

## Microwave synthesis of nano-materials

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A novel fabrication technology was invented by Prof. Kun-Hong Lee's group which enabled them to synthesize CNTs directly on polymeric substrates. The main idea is the selective heating of catalysts by using microwaves. The polymeric substrate is not heated due to the lack of polar groups. This technology has been extended to the fabrication of working prototypes for backlights of LCDs. Simulation study of the microwave heating process was performed for the large area displays. The finite element method (FEM) was used in the model study, and the dominant factors were clarified for the fabrication of large area displays. In addition to that, we were able to synthesize silicon nanowires to be used as the anode material of lithium-ion batteries, and to modify the surface of carbon fibers to enhance the adhesion between carbon fibers and matrix polymers.