Synthesis and Laser Patterning of Silver Nanowire for Touch Screen Panel Application

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Touch Screen Panel(TSP) has become an important part of display as seen in smart phones, navigation, tablet PC and even TV's. The transparent conducting electrode(TCE) is one of the key materials needed in TSP and has a deciding role in the fabrication process of touch screen panel. The indium tin oxide(ITO) is currently used as TCE in the form of thin film on polyethylene terephthalate(PET) film, but other transparent conducting material has to be used for the fabrication of larger size TSP than 20 inches due to the high surface resistance of ITO films. The new TCE's include carbon nano-tube (CNT), graphene, conducting polymer and silver nano-wire/metal mesh materials.

In this work, we investigated a new synthetic methods of silver nanowire and graphene-AgNW composite sheet for application as TCE in touch screen panels.

We also studied the effective m ethods of recovering silver nano-materials after synthesis because the conventional filtration,centrifuge and other methods do not give desirable yield in recovery. The preparation of silver ink and its laser patterning process will also be discussed for touch panel application.

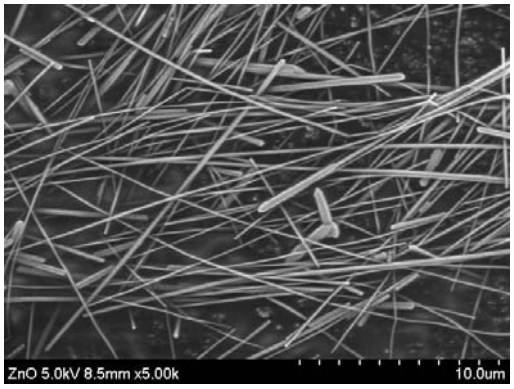

Fig. 1. AgNWs synthesized ander optimum condition

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