Notice Inviting Quotations for a 400 MHz NMR Spectrometer

Central NMR Facility
IIT Delhi

January 16, 2013

Sealed quotations are invited (technical and commercial bids in separate appropriately labeled sealed envelopes kept in one sealed envelope) for the supply of a NMR spectrometer with the following specifications.

1 Technical Specifications

1. Actively shielded standard bore (50-54 mm), low helium (hold time $>$ 300 days) and nitrogen (hold time $>$ 14 days) superconducting cryomagnet for high resolution NMR at an operational frequency of 400 MHz for ^{1}H, with complete set of cryo and room temperature shims, standard stray field and drift specifications, vibration damping system, cryofluid level monitor(s), helium transfer line and provision for pneumatic sample load/eject/spin.

2. Two RF channels including fast phase setting, amplitude setting, and pulse shaping capability, with linear RF transmitters, not less than 50 W output for ^{19}F/^{1}H and 135 W for other nuclei, and compatible with the NMR probehead.

3. Low noise NMR signal preamplifiers for ^{1}H, ^{19}F and X nuclei, and state-of-the-art receiver with digital quadrature detection, high dynamic range and bandwidth, incorporating digital signal processing capability including high oversampling rates, signal decimation and digital filtering

4. Digital ^{2}H field-frequency lock system with low noise ^{2}H preamplifier

5. Gradient unit (z-), with adjustable gradient amplitude up to $\approx$ 50 G cm^{-1}; provision for rapid automated gradient shimming

6. Tunable broadband NMR probehead (5 mm) with z-gradient (50 G cm^{-1} for PFG and DOSY) and automatic tuning and matching capability, tunable in the range ^{31}P-^{15}N, permitting also ^{19}F observe/^{1}H decouple experiments, provision for ^{2}H lock, variable temperature from approx. 200 to 400 K, and appropriate filters

7. Tunable probehead (5 mm) for ^{1}H 'inverse' detection with automatic tuning and matching capability for ^{31}P to ^{109}Ag, z-gradient (50 G cm^{-1}), ^{2}H lock, variable temperature operation between approx. 200 and 400 K, and appropriate filters.

   The probes should meet standard specifications for (i) line width, (ii) line shape, (iii) sensitivity, (iv) RF in-homogeneity, and (v) 90°pulse width for different nuclei.

8. Variable temperature unit, with operating range between approx. 200 K to 400K, including complete temperature regulation and control system, nitrogen separator for VT gas supply to probe, and liquid nitrogen dewar

9. Autosampler with carousel for at least 50 samples with all required hardware and software for control and automatic data transfer to server. Sample changer, sample spinner for all positions.

10. Acquisition processor system for complete control of spectrometer, with fast timing capability (better than 40 ns), pulse amplitude, phase and shape control, z-gradient control, and digital receiver control

11. Comprehensive software package for spectrometer control, including standard experiment packages, data acquisition with full automation, data display, processing and printout. The package should permit user programming of experiments and should include spin simulation software, as well as software for fitting relaxometry/diffusometery data, and should be compatible with the auto-sampler and auto-archival facility.

12. State-of-the-art PC system (Linux/Windows) with excellent graphics capability, high definition monitor screen, large RAM and large disk storage, with suitable laser printer

13. One additional software license for data processing from a satellite workstation.

14. A UPS providing backup for at least 1 hour. The UPS should be of industry standard with recognised/name brand batteries. The power rating of the UPS should be at least 25% higher than the maximum load for routine spectrometer operation

15. **Imported**, noiseless, oil-free/scroll compressor with catalytic air drier for air supply to the spectrometer for pneumatic sample load/eject and spinning

16. A set of standard samples for 1D and 2D experiment calibrations (observe and decoupler pulse calibration, sensitivity and resolution test for ^{1}H,^{13}C,^{15}N,^{19}F and ^{31}P nuclei, sample for 2D calibration) samples for low temperature and high temperature calibrations. Consumables of 1000 standard 5mm NMR tubes with caps.

17. All required hardware and software documents, manuals installation CDs, DVDs etc for workstation and NMR software. Complete service manuals, documents, CDs, DVDs and on-line support for trouble shooting for the spectrometer

18. Supply of cryofluids for installation

19. Complete system installation and on-site training and demonstration

20. Five year Comprehensive on-site warranty including all parts and labor, free maintenance and service, and regular upgrade of all software during the entire warranty period.

The technical bids should include complete pulse width and power level specifications, as well as sensitivity and resolution specifications on stated standard samples for ^{1}H, ^{13}C, ^{15}N, ^{19}F, and ^{31}P for both probeheads.

2 General Terms and Conditions

Bidder Either the Indian agent on behalf of the Principal/OEM or Principal/OEM itself can bid but both cannot bid simultaneously for the same item/product in the same tender. If an agent submits the bid on behalf of the Principal/OEM, the same agent shall not submit a bid on behalf of another Principal/OEM in the same tender for the same item/product.

Dealership certificate If the bidder is an authorized dealer of any manufacturer, the authorized Indian dealership certificate from the principles should be enclosed. Similarly, proprietary certificate for proprietary items should be provided.

Pricing Please quote prices of imported items at FOB (Freight on Board) IIT Delhi inclusive of all taxes, freight, delivery, installation and onsite training charges. The quotation should provide the total price of the system including all taxes and transportation charges.

Payment Options 100% payment within 30 days after receipt of goods in sound condition through a Letter of Credit.

Discount/rebate The products will be used for educational purposes. Any applicable academic institution discounts should be offered and stated clearly.

Custom Duty Exemption IIT Delhi is exempted from paying custom duty under notification No.51/96 (partially or fully) and necessary "Custom Duty Exemption Certificate" can be issued after providing the following information.

1. Shipping details i.e. Master Airway Bill No. and House Airway No. (if exists)
2. Forwarder details i.e. Name, Contact No., etc.

The Custom Duty Exemption Certificate will be issued to the shipment in the name of the Institute and Bills of Entry should be submitted to IIT Delhi later on.

Excise Duty Exemption IIT Delhi is exempted from paying Excise Duty and necessary Excise Duty Exemption Certificate will be provided for which the quotation with details of the basic price, rate & amount on which ED is applicable.

Warranty Five years comprehensive onsite warranty be provided. AMC price beyond 5 years should be mentioned separately.

Delivery period Please specify the delivery period from the issue of the supply order.

Quotations Quotation should contain separately sealed and appropriately labeled (i) Commercial bid and (ii) Technical bid both in one main sealed cover with the NIQ reference number and due date written on top.

Validity of Quotations The quotations must have validity of at least three months.

Compliance The quotation must have a compliance report, preferably in tabular form, on all the points (1 to 20) listed in the Technical Specifications. Any deviation should be clearly stated in the Table. A detailed specification sheet highlighting all the specifications along with detailed experimental conditions must be attached.

Information Detailed brochures should accompany the offer.

Disclaimer Authority of IIT Delhi reserves the right to reject any or all quotations without assigning any reasons.

Quotation should be sent to Narayanan Kurur, Department of Chemistry, IIT Delhi, 110016 so as to reach before 5 pm Feb. 8, 2013.