Graphene based polymer nanocomposites – selected properties

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Abstract
Nowadays, the human being are inseparably connected with widely understood electronic. All electronic devices, on the other hand, produce electromagnetic signal and next interfere with coexisting tools. The electromagnetic interference could be destructive for operating devices, therefore an essential issue is to find the effective shield against these phenomena [1]. As a such shield, the graphene and derivative in polymer matrixes could be used. Here, we present the influence of graphene and graphite addition into ABS matrixes on the electromagnetic interference. Different flakes sizes of graphene had been included and as well as different nanofillers loading. Additionally, the Young modulus had been extracted for PE based nanocomposites.
The results show, the addition of graphene of larger particle sizes gives the most promising EMI shielding parameters. On the other hand, addition of graphene into PE matrix significantly lower the susceptibility to breaking and influence the Young modulus. Ten percent graphene supplement increases the Young modulus of about 40%.
The results presented here shed the light into new types of nanocomposites and their properties. These initial studies could be further develop and applicate in many industries such as telecommunication, airborne, space, military, etc [2],[3].

References

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