

Defect-Induced Efficient Heteroepitaxial Growth of Single-Wall Carbon Nanotubes @ Hexagonal Boron Nitride Films

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SUPPLEMENTARY MATERIAL

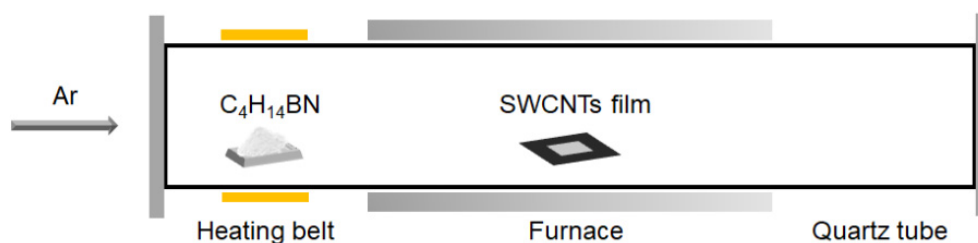


Figure S1. Schematic of the APCVD apparatus used to synthesize SWCNT@h-BN.

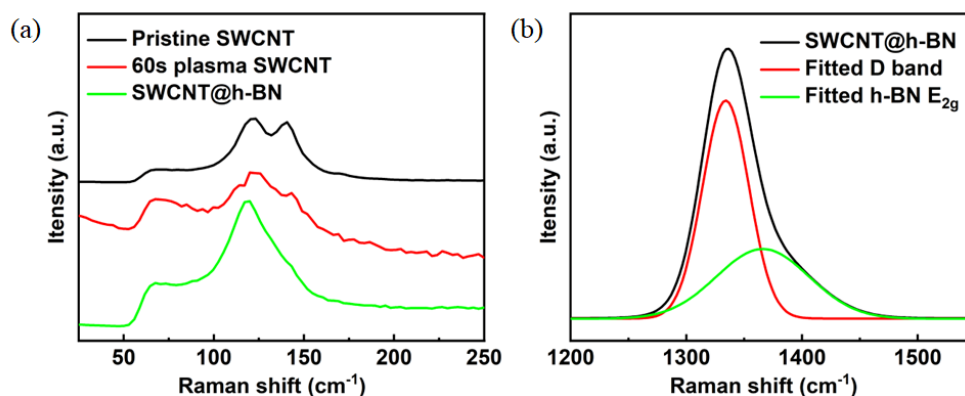


Figure S2. (a) RBM Raman spectra of pristine SWCNTs, plasma-treated SWCNTs, and SWCNT@h-BN, (b) D band Raman spectrum of SWCNT@h-BN excited by 532 nm laser.

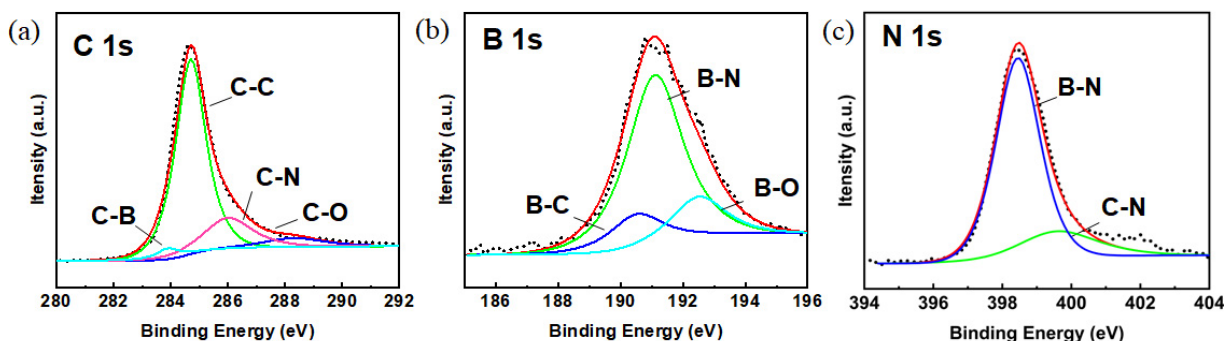


Figure S3. XPS spectra of SWCNT@h-BN. (a) C 1s, (b) B 1s, and (c) N 1s.

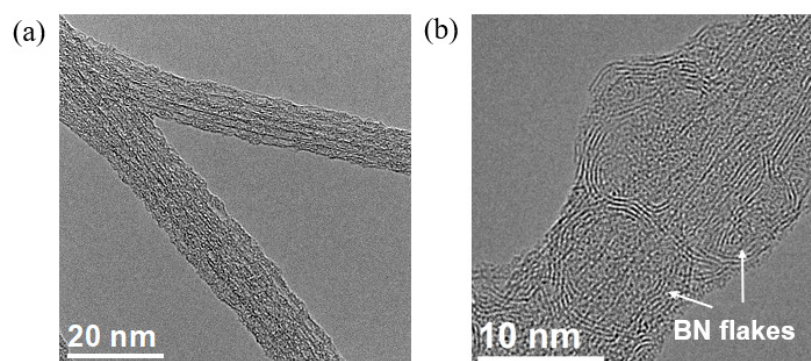


Figure S4. TEM images of (a) SWCNT film after 60 s-plasma treatment, (b) SWCNT@h-BN film obtained using SWCNTs shown in (a) as a template.

