**Materials List for:**

# Dry Oxidation and Vacuum Annealing Treatments for Tuning the Wetting Properties of Carbon Nanotube Arrays

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## Materials

| Name | Company | Catalog Number | Comments |
|---|---|---|---|
| Lindberg Blue M Mini-Mite tube furnace | Thermo Scientific | TF55030A | 1" tube furnace for CNT array growth |
| Electronic mass flow controllers | MKS | PFC-50 πMFC | Max flow rate of 1000 sccm |
| Electronic pressure controller | MKS | PC-90 πPC | Max pressure of 1000 Torr |
| 1" quartz tube | MTI Corp. | >EQ-QZTube-25GE-610 | 1" D x 24" L |
| Hydrogen gas | Airgas | HY UHP200 | CNT array growth precursor gas, 99.999% purity |
| Ethylene gas | Matheson | G2250101 | CNT array growth precursor gas, 99.999% purity |
| Argon gas | Airgas | AR UHP200 | CNT array growth precursor gas, 99.999% purity |
| Silicon wafer | El-Cat | 2449 | With 300 nm polished thermal oxide layer |
| Iron pellets | Kurt J Lesker | EVMFE35EXEA | 99.95% purity |
| Aluminum oxide pellets | Kurt J Lesker | EVMALO-1220B | 99.99% purity |
| E-beam evaporator | CHA Industries | CHA Mark 40 | For buffer and catalyst layer deposition |
| UV/ozone cleaner | BioForce Nanosciences | ProCleaner Plus | For oxidizing CNT array |
| Oxygen plasma cleaner | PVA TePla | M4L | For oxidizing CNT array |
| Vacuum oven | VWR | 97027-664 | For deoxidizing CNT array |
| SEM | Zeiss | 1550 VP | For CNT array growth characterization |
| XPS | Surface Science | M-Probe | For surface chemistry characterization |
| Contact angle goniometer | ramé-hart | Model 190 | For wetting properties characterization |

 