

Centre for Polymer Science and Engineering

Ref. IITD/CPSE/Feb.

Date: 08-02-2012

Notice Inviting Quotations

Suppliers (OEM)/ manufacturers (OEM) of quality material testing equipments are invited to supply sealed quotations for a “**Servo-hydraulic Universal Testing Machine**” to be used for fatigue/ dynamic testing of biomaterials. The equipment should strictly adhere to the specifications described below. Quotations should include (i) technical and (ii) financial bids separately and be put in separate sealed envelopes and placed together in a sealed outer envelope.

Essential Technical Requirements

a) Load Frame: (i) 10 kN compatible two-column load frame capable of testing in both tensile and compressive modes with fatigue rated actuator (servo-valve assisted) (150mm stroke) allowing through-zero testing (ii) Minimum daylight (crosshead to platen) of 900-950mm to allow the testing of required specimens

b) Load Cell: (i) Fatigue rated load cells of 10kN and 5kN capacity, both shall be calibrated to ISO 7500-1 Class 0.5 Standard at 1% of full scale (ii) Minimum 150% overload capacity and at least 100% sideload capacity without mechanical damage.

c) Control System: (i) Digital control loop with a minimum loop update- 5kHz for synchronized data acquisition (ii) PID terms must be updated at a rate of at least 1kHz, (iii) Controller must have at least one analogue input for an analogue waveform drive signal and at least four assignable analogue outputs. (v) Full reverse-stress dynamic testing capability in tension and compression, (vi) Specimen protection features

d) Hydraulic Powerpack: (i) Compatible hydraulic powerpack to provide high pressure oil at a minimum of 3000psi with a variable displacement pump for improved energy efficiency (electric motor to efficiency class 1), (ii) A PLC power pack/control system for digital display of oil pressure and oil temperature, (iii) Oil cooling system

e) Grips With Jaw Faces: Fatigue Rated Wedge Grips (10kN), Compatible Jaw faces for flat and round samples as per test standards, grip controller (2 grips), and fatigue rated adapters, Compact Tension Grips for 6.5 mm and 13 mm wide specimen in temperature range 0-100°C, COD gauge (10mm), compression accessory that can accommodate a diameter of 50mm, Fatigue Rated 3 Point Bend Fixture, 10 kN (2.2 kip) Dynamic facility

f) Software: (i) Relevant controller software (dynamic, LCF3, multiaxis, fracture mechanics, random loading etc.), data acquisition software, PC with specification compatible to the above mentioned software, Windows 7, software maintenance and training options, (ii) Options to run da/dN, K1C, J1C, CTOD as per ASTM E647, ASTM E399, ASTM E 1290. ASTM E813, and their equivalents (iii) user-friendly dynamic testing software to run user defined test protocols, (iii) options to edit the measured data, data transport in PDF and /or Excel formats.

g) Computer & Printer: To run the above software, latest Windows 7 Computer along with the Laser Printer (automatic double sided).

h) Cooling water system: Should be offered in total job for commissioning in a compatible manner with the system and UPS

i) UPS: Uninterrupted online Power Supply (UPS) of appropriate capacity compatible to controller

Terms and conditions:

- Comprehensive on-site warranty for at least one year from the date of installation
- Prices quoted should be FOB, New Delhi
- 90% Payment through letter of credit (L.C.) and balance 10% subjected to successful installation, commissioning and training.
- If the item is proprietary in nature, a proprietary certificate should be enclosed
- If the bidder is Indian agent, the Agentship certificate should be enclosed.
- All sealed quotations must reach the undersigned, one as Technical and other envelope with Commercial duly enclosed in a single outer envelope
- Bidders must send a list of the users from industry/organizations/academic institutions/universities where identical or similar machine is already supplied for testing of biomaterials.
- All the bidders must enclose “Yes-No” compliance statement against each technical requirement
- Bidders are expected to send at least one certificate from their already existing users confirming their satisfactory remarks

Sealed quotations must reach the undersigned on or before 02-03-2012, latest by 4pm.

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Note: The institute reserves the right to accept (or) reject any/all quotations without assigning reasons thereof.