

Common salts directed growth of metal-free horizontal SWNT arrays

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Growth of horizontal SWNT arrays on the ST-cut quartz substrate by normal gradually-heating method.

The pre-treatment of the substrate was the same as the rapid-nucleation method. A drop of 0.05 M NaCl ethanol solution was spin-coated onto the quartz. The system was first purged with 100 sccm Ar and 100 sccm H₂, and then the quartz was heated to the growth temperature of 850 °C at a rate of 21.5 °C min⁻¹ for about 40 min. After that, 0.5 sccm ethylene was introduced into the furnace to grow SWNT arrays.

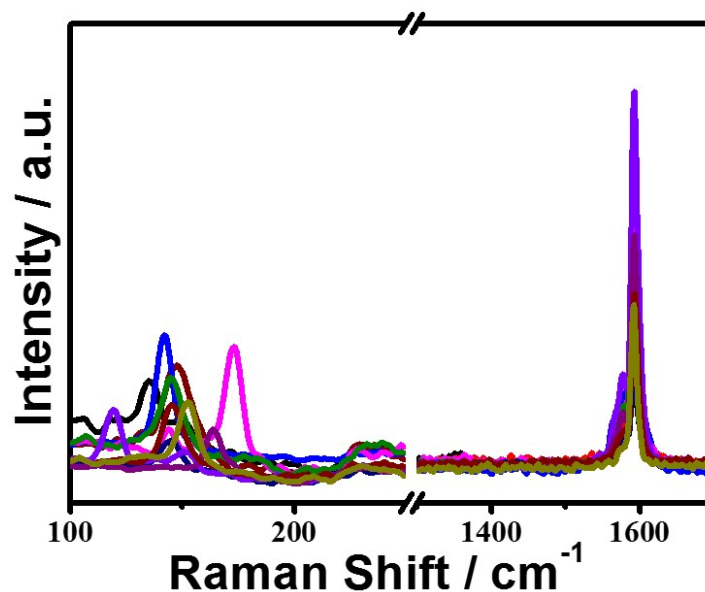


Fig. S1 Raman spectra of the multiple as-grown SWNTs.

Supplementary Information

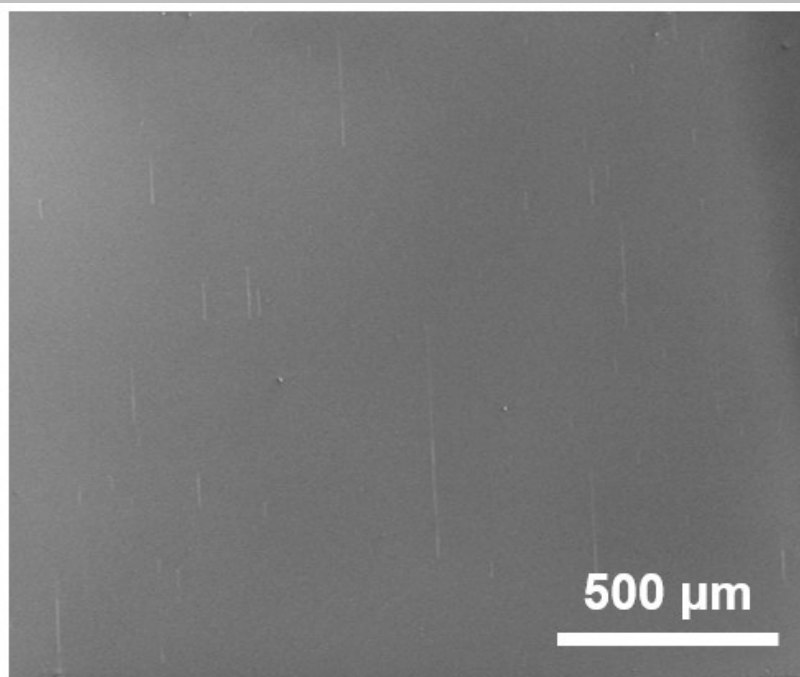


Fig. S2 SEM image of SWNT arrays grown by normal gradually-heating method on quartz in large area.

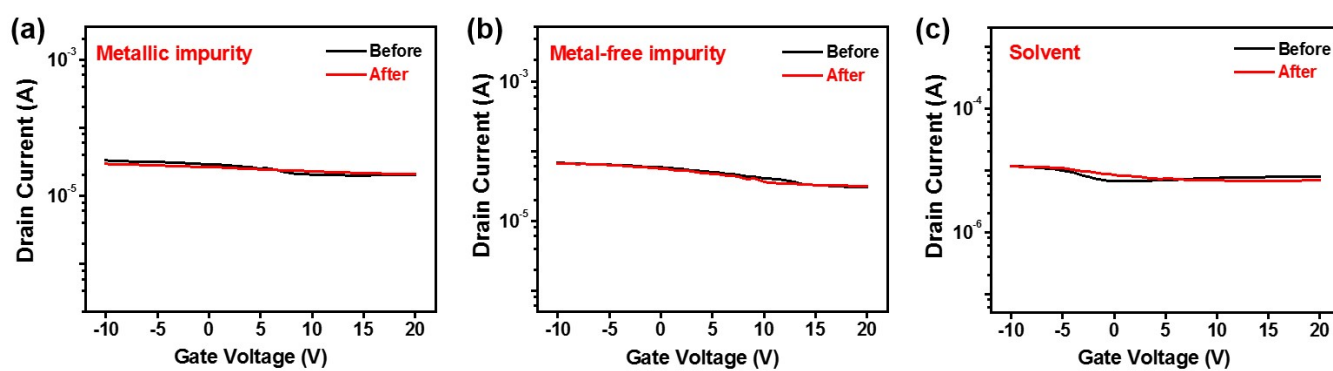


Fig. S3 The $I_{ds}-V_g$ curves of comparison at $V_{ds}=1V$ between pristine metallic SWNT and after dealt with $FeCl_3$ solution (a), $NaCl$ solution (b) and alcohol (c).