

Basic differences in the EM shielding effectiveness between the two types of coatings (CuSn, CuZnNi) result from their material composition. Other properties of the shielding materials presented in this article will be the subject of further publications.

Conclusions

On the basis of the morphology and crystalline structure studies performed for CuSn and CuZnNi metallic layers deposited onto a PP nonwoven substrate, it was found that:

- there are no large areas of delamination of the coatings deposited that might suggest good adhesion of all metallic layers to the substrate,
- the samples with metallic layers for which the process parameters applied were favorable for the nucleation and growth of the crystalline phase (CuSn/PP-1, CuSn/PP-2, CuZnNi/PP-1) exhibit better shielding properties than the other samples,
- metallic layers CuZnNi/PP-1 and CuZnNi/PP-2 are marked by numerous cracks and point defects. This damage would not have a significant impact on the continuity of the layers' structure, and thus on their conductivity. However, for much larger areas than those observed under a microscope, the presence of such defects (together with the impact of individual layer components) results in lower EM SE values than those obtained for samples with CuSn layers.
- The studies conducted justify the differences in EM SE values obtained for the barrier materials developed and may be helpful in verification of the parameters used during the magnetron sputtering processes.



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