



## FUNCTIONAL PROPERTIES OF ELECTROSPUN NANOFIBER

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Nanofiber provided by an electrospinning is nonwoven fabric geometry, the field that it is easy to use most is a filter. It has already been known that the removal efficiency of the carbon particle in oil rises by coating the surface of the oil filter for the truck and the bus by the nanofiber. On the other hand, it just started about the research and development to the water treatment though there was a mask for anti-virus that used the nanofiber etc. too. The water filtration performance with the nanofiber and the rare metal recovery in the waste water are described. Filtration efficiency worsens most at 245 nm and the diameter of fiber becomes still thicker in the diameter of fiber, the filtration performance is improved. If the diameter of fiber generally becomes thick from 200 nm to 250 nm, since the crevice between fiber becomes large, filtration performance will fall. However, although 300 nm is an average and thick fiber also exists, very thin fiber also exists and it serves as a wooden trunk and a relation like a branch. Therefore, thick fiber holds the whole nanofiber and thin fiber contributes to the filtration function. It is guessed that it works at the direction where a fiber diameter not homogeneous like this is good. Peptide copolymer (PCo) is a block copolymer that has the polylysine in the intramolecular, and it is reported to show the gold ion a high selective adsorption. PCo are polylactic acid and a block copolymer of polylysine, and are developed for the purpose of the surface treatment of polylactic acid. Fiber diameter decreases greatly by adding PCo to the PLA nanofiber. PLA nanofiber carries out uptake only of the golden ion, and PCo nanofiber carries out uptake of the particles of a golden ion and gold. It is thought that because PCo reduced the gold ion to the gold nanoparticle this cause.