

**THE ROLE OF FIBER FINISH ON DRAFTING BEHAVIOUR****W. Oxenham<sup>1</sup>, C. Iype<sup>2</sup>, Y.M. Xu<sup>2</sup>**<sup>1</sup>College of Textiles, N.C. State University, Raleigh, USA<sup>2</sup>School of Textiles, University of Leeds, Leeds, UK**ABSTRACT**

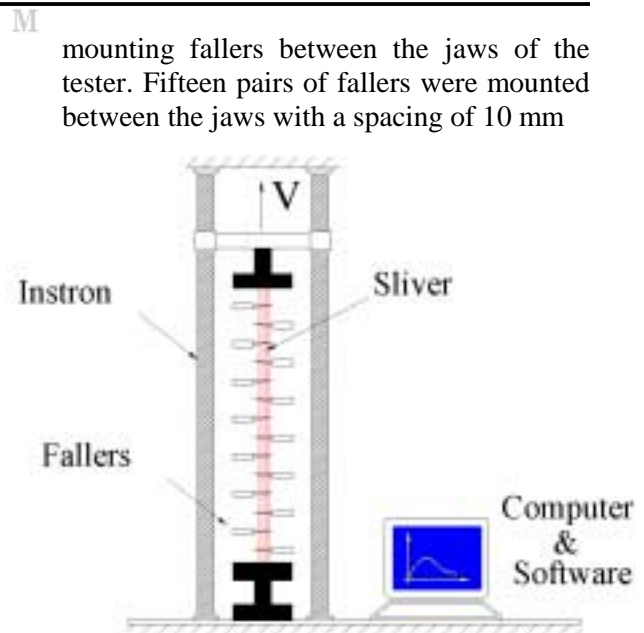
The general behavior of slivers during drawing is simulated by means of a faller device mounted on an Instron Tensile Tester. The load generated during drafting is measured and the shape of load displacement curves is critically analyzed. The differences between lubricated and non-lubricated slivers tested at different speeds are presented, along with an indication of the influence of the number of active fallers. It is shown that the peak drawing force could be used as a possible criterion in judging the effects of lubricants on drafting.

**KEYWORDS:** Drafting Force, Fiber Finish, Pin Drafting, Gillbox**Introduction**

A great deal of work has been carried out in the field of drafting and a number of aspects such as drafting force (1-7), generation of static (8-14) and fiber movement (15-18) have been investigated. The sliding friction between fibers in a sliver during drafting has not however been investigated in detail. The present work is abstracted from a study on the parameters used to select "processing aids" for worsted fibers. The ultimate selection is based on a compromise involving considerations of safety, cost, static suppression and lubricity.

**Experimental**

**Experimental set up.** In order to investigate the behavior of a sliver during drafting a simple experimental set up was developed and a schematic is shown in Figure 1. The device consisted of an Instron Tensile Tester (model 1026), a computer system, and a specially constructed unit for

**Figure 1 – Experimental set-up**

between each faller. The fallers, which had 12 pins per inch, were mounted so that they pivoted at one end to enable placement of the test sliver and to facilitate the possibility of testing with different numbers of fallers