

haviour was realised with shell elements. Furthermore basic knowledge is gained about the material behaviour of gradient-fabric structures. The transition zone between different weave types should be integrated in the simulation model in further research. The aim is to characterise the material of the transition zone, since its characteristics cannot be measured using standard textile test methods. In order to characterise and determine the drapability of the transition zone between the different weaves, there is a high demand for research with respect to measuring and simulation techniques. If an extensive explanation of the material behaviour of fabrics with gradient-drapability characterisations is successful, it would be a major step in creating a basis for engineering constructions with complex shaped component geometries in the field of textile-reinforced composites. As a result, an innovative component-adjusted textile structure with predictable characteristics would be available on the market.



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Lodz University of Technology Faculty of Material Technologies and Textile Design

Department of Clothing Technology and Textronics

The Department was established in 2009, combining the departments of Clothing Technology and Automation of Textile Processes.

The Department offers research and cooperation within the following fields:

- physical and biophysical properties of clothing (modelling the microclimate under clothing packages)
- creating a basis for engineering fashion design (e.g. actions to improve design processes)
- unconventional structures of clothing with regard to use and manufacturing
- analysis of the operating conditions of machines for clothing production (e.g. optimisation of the gluing parameters process working conditions of sewing threads)
- creating analysis and design processes for the industrial production of garments
- basic problems of general and technical metrology
- instrumentation of measurements, the construction of unique measurement device and system
- measurement and control computer systems, including virtual instruments of the fourth generation
- textronics as synergetic connecting textile technologies with advanced electronic systems and computer science applied in metrology and automatics
- identification of textile and clothing objects with the use of advanced microprocessor measurement techniques
- modelling of objects and their computer simulation, methods of experimental research, especially experiment design of experiments and computer analysis of results

The Department is active in the following educational and scientific fields: textile engineering, pattern design, education of technology and information engineering, materials engineering, health and safety at work, and logistics.

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