

Characteristics of PET-Based Conductive Fiber

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Abstract : Conductive fiber is the key material for e-textiles and wearable devices. However, the durability of the conductive fiber after the wash process is an important issue for conductive fiber applications in e-textiles. Therefore, it is necessary for conductive fiber with good performance on electrically conductive behavior during the product life cycle. In this research, the PET-based conductive fiber was prepared by silver conductive ink continuous coating. The conductive fiber showed low fiber resistance ($10^{-1} \sim 10 \Omega/\text{cm}$), and the conductive behavior still had good performance (fiber resistance: $10^{-1} \sim 10 \Omega/\text{cm}$ percentage of fiber resistance change: $< 60\%$) after the water wash durability test (AATCC-135 30 times). This research provides a better solution to resolve the issues of resistance increase after the water wash process due to the damage to the conductive fiber structure.

Keywords : PET, conductive fiber, e-textiles, wearable devices

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