

Controlled Synthesis of Single-Walled Carbon Nanotubes: from Fundamental Research to Application-Targeting

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Abstract:

Single-walled carbon nanotubes (SWCNTs) present outstanding properties determined by their structures, which have shown great potentials in many fields (e.g. electronics). Therefore, the controlled synthesis of SWCNTs is one of the most important scientific research topics fundamentally and also the prerequisite for high-ending applications. In this talk, many aspects of selective growth of SWCNTs via chemical vapor deposition (CVD) will be discussed, especially on vapor-liquid-solid (VLS) and vapor-solid-solid (VSS) growth mechanism. The arc-discharge and laser ablation processes will also be re-evaluated. In addition, a brief introduction and perspective of the synergetic optimization of synthesis, sorting, and assembling of SWCNTs for electronic applications will be also made.



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