

MODERN LEARNING ENVIRONMENT FOR THE TEXTILE AND CLOTHING STUDENTS AT ITM, TU DRESDEN

Saeed HASSAN, Dr. - Ing.

Technische Universität Dresden, Faculty of Mechanical Engineering, Chair of Assembly Technology for Textile Products, Hohe Str. 06, Dresden, Germany e-mail: hassan.saeed@tu-dresden.de

Technische Universit?t Dresden (TU Dresden) dates back to 1828 when the 'Saxon Technical School' was established in Dresden, and is one of the eleven German Universities distinguished as an "Excellence University". The Institute of Textile Machinery and High Performance Materials Technology (ITM) at TU Dresden is one of the leading educational and research institutes in the world focusing mainly on the world's leading textile machinery manufacturers in Germany and the processing of textile high performance materials for technical applications.

Technical Textiles are ubiquitous, and Germany is the global leader for their production. Engineers working in the textile industries not only design fashionable textiles for clothes brands, but high-tech products with a focus on functionality. Their work is often invisible, but all the more important from a technical perspective. The applications are diverse, ranging from fiber composite materials and medical textiles to textile architecture and membrane constructions. Textile machines manufacturing functional and high performance textiles are high-tech mechatronic devices, able to control large set of process parameters and to perform complex programmed sequences. Their scale may vary, such as for micro machines for assembling of medical devices to very large, several dozens of meters machines for producing textiles for architecture, agriculture and other applications. In large scale manufacturing, different process stages are connected in series for seamless process flow.

Therefore, another important aspect of the work at ITM is to provide industry-related education programs. The main teaching task of the ITM is the preparation of the future specialists for the textile and clothing industry, covering all levels - traditional in Germany Dipl.-Ing, Masters, and doctorate studies. The ITM provides excellent facilities for performing the fundamental research as well as research projects with industrial partners. The interdisciplinary collaboration with national and international versatile research institutes as well as industrial partners helps to transfer the research results into applied outcomes. ITM provides its student excellent opportunity for training and education in an unmatched interdisciplinary study environment, with possibilities to specialize in mechanical engineering, assembly technology, material modelling, smart textiles, sports and functional textiles, protective clothing, lightweight construction, measuring and sensing technology, machine development or bio-medical technology and many more. There are nearly 100 research associates working in ITM in various research on pure fundamental research as well as on industry driven applied projects.

For students with an undergraduate degree, the ITM offers a four-semester graduate Master program in Textile and Clothing Technology. Students with their bachelors or higher degrees in textile engineering, mechanical engineering, chemical engineering or industrial engineering are eligible for this study. Successful participants are awarded a Master of Science degree. The interdisciplinary study opportunities for students from other disciplines of TU Dresden as well as other universities within the framework of general studies, special lectures, seminars, assignments, graduate or master thesis, as well as exchange of students on ERASMUS + or E-team programs are also carried out. Fully funded scholarships are offered by the German Academic Exchange Service (DAAD) for the applicants from



developing countries for the study in the Master course Textile and Ready-made Clothing Technology at ITM.

This paper will give an overview of the modern teaching methods with application of CAD systems, modern e-learning platforms and practical use of the textile and sewing machines, applied during the master course.

Keywords: TU Dresden, ITM, Textile and Clothing, study, research

UDC377