

Department of Textile Technology
Indian Institute of Technology, Hauz Khas, New Delhi - 110016

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.