

## ABSTRACT SUBMISSION



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### **1D, 2D and 3D Electroactive Nanofiber-based Materials for Wearable Energy Storage**

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#### **ABSTRACT (NO MORE THAN 500 WORDS:)**

The predicted boom in flexible and wearable electronics will require these devices to be powered by new kind of flexible energy systems with higher energy and power density. Conducting polymers and carbon-based materials are some of the spotted materials. Via nanoscale electro-fabrication of these materials, novel nanomaterials with high surface area, various working domains (1D, 2D and 3D-nanoachitectures), porous structures and fine flexibility can be realized. Herein, we provide a strategy to obtain 1D, 2D and 3D morphologies originating nanofibers for wearable energy storage applications: the 2D electrospun nanofibers membrane were produced via electrospinning. To fabricate the 3D hetero-nanosponges, electrospinning and electrospraying nozzles were varied at different spacing. The 1D nanofibers coated yarns (NCY) were further obtained via a templated modified electrospinning technique. The resultant materials showed efficient electron conductivity, pliability and flexibility fitting for next-generation wearable power supply to miniature electronics.