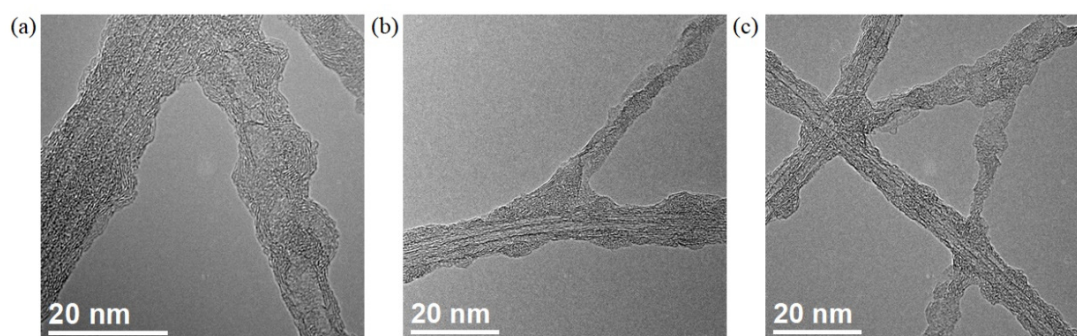


Figure S5. TEM images of the SWCNT@h-BN were synthesized at different temperatures of (a) 900 °C, (b) 1000 °C, and (c) 1100 °C.

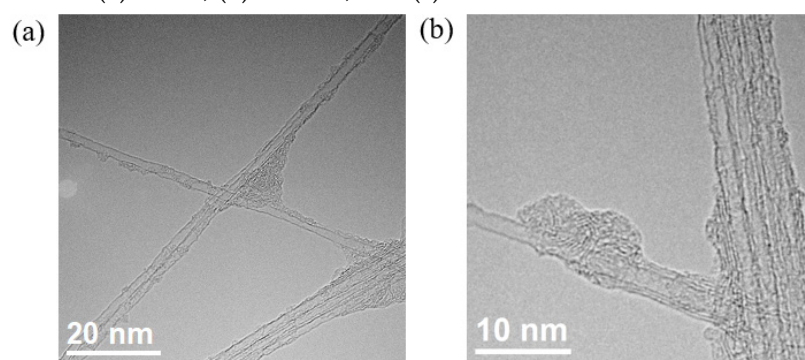


Figure S6. TEM images of SWCNT@h-BN grown from SWCNTs without plasma treatment.

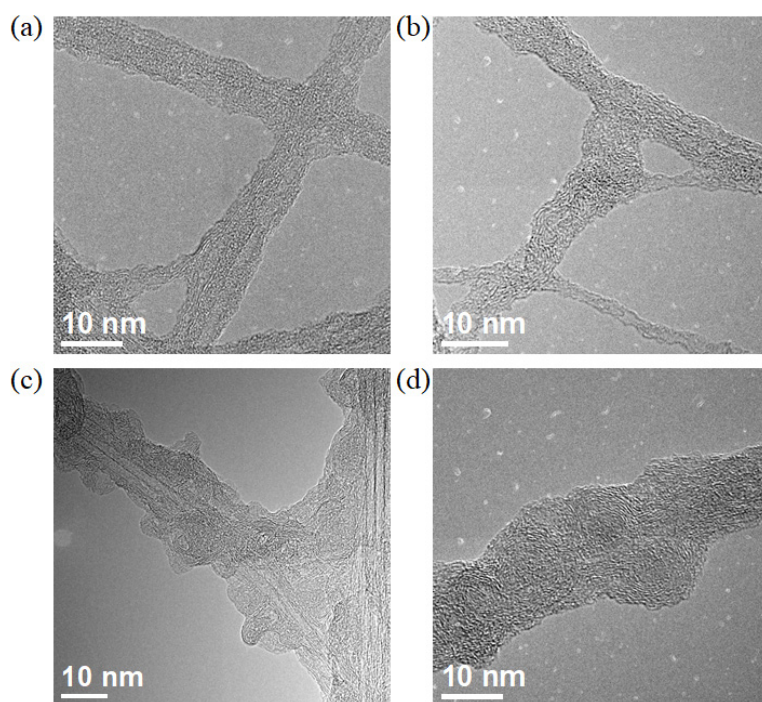


Figure S7. TEM images of the SWCNT@h-BN experienced growth times of (a) 5 min, (b) 15 min, (c) 30 min, and (d) 120 min.

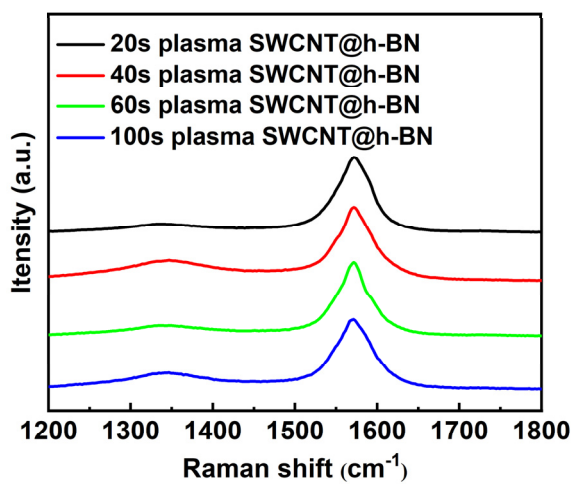


Figure S8. D and G bands Raman spectra of the SWCNT@h-BN synthesized using SWCNT templates experienced different plasma treatment time as a template.