

FREE-STANDING POROUS CARBON FIBROUS MATS AND APPLICATIONS
THEREOF

ABSTRACT

5

Disclosed herein is a method of producing a porous carbon composite fibrous mats formed of a network of carbon fibers incorporated with porous carbon particles. The method includes electrospinning a polymer solution to form a porous layer of polymeric fibers and the polymeric fibers are doped with a precursor of conductive metal particles, wherein the polymer solution includes a polymer and the precursor of the conductive metal particles, electrospaying a metal organic framework suspension onto the porous layer of polymeric fibers, wherein the metal organic framework suspension includes metal organic framework particles, repeating the electrospinning and electrospaying in an alternating manner to form a porous network of polymeric fibers incorporated with the metal organic framework particles, and heating the porous network of polymeric fibers incorporated with the metal organic framework particles to form the porous carbon composite fibrous mats. The porous carbon composite fibrous mats and its applications thereof are also disclosed herein.

20

No suitable figure to be published with abstract