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## Technical University of Lodz Faculty of Material Technologies and Textile Design

### Department of Material and Commodity Sciences and Textile Metrology

**Activity profile:** The Department conducts scientific research and educational activities in a wide range of fields:

- Material science and textile metrology
- Structure and technology of nonwovens
- Structure and technology of yarns
- The physics of fibres
- Surface engineering of polymer materials
- Product innovations
- Commodity science and textile marketing

**Fields of cooperation:** innovative technologies for producing nonwovens, yarns and films, including nanotechnologies, composites, biomaterials and personal protection products, including sensory textronic systems, humanoecology, biodegradable textiles, analysis of product innovation markets, including aspects concerning corporate social responsibility (CSR), intellectual capital, and electronic commerce.

**Research offer:** A wide range of research services is provided for the needs of analyses, expert reports, seeking innovative solutions and products, as well as consultation on the following areas: textile metrology, the physics of fibres, nonwovens, fibrous composites, the structure and technology of yarns, marketing strategies and market research. A high quality of the services provided is guaranteed by gathering a team of specialists in the fields mentioned, as well as by the wide range of research laboratories equipped with modern, high-tech, and often unique research equipment. Special attention should be paid to the unique, on a European scale, laboratory, which is able to research the biophysical properties of textile products, ranging from medtextiles and to clothing, especially items of special use and personal protection equipment. The laboratory is equipped with normalised measurement stations for estimating the physiological comfort generated by textiles: a model of skin and a moving thermal manikin with the options of 'sweating' and 'breathing'. Moreover, the laboratory also has two systems for estimating sensory comfort – the Kawabata Evaluation System (KES) and FAST.

**Educational profile:** Educational activity is directed by educating engineers, technologists, production managers, specialists in creating innovative textile products and introducing them to the market, specialists in quality control and estimation, as well as specialists in procurement and marketing. The graduates of our specialisations find employment in many textile and clothing companies in Poland and abroad. The interdisciplinary character of the Department allows to gain an extraordinarily comprehensive education, necessary for the following:

- Independent management of a business;
- Working in the public sector, for example in departments of control and government administration, departments of self-government administration, non-government institutions and customs services;
- Professional development in R&D units, scientific centres and laboratories.

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