

## INVITATION FOR QUOTATION

ME/TEQIP-II/2015/.....

Dated: 07.12.2015

To

### Sub: Invitation for Quotations for supply of Goods

Dear Sir,

1. You are invited to submit your most competitive quotation for the following goods with item wise detailed specifications given at Annexure I,

Sr. No	Brief Description	Quantity	Delivery Period (In days)	Place of Delivery	Installation Requirement (if any)
01	<b>Journal Bearing Test Rig</b> Details at (Annexure-I)	01 (one)	120 days	Mechanical Engineering Department Guru Jambheshwar University of Science & Technology Hisar (INDIA)-125001	Please see (Annexure-II)

2. Government of India has received a credit from the International Development Association (IDA) towards the cost of the **Technical Education Quality Improvement Programme[TEQIP]-Phase II** Project and intends to apply part of the proceeds of this credit to eligible payments under the contract for which this invitation for quotations is issued.
3. Quotation,
  - 3.1 The contract shall be for the full quantity as described above.
  - 3.2 Corrections, if any, shall be made by crossing out, initialing, dating and re writing.
  - 3.3 All duties and other levies payable by the supplier under the contract shall be included in the unit price.
  - 3.4 Applicable taxes shall be quoted separately for all items.
  - 3.5 The prices quoted by the bidder shall be fixed for the duration of the contract and shall not be subject to adjustment on any account.
  - 3.6 The Prices should be quoted in Indian Rupees only.
4. Each bidder shall submit only one quotation.
5. Quotation shall remain valid for a period not less than **45** days after the last date of quotation submission.
6. Evaluation of Quotations,  
The Purchaser will evaluate and compare the quotations determined to be substantially responsive i.e. which

- 6.1 are properly signed ; and  
6.2 confirm to the terms and conditions, and specifications.
7. The Quotations would be evaluated for all items together.
8. Award of contract:  
The Purchaser will award the contract to the bidder whose quotation has been determined to be substantially responsive and who has offered the lowest evaluated quotation price.
- 8.1 Notwithstanding the above, the Purchaser reserves the right to accept or reject any quotations and to cancel the bidding process and reject all quotations at any time prior to the award of contract.
- 8.2 The bidder whose bid is accepted will be notified of the award of contract by the Purchaser prior to expiration of the quotation validity period. The terms of the accepted offer shall be incorporated in the purchase order.
9. Payment shall be made in Indian Rupees as follows:  
**Delivery and Installation - 0% of total cost**  
**Satisfactory Acceptance - 100% of total cost**
10. All supplied items are under warranty of **12** months from the date of successful acceptance of items.
11. You are requested to provide your offer latest by **3:00 PM** hours on **23.12.2015**.
12. Detailed specifications of the items are at Annexure I.
13. Training Clause (if any) **Yes/No** **YES**
14. Testing/Installation Clause (if any) **Yes/No** **YES**
15. Information brochures/ Product catalogue, if any must be accompanied with the quotation clearly indicating the model quoted for.
16. Sealed quotation to be submitted/ delivered at the address mentioned below,

**Chairman**  
**Mechanical Engineering Department**  
**Guru Jambheshwar University of Science & Technology**  
**Hisar (Haryana)**  
**PIN-125001**

17. We look forward to receiving your quotation and thank you for your interest in this project.

(Authorized Signatory)  
Name & Designation

## ANNEXURE-I

Name of the Item: **Journal Bearing Test Rig**  
Quantity: 01 (one)

### Purpose:

- I. To characterize performance and life of journal bearing under high loads and high speeds.
- II. To measure the pressure, temperature, frictional torque and estimated film thickness of fluid film in circular and non-circular journal bearings

