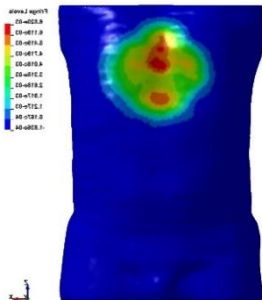
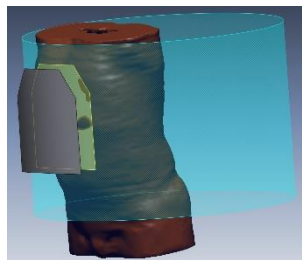
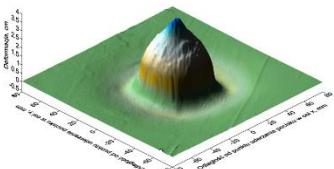




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<p>name of the unit:</p> <p style="text-align: center;">DIVISION OF CLOTHING & TEXTRONICS</p> <p style="text-align: center;">Institute of Textile Architecture, Lodz University of Technology</p>		<p>symbol:</p> <p style="text-align: center;">I-41</p> <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. PhD Zbigniew Stempień</p>	<p>potential promoters:</p> <p style="text-align: center;">Assoc. Prof. PhD Zbigniew Stempień</p>	<p>contact person:</p> <p style="text-align: center;">Asst. Prof. Justyna Pinkos tel: 42-631-33-50 justyna.pinkos@p.lodz.pl</p>
<p>scope of activities:</p> <ul style="list-style-type: none"> • Research and development of textile based ballistic shields, • Numerical modelling of the phenomenon of bullet impacting into textile ballistic shields by using the LS-Dyna software, • Analysis of the behind armour blunt trauma (BABT) during a bullet impact, • Numerical modelling of the phenomenon of bullet impacting into ballistic package put on the human body 		
<p>present activities:</p> <ul style="list-style-type: none"> • We fabricate an embroidered structures as layers of textile ballistic packages. We study their ballistic properties during bullet hitting. We numerically model the impact of a projectile into ballistic packages containing embroidered structures. • We model numerically the hitting of a bullet into ballistic packages made of multi-axial fabrics. We compare the behind armour blunt trauma after hitting a bullet into ballistic packet made of biaxial and triaxial fabrics. 		 
<p>Future activities:</p> <p>Research and development of 3D printed supercapacitors</p>		
<p>Publications/patents, awards, projects:</p> <ul style="list-style-type: none"> • Dominiak, J. & Stempień, Z. Modelowanie numeryczne uderzenia pocisku w ciało człowieka chronione kamizelką kuloodporną. <i>Mechanik</i> 585--590 (2013). Available at: https://www.infona.pl/resource/bwmeta1.element.baztech-6321bd33-9df5-4aca-8820-53721bf11070. (Accessed: 21st March 2022) • Dominiak, J. & Stempień, Z. Modelowanie numeryczne i analiza kuloodporności wielowarstwowych pakietów wykonanych z włókien paraaramidowych. <i>Probl. Mechatronics. Armament, Aviat. Saf. Eng.</i> 7, 43–60 (2016). • Pinkos, J. & Stempień, Z. Numerical and Experimental Comparative Analysis of Ballistic Performance of Packages Made of Biaxial and Triaxial Kevlar 29 Fabrics. <i>Autex Res. J.</i> 20, 203–219 (2020). 		



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Realized research grants:

- Development of the technology of one-stage forming of hybrid ballistic plates with significantly increased aspects of safety of use. The project with the acronym STEP was implemented on the basis of the agreement no. POIR.04.01.02-00-0028/17-00 and was co-financed from European Funds.

Keywords:

textile ballistic shields, woven structures, embroidered structures, multi-axial structures

List of internship proposal in this research team:

Numerical modeling of the phenomenon of a bullet hitting a textile ballistic package using the LS-Dyna software