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**Controlled CVD Growth and Fabrication of Single-Walled  
Carbon Nanotubes Array on Surface**

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## 要旨

Due to their excellent properties, single-walled carbon nanotubes (SWNTs) have been regarded as one of the most potential materials for future applications in nanoelectronic devices. However, there is a huge gulf between production and applications. To meet the needs for applications, SWNTs' diameter, chirality, and metallic/semiconducting property should be controlled in the growth process. We present herein a brief review on the controlled growth and fabrication of SWNTs array on surface in our group, including 1) Temperature mediated chemical vapor deposition (CVD) growth of SWNTs with controlled diameter; 2) Cap engineering for SWNTs growth with controlled chirality; 3) Direct growth of semiconducting single-walled carbon nanotube array; and 4) Separation of semiconducting and metallic SWNTs by assistance of "scotch tape".

