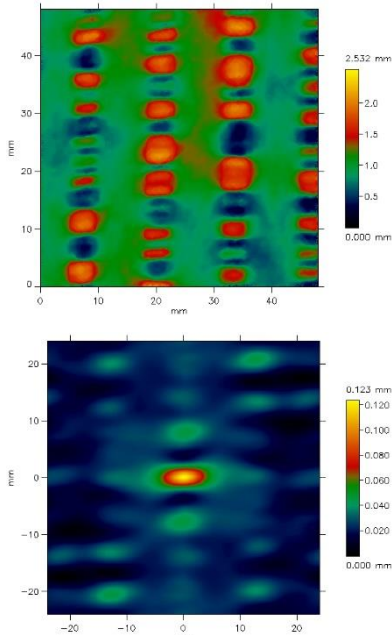




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<p>name of the unit:</p> <p style="text-align: center;">DIVISION OF CLOTHING TECHNOLOGY AND TEXTRONICS</p> <p style="text-align: center;">Institute of Architecture of Textiles, Lodz University of Technology</p>		<p>symbol:</p> <p style="text-align: center;">I-41</p> <p style="text-align: center;">http://www.iat.p.lodz.pl</p>
<p>head of the unit:</p> <p style="text-align: center;">Assoc. Prof. Zbigniew Stempień PhD, DSc.</p>	<p>potential promoters:</p> <p style="text-align: center;">Prof. Małgorzata Matusiak, PhD, DSc.</p>	<p>contact person:</p> <p style="text-align: center;">Prof. Małgorzata Matusiak, PhD, DSc. tel.: 42-631-33-12 malgorzata.matusiak@p.lodz.pl</p>
<p>scope of activities:</p> <p>The main areas of interest and research directions are the following issues falling within the general concept of Textile Materials Engineering:</p> <ul style="list-style-type: none">• designing the textile materials with given thermo-insulating properties influencing the thermo-physiological comfort of clothing usage,• comprehensive characteristics of the geometrical structure of the textile surfaces,• analysis and modelling of the relationship between the geometric structure of surface of textile materials and their thermal insulation properties,• analysis of the transport of liquid moisture in textiles.		<p>graphic material</p> 
<p>present activities:</p> <p>Non-contact measurements of surface of textile materials with the use of a profilometer. Comprehensive analysis of the geometric structure of surface of 2D and 3D textile materials. Research on seersucker woven fabrics and other fabrics with relief in terms of the geometric structure of their surface. Analysis of the possibility of quantifying the waffle effect. Analysis of the possibility of predicting the thermal-insulating and mechanical properties of the seersucker woven fabrics based on the structural parameters and surface topography of the fabrics. Analysis of the transport of liquid moisture in woven and knitted fabrics. Influence of the compactness of the structure of textile materials on the of liquid moisture transport.</p>		
<p>Future activities:</p> <p>The connection of the geometric structure of seersucker woven fabrics with selected barrier properties of these fabrics. Analysis of the influence of the degree of stretching on the ability to transport a liquid moisture through the fabrics.</p>		
<p>publikacje/patenty/nagrody/granty:</p> <p>Matusiak M., Seersucker woven fabrics. Biophysical properties (Tkaniny gofrowane. Właściwości biofizyczne, in Polish), Editorial Office of Lodz University of Technology, Lodz 2020, ISBN 978-83-66287-47-1 Matusiak M., Evaluation of the Bending Stiffness of Seersucker Woven Fabrics. <i>Fibres & Textiles in Eastern Europe</i> 2021; 29, 2(146): 30-35. Matusiak M., Moisture Management Properties of seersucker woven fabrics of different structure, , <i>Fibres & Textiles in Eastern Europe</i>, 2019, vol. 27, No. 3, pp. 43-50, Frączzak Ł., Matusiak M., Influence of The Structure of Seersucker Woven Fabrics on their Friction Properties, <i>Autex Research Journal</i> 2021, 21, 1:85-91 Kosiuk G, Matusiak M., Analysis of the Heat Resistance of Multilayer Clothing Packages. <i>Fibres & Textiles in Eastern Europe</i> 2021; 29, 2(146): 95-99.</p>		



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[Project finalized:](#)

Research project: „ Geometric, mechanical and biophysical parameterization of three-dimensional woven structures”, project No.: 2016/23/B/ST8/02041, Agreement Np.: UMO-2016/23/B/ST8/02041, in the frame of „OPUS 12” call.

[Keywords:](#)

thermal resistance, thermal absorptivity, water-vapour resistance, relative water-vapour permeability, liquid moisture transport, geometric structure of surface, roughness, waviness, fractal dimension, modelling, Moisture Management Tester, MicroSpy Profile, Alambeta, Permetest

[List of intenship proposal in this research team:](#)

Participation in the measurements of the liquid moisture transport in textile materials in the relaxed state and at various degrees of stretching.