

## Decoration of TiO<sub>2</sub> NWs Based Self-powered Devices by Silver Nano Materials and Polymers

### Abstract

Due to the good physical and chemical properties of titanium dioxide, TiO<sub>2</sub> NWs has been a very promising selection for moisture-induced self-powered devices. However, the voltage generated by TiO<sub>2</sub> NWs based self-powered devices is still not high enough and can't last long. In my work, silver, as an active metal, was used to decorated TiO<sub>2</sub> NWs in the form of particles and wires. The connection between silver and TiO<sub>2</sub> NWs is enhanced through the annealing process, thereby increasing the voltage. The relationship between the voltage and the concentration of silver nanomaterials is studied. Meanwhile, different polymers were coated on TiO<sub>2</sub> NWs to increase the voltage hold time.