Semi Government organizations / institutions in India or abroad. I further certify that I'm competent officer in my company / firm to make this declaration.

Or

I declare the following

S. No	Country in which the company is Debarred/blacklisted/ case is Pending	Blacklisted / debarred by Government / Semi Government/organizations /Institutions	Reason	Since when and for how long

(NOTE: In case the company/ firm was blacklisted previously, please provide the details regarding period for which the company /firm was blacklisted and the reason/s for the same).

Yours faithfully
 (Signature of the Bidder)

Name Designation,
 Seal

Date:

Annexure-4: Declaration for acceptance of terms and conditions

To,
The Director
Center for Nano and Material Sciences
Jain (Deemed to be University), Jain Global Campus
45th km, NH-209, Jakkasandra Post
Kanakapura Taluk, Ramanagara-562112,
Bangalore, Karnataka (India)

Ref. Tender No:

Dated:

Sir/Mam,

I've carefully gone through the Terms & Conditions as mentioned in the above referred tender document. I declare that all the provisions of this tender document are acceptable to my company. I further certify that I'm an authorized signatory of my company and am, therefore, competent to make this declaration.

Yours faithfully,

(Signature of the Bidder)
Name
Designation, Seal

Date: