

Fabrication of continuous metal nanofibers with electrospinning and electroless plating

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Abstract

With the development of wearable devices, the most remarkable technology is the development of conductive fibers with elasticity and flexibility. Most stretchable electrode researches mainly use materials with excellent stretchability, such as conductive polymers, or metal nanowires because of the limitation of the elasticity of the metal. However, this has problems due to the limit of electrical conductivity and the random connection of short length metal nanowires[1].

Therefore, in this study, we have studied the fabrication technology of continuous metal nanofibers for transparent electrodes and electronic fibers applicable to wearable devices. Continuous metal nanofibers are fabricated using electrospinning and electroless plating. Continuous polymer fibers containing Pd salt are prepared by electrospinning, and then copper is coated on the surface of the nanofibers using electroless plating. Figure 1 is a SEM image of the fabricated metal nanofibers. The fabricated nanofiber has a thickness of about 500 nm, and copper is well coated on the surface.

References

- [1] Tae Cheng, Yizhou Zhang, Wen-Yong Lai, Wei Huang, *Advanced Materials*, 27(2015), 3349

Figures

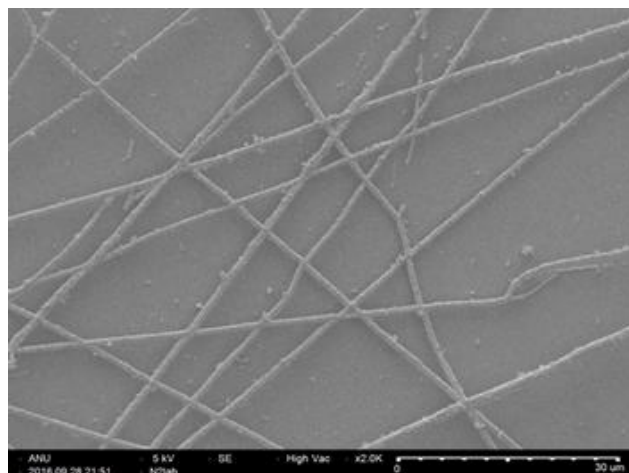


Figure 1: SEM images of continuous Cu nanofibers