Global Tender Notification for the procurement of

"6-Axis High-Precision Force-Torque transducers" at the Department of Chemical Engineering, Indian Institute of Science, Bangalore

Dec 20th, 2023

Dear Sir/Madam,

Subject: 6-Axis High-Precision Force-Torque Transducers for Research Laboratory Usage.

This is a request for global tender quotations for the purchase of an **"6-Axis High-Precision Force-Torque transducers".**

The force-torque transducer will be used to make precision measurements of the stress in granular and particulate materials. The transducer must be capable of measuring one normal force, two tangential forces and 3 orthogonal torques on the sensing surface.

The GOI, MOF office memorandum dated OM No: F.No. 51-03/2023-TS.VII.
Dated 6th December,2023
GTE No: IISc-GTE-2023/317

Terms and conditions for submission of bids

Your quotation should indicate the terms and conditions of the quotation, delivery schedule, entry taxes, customs duty, if any, payment terms, warranty coverage, etc.

The quotations should be submitted in two bid systems, i.e., Technical and Commercial bids.

- The technical bid must include all the details of the instrument's technical specifications and terms and conditions masking only the price component. Bill of materials, brochures, technical datasheets, and other documents may be enclosed to help evaluate the technical bid. The Technical bid should have an item-wise compliance report of all specifications indicated below. Prices quoted should include all taxes, duties, delivery of the items to the site, and installation.

- The commercial bid must include the instrument's price in Indian/Foreign currency CIP/CIF IISc Bangalore basis.

- The period of warranty from the date of receipt should be clearly specified.

- If the goods are found to be defective, they must be replaced/rectified at the cost of the suppliers within 15 days from the date of receipt of written communication from us. If there is any delay in replacement/rectification, the warranty period should be correspondingly extended.

- Conditional tenders will not be accepted.
- The purchaser reserves the right to accept or reject any bid, to annul the bidding process, and to reject all bids at any time before the award of the contract without incurring any liability to the affected bidder or bidders.

Please submit your bid, valid for at least 90 days, along with all the terms and conditions.

The last date to submit your bids is 10th Jan 2024.

Technical Specifications for Miniature High Precision 3-Axis Force and Torque Transducer

- 6-axis semiconductor strain gauge-based force-torque transducer.
- The transducer must be capable of measuring one normal force, two tangential forces and 3 orthogonal torques on the sensing surface.
- The sensing range of the forces must be at least 0 - 17 N for the normal force, 0 - 12 N for the tangential forces and 0 - 0.12 Nm for the torques.
- The transducer must be able to withstand overload of ±250 N in each direction of force and ±1.6 Nm in each direction of torque.
- The resolution must be at least 4 x 10-3 N for the forces and at least 2 x 10-5 Nm for the torques.
- All forces and torques must be simultaneously measurable.
- The transducer must be housed in a monolithic housing of high yield-strength stainless steel. An EDM wire-cut housing is highly preferable.
- The transducer must be temperature compensated for operation in the temperature range 0 - 60∘C.
- The transducer must be calibrated, and the calibration must be traceable to a known national or international standard.
- The size of the transducer must not be greater than 18 mm in diameter and 15 mm in length/height.
- A DAQ interface unit that amplifies, filters noise, and conditions the signals from the transducer so that they can be fed to a DAQ board on a PC must be supplied. It must include all required power supplies and cables.
- A software must be provided to convert the 6 voltages to the individual forces and torques.

Important: Please note that the "6-Axis High-Precision Force-Torque transducers" should match all technical specifications listed above. Submitted technical bids should contain a detailed compliance certificate as per the technical specifications listed in the tender document.

Both the Technical and Commercial bids should be put in separate sealed envelopes and put together in another cover stating **"6-Axis High-Precision Force-Torque transducers"** and should reach us on or before **10th January 2024** at the below address.

The bids should be addressed to:

The Chairman, Department of Chemical Engineering,
Indian Institute of Science, Bangalore 560012, India.
Kind attention: Prof. Prabhu R Nott, Chemical Engineering
Email: chair.ce@iisc.ac.in, prnott@iisc.ac.in