

**टाटा मूलभूत अनुसंधान संस्थान हैदराबाद**  
**TATA INSTITUTE OF FUNDAMENTAL RESEARCH HYDERABAD**  
प्लाट नं. ३६/पी, गोपनपल्ली ग्राम, सेरिलिंगमपल्ली मंडल, रंगा रेड्डी जिला,  
हैदराबाद – ५०० १०७, तेलंगाना.  
Plot No.36/P, Gopanpally Village, Serilingampally Mandal, Ranga Reddy District,  
Hyderabad - 500 107, Telangana, India.

टेलीफोन /Telephone: +91-40-2020 3020  
वेबसाइट /Website: www.tifrh.res.in

ई-मेल /Email: purchasegroup@tifrh.res.in  
तिथि /Date: 18-03-2024

**Global Tender Ref. No. TIFR/PD/GT/CA23-10/23-24/M/10 for Supply, Installation and Commissioning of State of the art 900 MHz NMR Spectrometer to carry out solid and solution state high-resolution NMR experiments to TIFR Hyderabad.**

**Sub: Pre Bid meeting Clarification against Tender Ref. No. TIFR/PD/GT/CA23-10/23-24/M/10 for Supply, Installation and Commissioning of State of the art 900 MHz NMR Spectrometer to carry out solid and solution state high-resolution NMR experiments to TIFR Hyderabad.**

Dear Bidders/Vendors,

With reference to above Global tender, the following bidders are participated in the pre bid meeting on 12-03-2024 at 11.00 Hrs

1. M/s. Bruker Optics, Switzerland
2. M/s. Bruker India Scientific Pvt. Ltd.

The above bidders participated through Zoom/at TIFR Hyderabad for the Technical and Commercial details of the above Tender.

Technical and Commercial clarification are as follows:

<b>Refer Page 3 of Annexure –A of tender document</b>	
I. Superconducting Magnet:	
2. Operation field corresponding to a 3H Frequency of at least 900 MHz (21.41 Tesla)	
<u>Clarification Sought:</u> Whether this corresponds to 1H frequency or 3H.	<u>TIFRH Response:</u> This corresponds to a 1H frequency, which would also correspond to a 3H frequency of atleast 900 MHz

<b>Refer Page 4 of Annexure –A of tender document</b>	
II. Console : 10. Z gradient Unit	
<u>Clarification Sought:</u> Since a triple axis-gradient probe is desired, Bruker will quote for a XYZ gradient unit rather than just Z	<u>TIFRH Response:</u> This is acceptable as the specifications will be satisfied with such a unit.
<b>Refer Page 4 of Annexure –A of tender document</b>	
V. Probes:	
3. A magic-angle-spinning probe tunable to 1H, X, Y nuclei (with the following combination of nuclei being possible on the X and the Y channels 13C+15N, 31P+13C, 31P+15N). A spinning speed 65 kHz or more should be possible, and inserts/filters for broad-band operation should be provided. Variable temperature range should be from -50°C to 80°C. Nutation frequencies of at least 170 kHz, 80 kHz, 70 kHz, and 60 kHz on 1H, 31P, 13C, and 15N channels respectively should be possible. Decoupling on 1H of 150 kHz (50ms) should be possible. It should be possible to apply 1 kHz 2H decoupling using a 4th channel or a supplementary coil.	
4. A magic-angle-spinning probe tunable to 1H, X, Y nuclei (with the following combination of nuclei being possible on the X and the Y channels: 13C+15N, 2H+15N, 13C+14N). A spinning speed 65 kHz or more should be possible, and inserts/filters for broad-band operation should be provided. Variable temperature range should be from -50°C to 80°C. Nutation frequencies of at least 170 kHz, 70 kHz, and 60 kHz on 1H, 13C, and 15N channels respectively should be possible. Decoupling on 1H of 170 kHz (50ms) should be possible. It should be possible to apply 1 kHz 2H decoupling using a 4th channel or a supplementary coil.	
<u>Clarification Sought:</u> Whether a quadrupole resonance probe is desired or a separate coil that is dedicated for 2H decoupling	<u>TIFRH Response:</u> A separate coil for 2H decoupling is requested. This coil will not be used for 2H detection, and hence does not need to have high rf homogeneity. If the rest of the specifications are satisfied without a loss in overall probe performance, a quadrupole resonance probe will also satisfy the requirements.
<b>Refer Page 5 of Annexure –A of tender document</b>	
Other requirements for probes	
3. All probes must have the capacity to be shimmed so that the 13C FWHM of a sample of adamantane is < 10 Hz and a full width at 10% height no more than 30 Hz (Probes 1-6).	
<u>Clarification Sought:</u> Linewidths at 10% height are not generally specified for MAS probes.	<u>TIFRH Response:</u> The acceptable limits for the linewidths at 10% height are 30 Hz and raw data for the existing probes can be shared.

<b>Refer Page 6 of Annexure –A of tender document</b>	
VII. Requirements and conditions for Items I, II and III above:	
8. Liquid Helium required for installation and topping off the magnet should be provided by the vendor and should be included in the basic cost of spectrometer	
<u>Clarification Sought:</u> Is Liquid Nitrogen also required	<u>TIFRH Response:</u> All cryogenes, including Liq. He and Liq. N2 should be provided by the vendor
<b>Refer Page 14 of Annexure –A of tender document – Terms and Conditions</b>	
34. Installation Period: The Installation should be completed within three (3) months from the date of receipt of the material at TIFR Hyderabad.	
<u>Clarification Sought:</u> In some unforeseen conditions, for example, a quench of the magnet, additional time will be required to allow for recovery of the system. In such a case the installation period may extend beyond the allotted 3 months' time.	<u>TIFRH Response:</u> Low probability events like this unforeseen conditions which may extend the installation period can be listed out and may be considered on a case-to-case basis.
<b>Refer Page 14 of Annexure –B of tender document – Terms and Conditions</b>	
Audited turnover certificate	
<u>Clarification Sought:</u> M/s. Bruker reports on the financial data is available online as open source. Whether it has to submitted along with the bid	<u>TIFRH Response:</u> Audit turnover certificate is mandatory document which need to be filled as per format available in Annexure- B of tender document duly certified by CA in the letter head duly signed and stamped.

प्रशासनक अवधकारी / ADMINISTRATIVE OFFICER  
(क्रय अनुभाग) / (PURCHASE SECTION)  
टीआईएफआर हैदराबाद / TIFR HYDERABAD