Supplementary Material (ESI) for *Chemical Communications*

Can Nitrones Functionalize Carbon Nanotubes?

Giacomo Ghini,[a] Lapo Luconi,[a] Andrea Rossin,[a] Claudio Bianchini,[a] Giuliano Giambastiani,[a],* Stefano Cicchi,[b] Luisa Lascialfari,[b] Alberto Brandi [b],* and Alessandra Giannasi [c].

[a] Istituto di Chimica dei Composti Organometallici (ICCOM-CNR), Via Madonna del Piano 10, 50019 - Sesto F.no (Firenze), Italy. [b] Dipartimento di Chimica Organica "U. Schiff", Università degli Studi di Firenze, Via della Lastruccia, 13, 50019 - Sesto F.no (FI) Italy. [c] Istituto dei Sistemi Complessi (ISC-CNR), Via Madonna del Piano 10, 50019 - Sesto F.no (Firenze).

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Material characterization (general consideration). MWCNTs (> 90% carbon basis) were provided by NANOCYL S.A. (Sambreville - BELGIUM) or Sigma-Aldrich®. *Thermal gravimetric analysis* measurements were performed on an EXSTAR Thermo Gravimetric Analyzer (TG/DTA) Seiko 6200 under N_2 atmosphere (50 mL/min) coupled with a ThermoStar™ GSD 301 T (TGA-MS) for MS gas analysis of volatiles. *TEM analysis* was performed using a Philips CM12 operating at 120 keV, with samples prepared by drop casting previously sonicated solutions or suspensions over graphite grating and images recorded with a CCD camera (Gatan 791). *Atomic force microscopy* was done using a Park System XE-100E AFM instrument, with samples prepared by spin-coating (4200 rpm, 20") previously sonicated sample solutions or suspensions on freshly cleaved mica substrates. The images were recorded with standard tips (Veeco Tips NCHV-A) in tapping mode at a scan rate of 1.0 Hz. *The spectroscopic Raman measurements* were carried out using the green line (514.5 nm) of an argon ion laser. Spectra were analyzed with a Spex Triplemate spectrometer, equipped with high resolution holographic gratings, and recorded using a liquid nitrogen cooled Horiba Jobin Yvon CCD camera. I_D/I_G integrated intensity ratio for MWCNTs and *f*-MWCNTs have been calculated through a fitting procedure on the acquired spectra using the Peak Fitting module of Origin program. XRDP data were collected in the 10-60 region of 2theta using a Philips X'Pert PRO diffractometer with Cu Kalpha radiation (lambda= 1.5418Å). *Elemental analyses* were performed using a Thermo FlashEA 1112 Series CHNS-O elemental analyzer with an accepted tolerance of ± 0.4 units.

