Sub: Notice Inviting Quotations for Rheometer

Quotations are invited for the purchase of rheometer to measure dynamic viscosity and shear strength of all liquids including magnetorheological(MR) fluids. Interested suppliers are required to submit sealed quotations (separate technical and financial) as per the specifications given below.

<table>
<thead>
<tr>
<th>Technical Specification of desired Rheometer</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drive motor</td>
<td>synchronous motor / asynchronous motor /brushless dc motor</td>
</tr>
<tr>
<td>Torque range</td>
<td>10nNm to 200mnm</td>
</tr>
<tr>
<td>Torque resolution</td>
<td>better than or equal to 1 nNm</td>
</tr>
<tr>
<td>Support bearing</td>
<td>air bearing</td>
</tr>
<tr>
<td>Speed range</td>
<td>0.0001 to 300 rad/s</td>
</tr>
<tr>
<td>Frequency range</td>
<td>0.0001 to 600 rad/s</td>
</tr>
<tr>
<td>Angular(strain) resolution</td>
<td>10nrad</td>
</tr>
<tr>
<td>Measurement types</td>
<td>rotational , oscillatory &amp; transient</td>
</tr>
<tr>
<td>Oscillatory modes</td>
<td>direct strain amplitude &amp; control stress</td>
</tr>
<tr>
<td>Gap control (standard)</td>
<td>automatic gap compensation</td>
</tr>
<tr>
<td>Connection system</td>
<td>screwless, quick and automatic fitting</td>
</tr>
<tr>
<td>Air compressor</td>
<td>100psi, 5cfm oil free</td>
</tr>
<tr>
<td>Air dryer</td>
<td>multistage membrane type with micro filters</td>
</tr>
<tr>
<td>Temperature controller</td>
<td>circulator ( temperature range : 0 to 100°C , accuracy : 1°C)</td>
</tr>
</tbody>
</table>

Rheology Software

Software features

Software to characterize the rheological parameters such as:

- elastic (g'), loss (g''), complex modulus (g*), tan δ as a function of time, temperature, frequency, strain and stress in shear mode.
- complex viscosity as a function of time, temperature, frequency, strain and stress.
- elastic(e'), loss(e''), complex modulus(e*), tan δ as a function of time, temperature, frequency, strain and stress in linear mode.
- visco-elastic properties in variation to temperature / magnetic - field upto 1 Tesla.
- magneto sweep in linear range.

Compatibility with existing magneto rheological device (MRD)

- The rheometer should be compatible with the magneto rheological device (MRD) available with the department (Refer Fig.1).
- The MRD should be operated/ programmed through the rheometer software for all the rheological analysis.

Magnetic flux density of MRD : 1 Tesla, Temperature range : upto 70 ° C.
Details of MRD cell has been provided in figure 1. Sealed quotations are to be submitted in separate envelopes labeled “technical quotation” and “financial quotation”. Both these quotations should be further enclosed in an outer envelope, which should also be sealed and addressed to

Dr. Harish Hirani  
Room No. 354, Block II,  
Department of Mechanical Engineering,  
Indian Institute of Technology Delhi  
Hauz Khas, New Delhi-110016

Quotations should reach the above office by 5.00 P.M on July 31, 2013. If there is any need of clarifications please contact Mr. Chiranjit Sarkar (M: 09582183980).

Terms and Conditions
• Quote should be valid for at least four months.
• Institute reserve the right to accept or reject without assigning any reason.
• Payment will be made on the basis of an invoice after delivery and satisfactory installation.
• Technical quotations must include the following.
  1. The name of organizations with copy of supply order where the equipment has been supplied in last three years in India.
  2. Address of the technical offices in India with telephone and fax numbers.
  3. The type of device available in India.
  4. Agent ship and Proprietary certificate from the principal if applicable.
• Financial quotations must include the following.
  1. Cost of the equipment in foreign currency if the item is to be imported.
2. Cost should be based on FOB.
3. Comprehensive warranty period.
4. Details of AMC after warranty period.
5. Cost for the installation if it is required.
6. Delivery period after receipt of the purchase order.
7. Quotation must include all taxes.