

## Supplementary Information

### Direct Observation on Morphological Evolution of Catalyst during Carbon Nanotube Forest Growth: New Insights for Growth and Growth Termination

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## 1. Additional TEM images of CNTs and catalyst particles

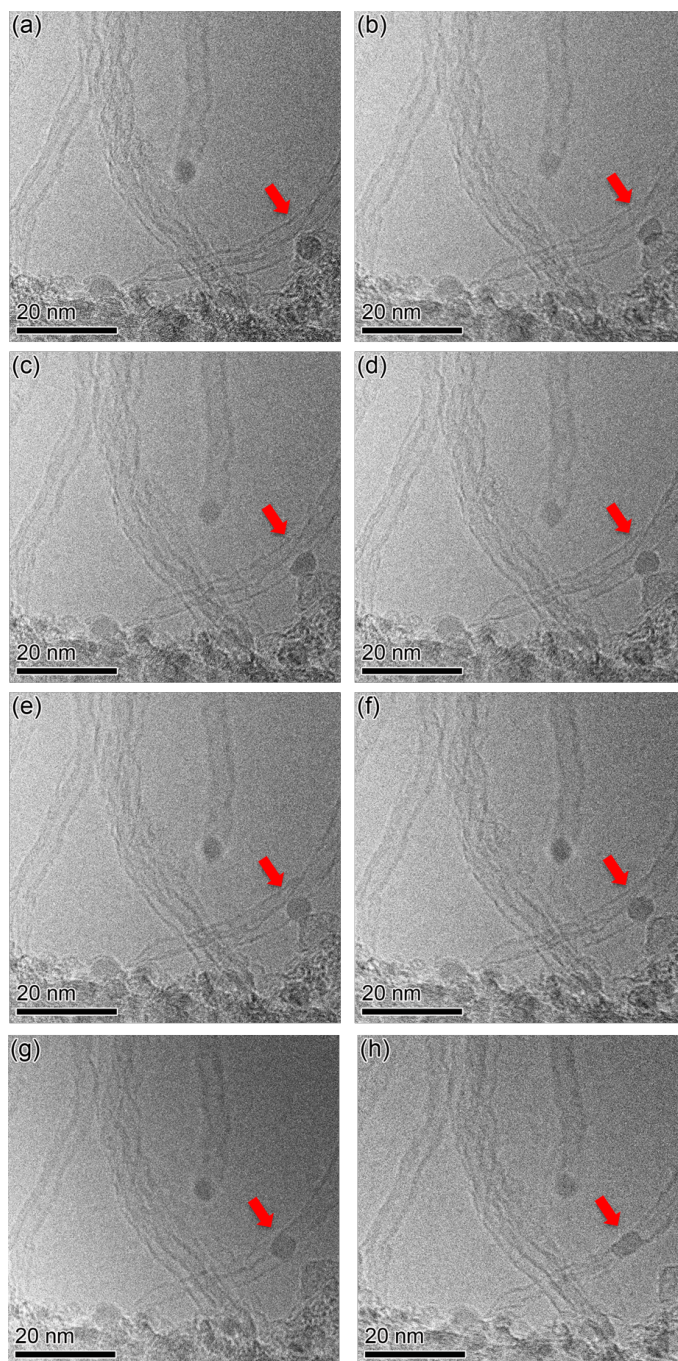


Fig. S1. Eight subsequent snapshots (a)-(h) captured from the video recorded during in-situ TEM growth experiment showing that a catalyst particle jump to an adjacent CNT.

