

Fabrication of CNT films and the rational CNT applications made from them.

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The CNT film is the crucial material for many applications. In this talk, I would overview our efforts, over the last decade, to fabricate CNT films, pattern them into functional components, and to develop rational CNT devices. Our initial efforts used and was focused on thin self-standing aligned CNT films directly synthesized by CVD and transferred to the device substrate. These films enabled to realize many devices with very high performances such as strain-sensors [1], bio-energy devices [2], CNT-Cu wires [3] with high ampacity and super-capacitors. While these works brought insights into promising directions for CNT devices, the use of thin aligned CNT films made by CVD limited the development of real commercial products. Therefore, we have from CNT dispersions. Currently, we have succeeded in fabricating CNT dispersions without surfactants that can be coated into CNT films and patterned subsequently for CNT devices [4][5]. This approach is scalable and would enable mass production of the aforementioned CNT devices.

References:

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