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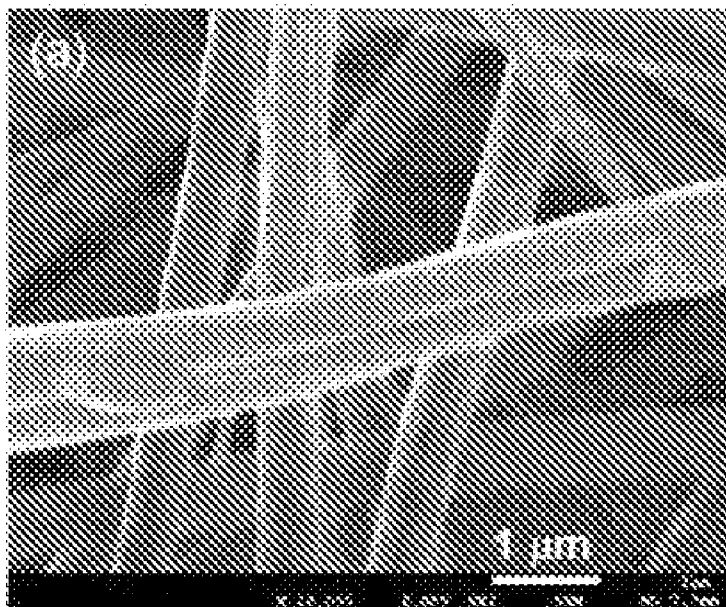
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[Continued on next page]

(54) Title: ELECTROSPUN CONDUCTIVE CARBON FIBERS



(57) **Abstract:** A conductive carbonaceous fiber is provided, comprising a carbonaceous material obtained from carbonizing an electrospun fiber wherein said fiber comprises at least one conductive metal precursor. The electrospun fibers can be formed into fibrous mats during spinning, stabilization and carbonization that are conductive materials which can be used to make stretchable conductors for flexible electronic devices. The invention relates also to the process for making the fibers, corresponding elastomeric fibrous mesh/polymer composites as well as use of these composites for making stretchable electrical conductors. The obtainable elastomeric composite films (with a thickness in the range of 0.8 to 1.5 mm) exhibit good electrical conductivity and excellent electromechanical stability under mechanical deformations (e.g. elongating, twisting and bending). The scalable fabrication process and low-cost precursors make the elastic electrospun carbon fibers / polymer composite conductors promising materials for applications in flexible electronic devices, displays, sensors, wearable conducting clothes, implantable medical devices, etc.



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