CHAPTER 3

OBJECTIVES OF THE RESEARCH WORK

The aim of this project is to develop a simple and novel device, called Multi probe Vertical Wicking Tester for measuring wicking height in a fabric specimen with respect to time. The instrument is computer-controlled with application software that permits quick determination of wicking as a function of time and to determine the influence of the various fabric parameters such as count, density, weave factor, fabric integrated firmness factor, blend proportion on wicking are to be analysed.

The objectives of the proposed project are to:

(i) Design and fabricate a multi probe vertical wicking tester

(ii) Establish a standard test procedure, and

(iii) Develop a novel system to

- Measure the accurate wicking height with respect to time
- Compare the test results of multi probe vertical wicking Tester with manual testing results.

(iv) Investigate the wicking behaviour of various fabrics by using the new method.

(v) Develop a way for recovery of data for further research.
The advantage of the proposed instrument is the accuracy and ease of data recovery. Further, the proposed computer-aided vertical wicking tester represents a unique system, which will be a very simple, economical and novel device that produces quick and accurate results, very much useful for determining the moisture comfort of textile fabric.

The Computer-aided Vertical Wicking Tester to be designed under the proposed project will find its utility in the following practical instances:

- It will be useful in the quick and easy determination of the wicking height of water in all kinds of textile fabric with respect to time, and this in turn will help apparel manufacturers to have an accurate assessment of the moisture comfort of fabrics.

- Data recovery is possible and useful for further research

- The Vertical Wicking Tester will be highly useful to academic and research organizations in their research activities.

- Thus, the development of a simple and novel computer-aided vertical wicking tester would be of great interest to textile industries, educational institutions and research centres where rapid characterisation of moisture comfort is often sought. It would also be a valuable tool in general to the textile world as a whole for enabling quick decisions regarding sourcing of fabric with specific wicking properties.

- Influence of fabric parameters such as count, density, weave factor, fabric integrated firmness factor, pick density and blend % composition on fabric capillarity has been studied in depth.