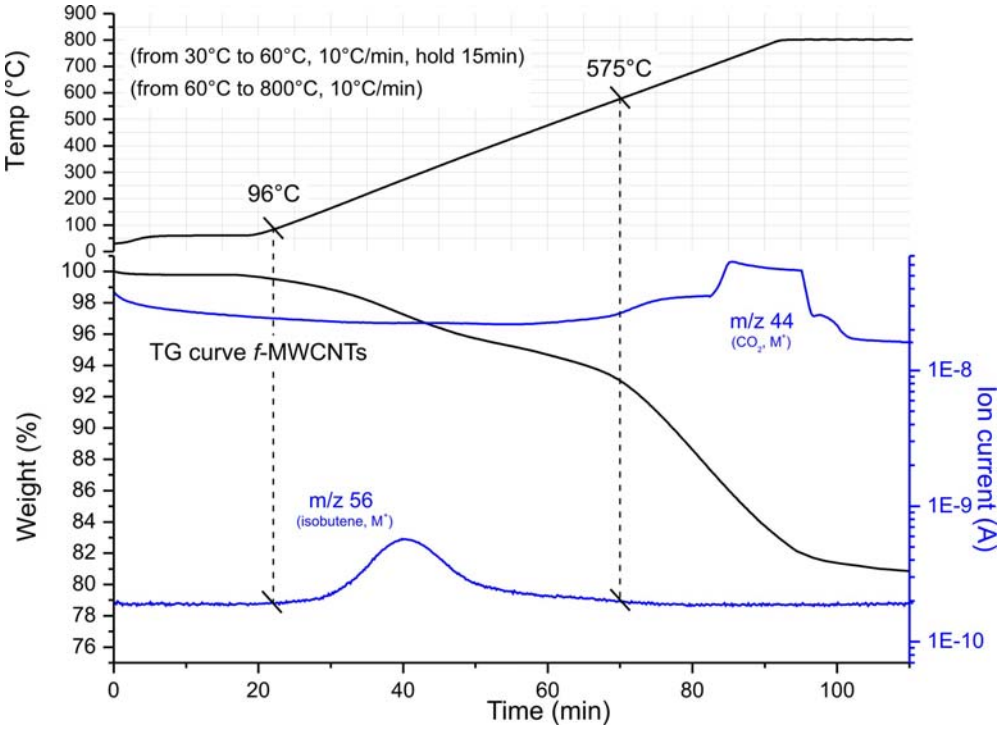

Figure S1. TGA-MS of *f*-MWCNTs from 60 to 800 °C. Isobutene (m/z = 56) and CO_2 (m/z = 44) evolution have been monitored throughout the range of temperatures.

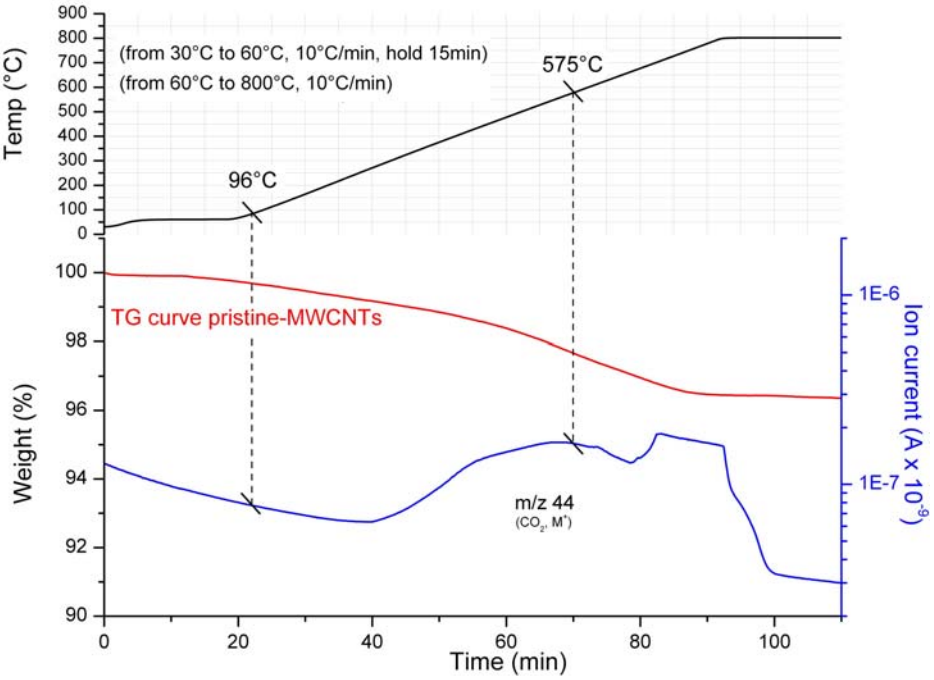

Figure S2. TGA-MS of pristine MWCNTs from 60 to 800 °C. CO_2 (m/z = 44) evolution have been monitored throughout the range of temperatures.

