

Application of TEMPO-oxidized cellulose for conductive fiber

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Electrically conductive fibers play very important roles in realization of wearable technology due to their high flexibility and its various applications. In recent years, researches on the production of conductive fibers by various methods have been actively conducted. Particularly, various researches have been carried out to coat polymers on the fiber and to attach silver particles on polymer. However, when the polymer is coated on the fiber, there is a problem in that the electrical conductivity of the fiber is decreased because the silver particles and the polymer are separated by repeated bending. In order to solve these problems, we researched TEMPO-oxidation method and attaching silver nanoparticles directly to oxidized cellulose to fabricate conductive fiber. The conductive fibers produced by TEMPO-oxidation exhibit constant electrical conductivity and have mechanical stability even under repeated bending.