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Zinck-unvowen fabric composite obtained by magnetron sputtering.Maciej Jaroszewski¹, Jan Ziaja¹¹Wroclaw University of Technology, Wroclaw, Poland

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The properties of zinck- wovens composites are reported.

Technology of deposition of metal layers on different types of wovens has been of strong interest lately. Especially interesting is use of thin metal layers to shield the electromagnetic fields and biological filtering. Our research showed that electromagnetic field screening factor strongly depends on the morphology of the surface. Wovens (i.e made of polypropylene) have extremely developed specific surface and deposited metal layers will have it as well, what highly improve screening or filtering properties.

Some polymeric fibres are very difficult for metallization. The only possibility for metallization of those materials is plasma activation of the surface followed by deposition of a metal layer by vacuum evaporation. Magnetron sputtering method consist of the two stages. Metallization process of fabrics was carried out by sputtering of metallic targets with the Zn target (99,99%), fitted on magnetron gun of WMK-100 TYPE. In standard systems, the power dissipated in target is controlled by the level of current supplying magnetron. In our case the magnetron was pulse supplied and the power was adjusted by the pulse width in the range of 10-0.2 ms. Obtained metallic layers were characterized by good adhesion to PP and shielding effectiveness (SE) over 50 dB.

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Keywords

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