NOTICE INVITING QUOTATIONS

Date: 17.04.2012

Sub: NIQ for “Fabrication of a computerized instrument for measuring in-plane and vertical wicking of fabrics”

Sealed quotations in separate envelopes of technical and commercial bids, kept in one sealed outer envelope, are invited for “Fabrication of a computerized instrument for measuring in-plane and vertical wicking of fabrics”. Your sealed quotation should reach latest by 5 PM on May 4, 2012 to Dr. Apurba Das, Associate Professor, Department of Textile Technology, Indian Institute of Technology - Delhi, Hauz Khas, New Delhi - 110016. Your quotation should be superscripted “Quotation for instrument to measure in-plane and vertical wicking of fabrics”.

Technical Specifications are as follows:

The equipment shall meet the following requirements:

1) The equipment should broadly include,
   a. Different sensors for measuring in-plane as well as in vertical flow of liquid through the fabrics.
   b. Design and fabrication of mechanical setup, i.e. fabric holding arrangements, parallel plates, constant rate liquid source, etc.
   c. Development of electronic circuit and total setup for the on-line measurement of wicking characteristics, etc.
   d. Data acquisition system including DAQ card, online plotting and software.

2) It shall be possible to test wicking in in-plane as well as in vertical direction.

3) The instrument is based on capacitance method.

4) For measuring the in-plane wicking characteristics, the fabric is placed between two plates with at least eight metal strips on each to form eight parallel plate capacitors.

5) As the liquid flows through the fabric the in-plane wicking characteristics at different directions should be measured by measuring the change in capacitance in real time.
6) Similar principle will be adapted for vertical wicking test, where at least four parallel plate capacitors should be there.

7) Provisions of very precise measurement of liquid flow.

8) The plates are made from Teflon and grooves are made for metal strips.

9) The change in capacitance is calibrated with distance moved by the liquid in the fabric.

10) The capacitance is measured by an oscillator circuit.

11) The output of the oscillator is converted into proportional voltage output by frequency to voltage converter circuit.

12) The voltage output is fed into PC through an ADC.

13) Specially designed user friendly software plots the curve for all the directions.

14) Customized software for complete automatic testing and analysis of results.