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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 $(10^{-1}\sim10\Omega/\text{cm})$, and the conductive behavior still had good performance (fiber resistance: $10^{-1}\sim10\Omega/\text{cm}$) percentage of fiber resistance change:<60%) after the water wash durability test (AATCC-135 \square 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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