### Technical Specifications:

1. Pneumatic loading: 0.5 kN to 3.0 kN
2. Variable Rotational speed: 6000 rpm (maximum)
3. Shaft Diameter: 100 mm (provision for 75mm to 150 mm shaft dia.)  
with L/D ratio of 0.5 to 2
4. Oil film temperature : Ambient to 200° C
5. Oil flow meter at inlet: 0.2 to 2 L/ minute
6. Accuracy of machine should be  $\pm 1\%$
7. Provision for estimating fluid film thickness using non-contact displacement sensors.
8. Provision for measuring frictional torque.
9. Sliding speed (upper limit): 20,000 mm/sec (minimum)
10. Normal test load (Lower limit): 0.5kN (minimum)
11. Test Rig should be equipped with oil Re-circulation system
12. The machine should be equipped with Digital oil flow meter to measure the oil in circulation
13. The machine should be capable of measuring oil film temperature (ambient to 200 °C) and pressure (ambient to 50 bar) in central plane of the bearing  $[0^{\circ}-360^{\circ}]$  using suitable sensors at least at 12 locations for each temperature and pressure.
14. The mechanism for changing the test bearing should be simple and easy to operate
15. Software to set or measure or both (as applicable) online oil film temperatures, pressures, frictional torque and estimated film thickness as well as load and speed during operation should have following points:
  - Measurements with manually defined parameters or by defining a ‘Standard Operating Procedure’
  - Compatible with latest Windows based operating system.
  - Trend plots to allow plotting any one measured parameter from selected records versus the second parameter.
  - Facility for overlaying several plots with facility to export plots.
  - Results should be exported to word processing packages or spreadsheets using a template or cut and paste.
  - Access to all measured data including correlation functions, fitted data points, residuals and all experimental parameters should be possible. The same might be stored for subsequent examination.
16. For data acquisition, the system should be offered with latest version of branded windows operating system based PC compatible with above software along with laser printer and UPS for computer.

17. The Test Rig should be provided with sample of L/D ratio of 0.5, 1, 1.5 and 2 each of circular and non-circular journal bearings (i.e. total of 08 bearings) made of brass and the demonstration on the same should be given at the time of installation.
18. Results from research papers using the offered test rig should have prominence in the field of tribology. A list of papers from prominent journals shall be submitted
19. Mechanical unit complete with journal (1 nos), its support, drive system radial loading system and frictional torque measuring system.
20. Lubricating oil recirculating system complete with tank, suction line filter, pump, adjustable pressure relief valve and pressure gauge
21. Pressure sensors: 12 no. are used in machine+ 04 spare
22. Temperature sensors: 12 no. are used in machine + 04 spare
23. Frictional force sensor: 01 no.
24. Shaft speed sensor mounted on motor: 1 no
25. Non-contact Displacement sensors for measuring fluid film thickness profile.
26. Amplifiers and signal conditioning electronics
27. Data acquisition system
28. Machine control and data acquisition software – 1 no
29. Test bearing blanks finished in all regards except internal diameter and holes for final finishing by user depending on test requirements (5 each in steel and brass)
30. Operating and maintenance manual in English – 1 no

**Note: The machine should be provided in fully packed condition**

## **ANNEXURE-II**

### **Installation Requirement:**

- The Unloading of machine will be done in the presence of the engineer deputed by supplier at his own cost.
- Installation and commissioning will be done by the supplier at his own cost
- First fill of all oils/ lubricants/coolants will be done by the supplier
- All types of consumables, tools, foundation bolts etc. will be provided by the supplier at the time of installation, commissioning & inspection of the machines.
- Training on machine to be provided by the supplier free of cost at Mechanical Engineering Department, GJUS&T, Hisar

## FORMAT FOR QUOTATION SUBMISSION

(In letterhead of the supplier with seal)

Date: \_\_\_\_\_

To: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Sl. No.	Description of goods (with full Specifications)	Qty.	Unit	Quoted Unit rate in Rs. (Including Ex Factory price, excise duty, packing and forwarding, transportation, insurance, other local costs incidental to delivery and warranty/ guaranty commitments)	Total Price (A)	Sales tax and other taxes payable	
						In %	In figures (B)
<b>Total Cost</b>							

Gross Total Cost (A+B): Rs. \_\_\_\_\_

We agree to supply the above goods in accordance with the technical specifications for a total contract price of Rs. \_\_\_\_\_  
— (Amount in figures) (Rupees \_\_\_\_\_ amount in words) within the period specified in the Invitation for Quotations.

We confirm that the normal commercial warranty/ guarantee of \_\_\_\_\_ months shall apply to the offered items and we also confirm to agree with terms and conditions as mentioned in the Invitation Letter.

We hereby certify that we have taken steps to ensure that no person acting for us or on our behalf will engage in bribery.

Signature of Supplier

Name: \_\_\_\_\_

Address: \_\_\_\_\_

Contact No: \_\_\_\_\_