

## Titanium oxide nanofiber by combined sol-gel and electrospinning system

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A inorganic-organic mixed nanofibers were prepared by sol-gel processing and electrospinning techniques using titanium isopropoxide(TiP)/polyvinylpyrrolidone(PVP). The nanofibers were characterized by field emission scanning electron microscopy(FE-SEM) and X-ray diffraction(XRD). Diameter of obtained composite fibers were in range of 70 ~150nm. Pure titanium dioxide nanofibers were obtained through to high temperature calcination of the inorganic-organic composite fiber. The prepared titanium dioxide nanofibers have roughsurface and small diameter compare with TiP/PVP composite nanofiber. When calcined at 600°C, the nanofibers structure convert into anatase and rutile mixed phased from amorphous structure. the nanofiber results in both anatase and rutile phases. Calcination of these composite fibers at 800°C resulted in pure rutile titania nanofibers