

Nano-grid structure of silver nanowires for a transparent and flexible electrode

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We present a new class of rapid solution process for fabricating highly uniform, well aligned silver-nanowires thin films. The film deposition directly on rigid or plastic substrates is driven by dragging a meniscus of microliter nanowire suspension trapped between two plates. The fine tuning of the optoelectronic properties of the conducting thin films is achieved by simply varying the number of coating, concentration of suspension, volume of solution. The striking point is that deposited silver nanowires on substrate are aligned along with the coating direction. Using the alignment of nanowires allows thin film to have higher optoelectronic properties easily. This coating technique is simple, inexpensive, and easy to scale for large-area thin films used as transparent electrodes with a significant reduction of the material consumption.