



## Technical Data Sheet

### ACS Material Double-Walled Carbon Nanotubes (DWCNTs)

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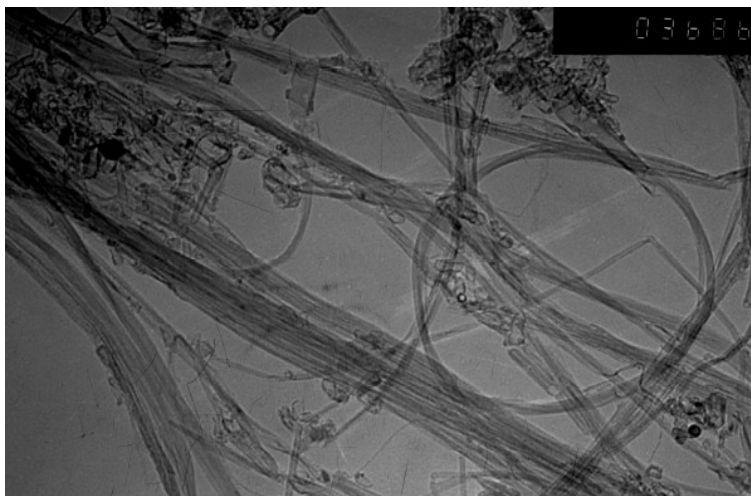
Revision: 110917

## 1. Preparation Method

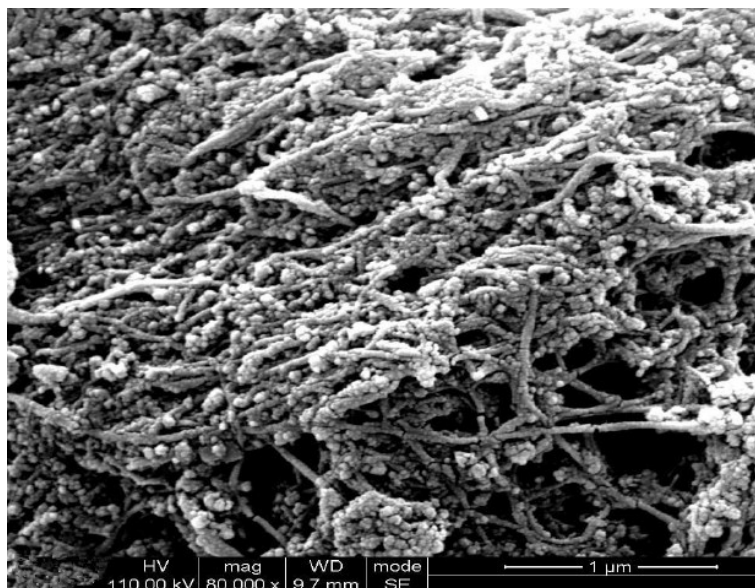
Chemical Vapor Deposition (CVD) Method

## 2. Characterizations

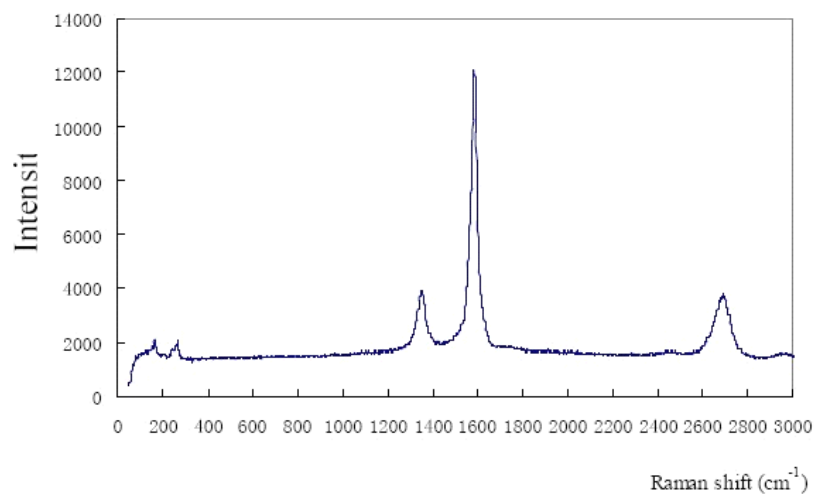
<b>Purity:</b>	>60%
<b>Color:</b>	Black
<b>Outer Diameter:</b>	2-4 nm
<b>Inner Diameter:</b>	1-3 nm
<b>Length:</b>	Type A: ~50 $\mu\text{m}$ Type B: 0.5-2 $\mu\text{m}$
<b>SSA:</b>	>350m <sup>2</sup> /g
<b>True density:</b>	~2.1g/cm <sup>3</sup>
<b>EC:</b>	>100 S/cm



TEM Image of ACS Material Double-Walled Carbon Nanotubes (Length = ~50  $\mu\text{m}$ )



SEM Image of Double-Walled Carbon Nanotubes (Length =  $\sim 50 \mu\text{m}$ )



Raman Spectrum of DWNT

Raman Spectrum of ACS Material Double-Walled Carbon Nanotubes (Length =  $\sim 50 \mu\text{m}$ )

### 3. Application Fields

Catalysts, additives in polymers, nanoelectrodes, drug delivery, sensors, electromagnetic-wave absorption and shielding, electron field emitters for cathode ray lighting elements, flat panel display, gas-discharge tubes in telecom networks, energy conversion, lithium-battery anodes, hydrogen storage, supercapacitors, nanotube composites (by filling or coating), nanoprobes for STM, AFM, and EFM tips, nanolithography, reinforcements in composites, *etc.*

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