Supplementary Material

Electrical Properties Enhancement of Carbon Nanotube Yarns by Cyclic Loading

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**Table 1.** Apparent electrical resistivity of untreated and post-treated CNTYs before and after cyclic stretching (100 cycles) to a different loading strain.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **STD. Apparent resistivity 1 after 100 cycle [Ω cm]** | **Apparent resistivity1 after 100 cycle  [Ω cm]** | **STD. Apparent resistivity 1  [Ω cm]** | **Apparent resistivity 1  [Ω cm]** | **Maximum strain for cyclic stretching [%]** |  |
| 6.36 × 10−5 | 4.84 × 10−4 | 4.10 × 10−5 | 4.83 × 10−4 | 5 | Untreated CNTYs |
| 7.13 × 10−5 | 2.66 × 10−4 | 7 |
| 2.44 × 10−5 | 1.93E × 10−4 | 10 |
| 1.61 × 10−5 | 9.42 × 10−4 | 12 |
| 4.40 × 10−5 | 2.78 × 10−4 | 3.07 × 10−5 | 2.80 × 10−4 | 1 | Post treated CNTYs |
| 4.27 × 10−5 | 1.45 × 10−4 | 3 |
| 3.43 × 10−5 | 1.22 × 10−4 | 5 |

1 Apparent resistivity was calculated using the measured cross-sectional area from Nanocomp datasheets (0.013mm2 for the untreated CNTYs and 0.045mm2 for the post treated CNTYs) and a length of 70 mm (original distance between grips).