

METAL/CARBON HYBRID FABRIC FOR OUTDOOR EMI SHIELDING

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Abstract: The rapid development of smart devices has significantly broadened the application of electronic devices, corresponding to the efficient electromagnetic interference (EMI) shielding materials also need to improve the ability to adapt to the environment. This study introduces an efficient EMI shielding material suitable for various outdoor conditions. A laminated hybrid fabric was prepared using a simple one-step method, combining carbon felt with metallic textile. The EMI shielding effectiveness and wettability of the samples were tested. Results indicated that the hybrid fabric exhibited outstanding shielding performance by incorporating EMI shielding characteristics of both carbon and metallic materials. Furthermore, the material effectively absorbed EM waves, reducing secondary pollution. Wettability tests revealed that the hybrid fabric maintained good hydrophobicity even after different treatments, ensuring its applicability in diverse outdoor environments.

Keywords: EMI shielding, Hydrophobic, Carbon felt, Metallic fabric.

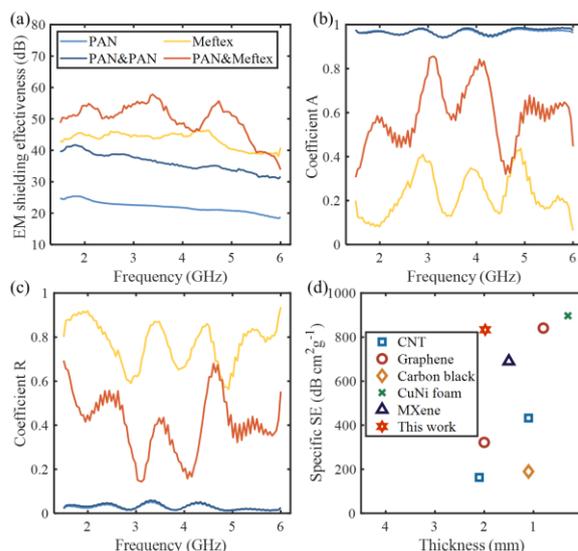


Figure 1 EMI shielding effectiveness of single component fabrics and hybrid fabrics. (a) Total EMI shielding, (b) power coefficient A, (c) power coefficient R, and (d) Comparison of the specific SE as a function of the thickness.

ACKNOWLEDGEMENT: This work was supported by the project of the ministry of education, youth and sports of the czech republic and the european structural and investment funds – hybrid materials for hierarchical structures (hyhi, reg. no. cz.02.1.01/0.0/0.0/16_019/0000843).