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Date: 26 Jul 2023

CORRIGENDUM TO TENDER

No.: IISER/PUR/0489/VV/CIF/SC/23-24

Sub: Supply, installation and commissioning of 400MHz solution state NMR Spectrometer and accessories: reg

Ref: Tender Enquiry No. 2023_IISRT_760831_1

1. The revised technical specifications as per annexure 1 are added as corrigendum to the above mentioned tender document: -

Thanking You,

Yours Faithfully

Deputy Registrar (P&S)

Annexure 1

Specifications for a 400 MHz NMR Spectrometer

Supply, installation and commissioning of 400 MHz solution state NMR spectrometer

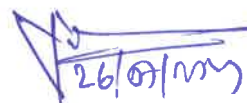
- Magnet:** State of the art 9.4 Tesla actively/ultra-shielded superconducting magnet, standard bore (ca. 5.4 cm), with long hold time, for liquid Helium (> 300 days) and liquid Nitrogen (> 14 days) Dewar (specify in terms of boil off rates. Anti-vibration to damp frequencies above 5 Hz and a drift rate < 8 Hz/Hr. Built-in cryo-shims and room temperature shims. Pneumatic sample load/spin/ejection. Radial stray field (5 G) < 1.0 meters. Liquid Nitrogen and Liquid Helium transfer lines should be provided.
- Include liquid Helium for the initial charging of the magnet. In case of magnet-quench during the installation, the expenses incurred for replacing magnet or its parts and recharging, including the cryogenes, should be borne by the vendor.
- Spectrometer:** State-of-the-art radiofrequency (RF) console with at least two RF channels: Frequency synthesizers, amplifier (amplified power ≥ 150 W (LF) and ≥ 50 W (HF). Transmitter controller, pre-amplifier filter, receivers, ADC's, lock assembly with deuterium lock, digital receiver and RF electronics controlled by acquisition processor, high oversampling rate and digital filters and fast digitizer. Gradient shimming. Accessories for shaped pulses.
- VT:** Variable temperature unit (-100 °C to +150 °C) with computer control and related accessories, using liquid N₂ for low-temperature measurement. Liquid Nitrogen Dewar (25 L capacity more) and rotors for measuring in low temperature should be included.
- Probe:** 5 mm double channel H-X or H-13C probe with Z-axis gradient probe with S/N ratio for ¹H in 0.1% Ethylbenzene of 275 or more and ¹³C in 10% Ethylbenzene of 180 or more with automatic tuning and matching. The probe should have auto-tuning matching capability and should be equipped with Z-axis gradients having the ability to deliver gradient pulses of peak strength of ≥ 30 G/cm capacity. Auto gradient shimming should also be possible.
- Sample Changer:** Computer-controlled automatic sample changer (minimum 24 sample holders) capable of loading samples at the user-level height. Total 50 sample holders (spinners)
- Latest, High speed/memory computers and peripherals, including laser printer with complete preloaded software/data cards for data



- acquisition, processing and analyses, including tools/software for complete automation of data.
8. Three-year complete warranty on all items mentioned above from the date of complete and satisfactory installation of the spectrometer.
 9. Complete standard samples (in sealed 5 mm tubes) for resolution, S/N, and 90° pulse width tests.
 10. **Compressor:** Combustible oil-free compressor, with sufficient capacity and appropriate filters for the supply of dry air for the working of the spectrometer.
 11. Two Liquid N₂ cans of minimum 50-litre capacity
 12. Prices may be quoted item-wise wherever possible.
 13. Complete installation, testing and demonstration of the system and full training on operation and day-to-day maintenance are to be provided at site
 14. Standard tools and essential spares necessary for the operation, servicing or troubleshooting must be supplied.
 15. User list in India to be provided.

Optional add ons

1. 5 mm, high sensitivity broadband two-channel probe with ¹H and ¹⁹F observation and decoupling capabilities with the broadband channel that can be tuned to frequencies from ³¹P to ¹⁵N and with S/N ratio for ¹H in 0.1% Ethylbenzene of 500 or more and ¹³C in 10% Ethylbenzene of 180 or more. The probe should have the auto-tuning matching capability and should be equipped with Z-axis gradients that can deliver gradient pulses of peak strength of ≥ 30 G/cm capacity. Auto gradient shimming should also be possible.



26/07/2023



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