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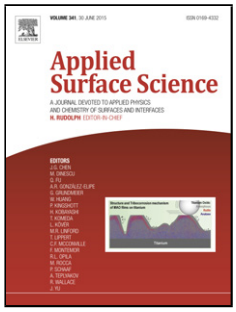

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Treatment of poly(ethylene terephthalate) foils by atmospheric pressure air dielectric barrier discharge and its influence on cell growth

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Abstract

In this contribution an effect of dielectric barrier discharge (DBD) sustained in air at atmospheric pressure on surface properties of poly(ethylene terephthalate) (PET) foils is studied. It is found that exposure of PET to DBD plasma leads to rapid changes of surface chemical composition, wettability, surface morphology as well as mechanical properties of PET surface. In addition, based on biological tests that were performed using two cell types (Saos-2 human osteoblast-like cells and HUVEC human umbilical vein endothelial cells), it may be concluded that DBD plasma treatment positively influences cell growth on PET. This effect was found to be connected predominantly with increased surface energy and oxygen content of the surface of treated PET foils.

Keywords:

Plasma treatment; polymers; DBD plasma; surface modification; cells growth

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