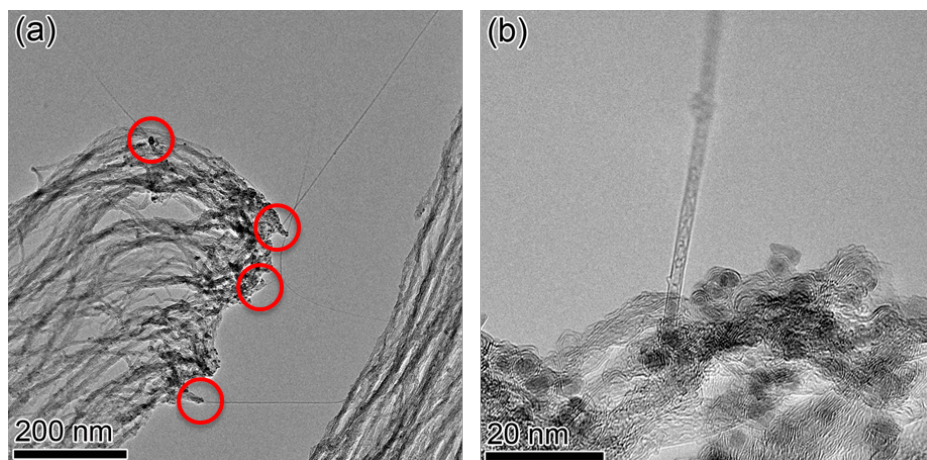


Fig. S2. (a) High resolution TEM images of the lifted catalysts that nucleated and grew new CNTs of their own and (b) magnified TEM image of (a).

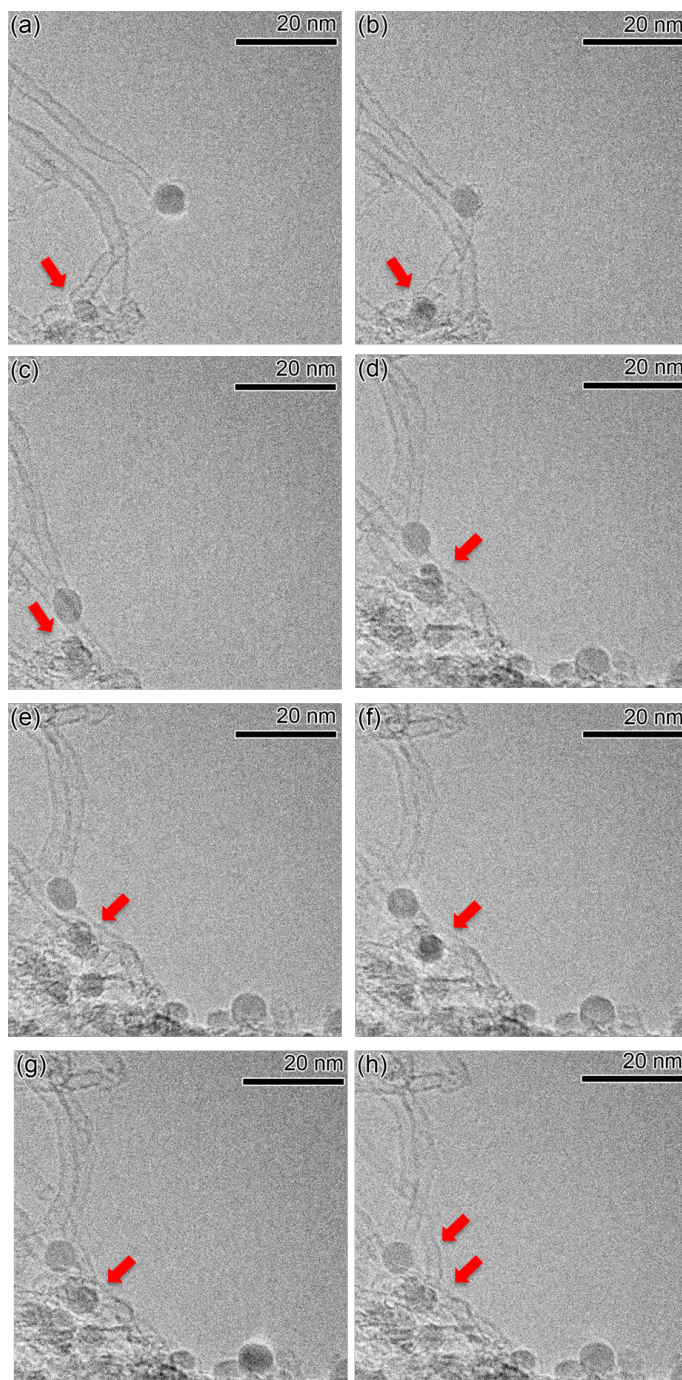


Fig. S3. Eight subsequent snapshots (a)-(h) captured from the video recorded during in-situ TEM growth experiment showing that a lifted catalyst particle produce a new CNT.