

3D VIRTUAL DRAPING OF APPAREL

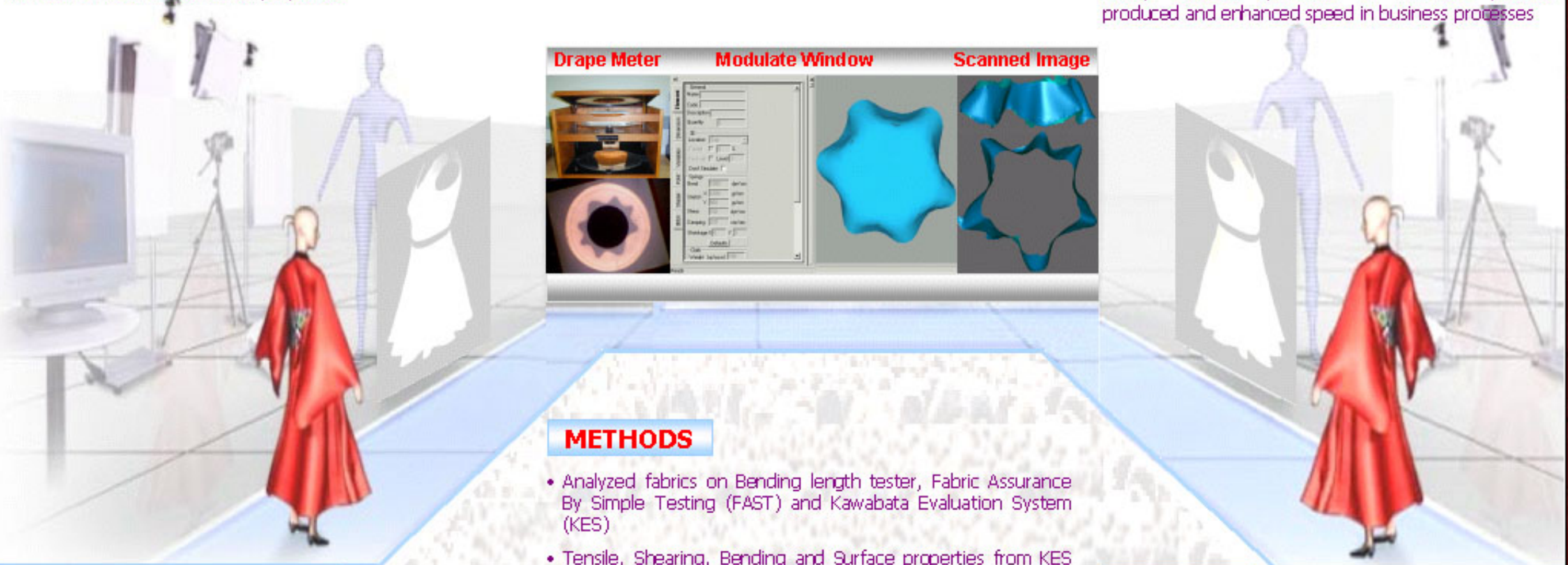
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OBJECTIVE

To develop methods for accurate virtual 3D draping of apparel on a digitized 3D model of the human body considering variations in fabric mechanical properties

INDUSTRY RELEVANCE

Effective use of 3D Virtual Drape technology would result in improved products, higher product success rates, reduced quantities of incorrect product produced and enhanced speed in business processes



RESEARCH APPROACH



Figure 1: Research Approach

METHODS

- Analyzed fabrics on Bending length tester, Fabric Assurance By Simple Testing (FAST) and Kawabata Evaluation System (KES)
- Tensile, Shearing, Bending and Surface properties from KES effects drape of fabrics and are used in the modulate simulation
- The evaluation component is to use fabric images from Drape meter, Modulate software and 3D scanning to devise metrics by measuring and comparing the accuracy of simulated drapes
- Intend to build metrics on existing virtual 3D draping software by providing capability for actual fabric representation

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RESULTS

- Optimum method for measuring fabric properties by studying results from KES, FAST and Physical method is identified
- Evaluating the sensitivity of drape with respect to fabric properties in a virtual environment
- Metrics has been determined for evaluating accuracy of 3D virtual drape simulations for simple forms

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- To represent fabric mechanics in 3D virtual draped apparel products fit to a digitized form
- Fabric drape is evaluated on simple form (Figure 1) and later the research will proceed to garment stage