Supplementary Information for

Amplitude response of conical multiwalled carbon nanotube probes
for atomic force microscopy

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Figure S1. (a) Deflection-displacement curve of conical MWCNT probe. (b) Deflection-displacement curve of commercial probe. I, II, III, IV, V and i, ii, iii, iv represent the corresponding motion stages in Figure 3(a) and (b), respectively.
Figure S2. Typical amplitude-displacement curves for 18 times of a conical MWCNT probe. III is used as Figure 3(a) in the main context.
Figure S3. Comparison of the topography of SWCNT networks in 3 different positions. Topography in (a), (b), (c) is acquired by commercial probes. Topography in (d), (e), (f) corresponds to the same positions in (a), (b), (c) and is acquired by a MWCNT conical probe.
| Measurements | Probe      | W (nm) | h (nm) | estimated radius (nm) |
|--------------|------------|--------|--------|-----------------------|
| 1            | MWCNT probe | 23.4   | 1.7    | 40.3                  |
| 2            | MWCNT probe | 24.1   | 1.7    | 42.7                  |
| 3            | MWCNT probe | 27.6   | 2.2    | 43.3                  |
| 4            | SCM-PIT     | 25.8   | 1.7    | 48.9                  |
| 5            | SCM-PIT     | 28.2   | 2.0    | 49.7                  |
| 6            | SCM-PIT     | 32.2   | 2.8    | 46.3                  |

Table S1. Estimation of the radius of a MWCNT probe and a commercial probe (SCM-PIT). The average radius of the MWCNT probe is 42.1 nm and the average radius of commercial probe is 48.3 nm.