

## **Meeting Biopreparation's Challenges: Research Results and Potential Directions**

*Ian R. Hardin, Susan S. Wilson and Xiaofang Yang  
Department of Textiles, Merchandising and Interiors  
The University of Georgia – Athens, Georgia*

### **Abstract:**

Conventional preparation of cotton fabric for dyeing and finishing typically involves three processes – desizing, scouring and bleaching. The purposes of these processes, respectively, are to remove starch, remove the waxy coating from the cotton fibers along with pectins and proteins in the primary wall of the cotton fiber, and decolorization of the cotton fibers. In addition, a major result that is achieved by the scouring and bleaching is the partial to full removal of seed coat fragments (SCF's) and decolorization of any remaining parts of the fragments. The purpose of this research is to analyze the effects of NaOH treatment on SCF's, and determine the compounds produced by this treatment. The information is used to focus on specific enzymatic treatments for incorporation into a total biopreparation of cotton fabric. The enzymes chosen for evaluation are based on previous studies of the SCF structures and pilot work done on evaluations of a number of enzymes. The results of this work will make an important contribution toward developing a successful total biopreparation regime.