

**INDUSTRIAL TRIBOLOGY MACHINE DYNAMICS AND MAINTENACE
ENGINEERING CENTRE**

INDIAN INSTITUTE OF TECHNOLOGY, DELHI.

Notice inviting quotations (NIQ)-AirJetErosionTester (AET)

(last date for submission 11 March 2015, 5 PM)

SPECIFICATIONS

It should be designed as per ASTM G 76 standard.

The **AirJetErosionTester** will be mainly used for erosion behaviour of polymers & composites mainly at high temperatures. The erodent may be alumina, silica, zirconia etc. up to size of 150 micron.

Mandatory specifications

1. Impactvelocity of erodent -30to150m/sec (along with accurate calibration system double disc or similar)
2. Erodentfeedrate-1to5g/min (using both nozzles -1.5 mm and 3 mm diameter)
3. Impact angles- 15°, 30°, 45°, 60°, 75°&90°
4. Temperature- Ambientto400°C(Accuracy 1±2%)- Furnace heating must be there since our samples are polymer based and localized heating cannot be accepted. A provision for cryo testing should also be there – Chiller need not to be included.
5. Nozzle diameters – 1.5 mm. (Additional nozzle of 3 mm should also be supplied for related research even if the speed may possibly reduce to 60m/s).
6. Dimensions of analyte material- for 15° (60 mm L X 25 mm B X 4mm T) for other angles (30 mm L X 25 mm B X 4 mm T). Flexibility for accommodating smaller & thinner samples should also be there.

Other requirements

1. Portablekit to calibrateerodentvelocity should be supplied-Double disc method preferred.
2. Facility for samplereplacementunderhightemperaturewithoutstoppingheating should also be provided.

3. Totally dustproof chamber without outlet port for erodent collection should also be provided.
4. IIT will supply suitable air compressor, chiller for cryo-testing and air dryer. So should not be included.
5. Calibration of the system should be possible with standard samples as and when required by the user throughout the life of system. Calibration samples (such as EN 8 & SS 304 – Number-20 each) should be provided
6. Price of consumable materials such as nozzles (1.5 dia- number Number-2 and 3 mm dia -Number 2), calibration samples (such as EN 8 & SS 304 - 20 each), erodent alumina- 20 kgs), thermocouples (number 10) etc. should be shown separately in the commercial quotation.
7. Cryo testing provision may be done by providing pockets in the sample holder for flow of coolant from chiller).
8. Belt conveying system for abrasive particles should be supplied.
9. Pressure gauge should be provided after loop.
10. Hopper should be easily removable.
11. If possible, automatic air valve (air supply should closed automatically when experiment is stopped).
12. On site warranty should be preferably for 2 years & free service for 3 years.
13. Vendor must be ISO 9001:2008 certified.
14. Vendor must have supplied similar machine to any Government sectors, Labs.
15. One or two persons from IIT will inspect functioning of machine at your premises before dispatch. The accommodation should be provided by you. IIT will bear the travelling charges

Terms and Conditions

Terms and Conditions

1. All quoted models must be compatible with Indian power supply: 220 Volts/50Hz for single phase and 440 V/50 Hz for three phase supply.
2. The Technical and commercial quotations must be submitted separately in sealed envelope with a subject (Quotation for **AirJetErosionTester (AET)**) written on that.

Technical bid must contain the following:

- (a) Quotation should be directly from the Original manufacturer or authorized sales agent.
- (b) Sole agency certificate (if applicable) and its validity from Foreign Principals (in case of foreign manufacturer),
- (c) **Proprietary certificate** (if applicable, for any component or instrument quoted).
- (d) Delivery period should be specifically mentioned and should be as small as possible.

- (e) Details on installation, commissioning and training of the equipment must be specified.
- (f) State service support for the equipment in India, specifically in Delhi; give details of service centres with address, telephone numbers and name of service engineers available, response time during warranty and afterwards.
- (g) **Certificate of compliance (with signature) with deviations from specification (if any) must be attached.** Without this, quotation will not be considered.

The Financial Bid must contain the following:

- (a) Prices of the quoted model should be FOB Delhi and include all taxes, delivery, installation and onsite training charges. Please note that IIT Delhi is exempted from central excise and custom duty.
 - (b) The products will be used for educational purposes. Any applicable academic institution discounts should be offered and stated.
 - (c) Guarantee or warranty conditions must be clearly specified; exemptions if any must be clearly stated.
 - (d) Service charges per visit and AMC after warranty period must be specified.
 - (e) Validity of quotation must be till 90 days,
 - (f) Mode of payment is through LC only for foreign purchases (any kind of advance payment clause should be avoided). Name and address of the company on whose name the LC is to be opened should be clearly mentioned.
 - (g) Supplier must submit TIN number/PAN number as applicable.
3. Institute reserves the right to order equipment with better quality over lower price and to accept or reject any or all the quotations without assigning reasons thereof.
4. The Technical Bid and Financial Bid must be sealed in separate envelopes, placed inside an outer cover envelope, and then sealed and submitted by **11 March 2015 5 pm** Indian standard time to the following address:

Attn of:

Prof. JayashreeBijwe

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