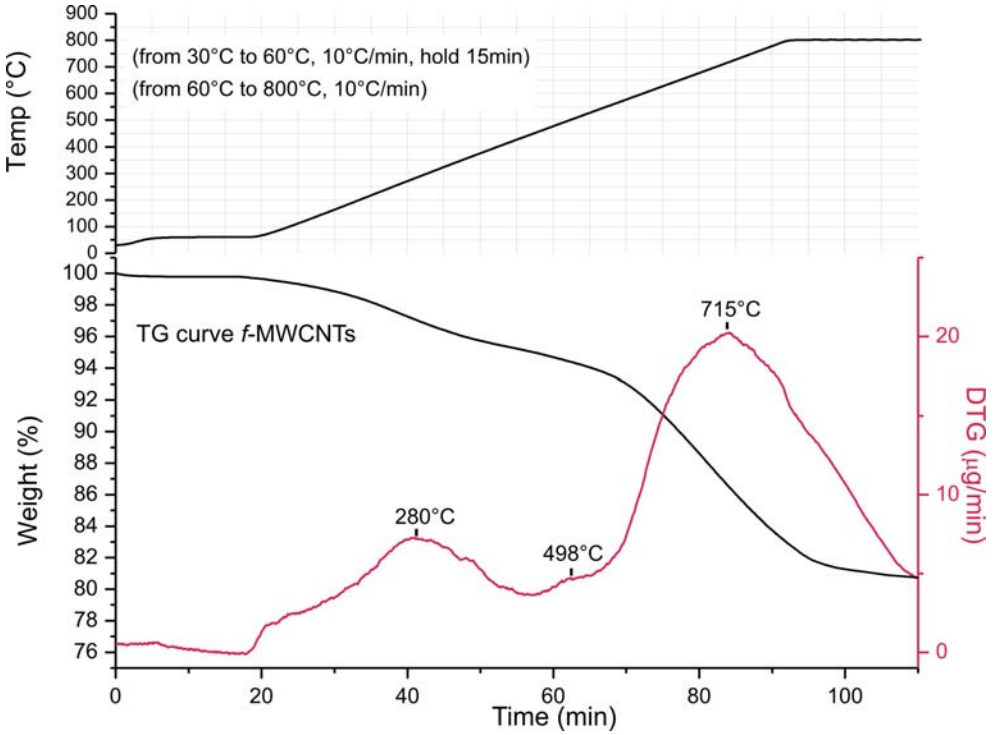

Figure S3. TGA-DTG of *f*-MWCNTs from 60 to 800 °C.

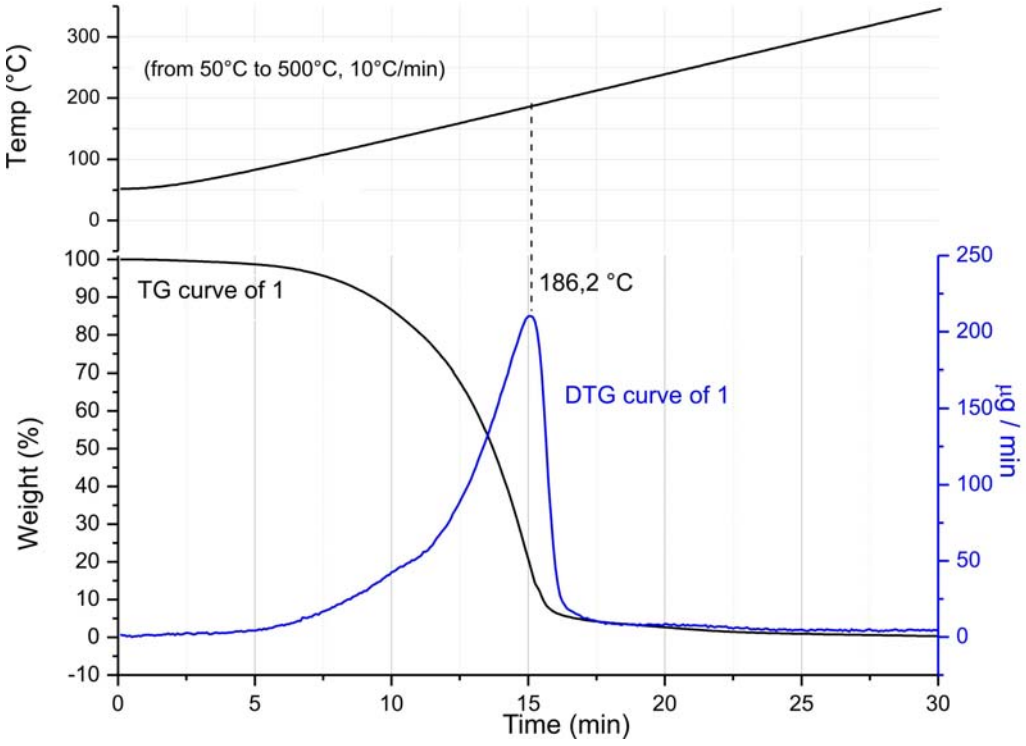

Figure S4. TGA-DTG of nitrone **1** from 50 to 500 °C.

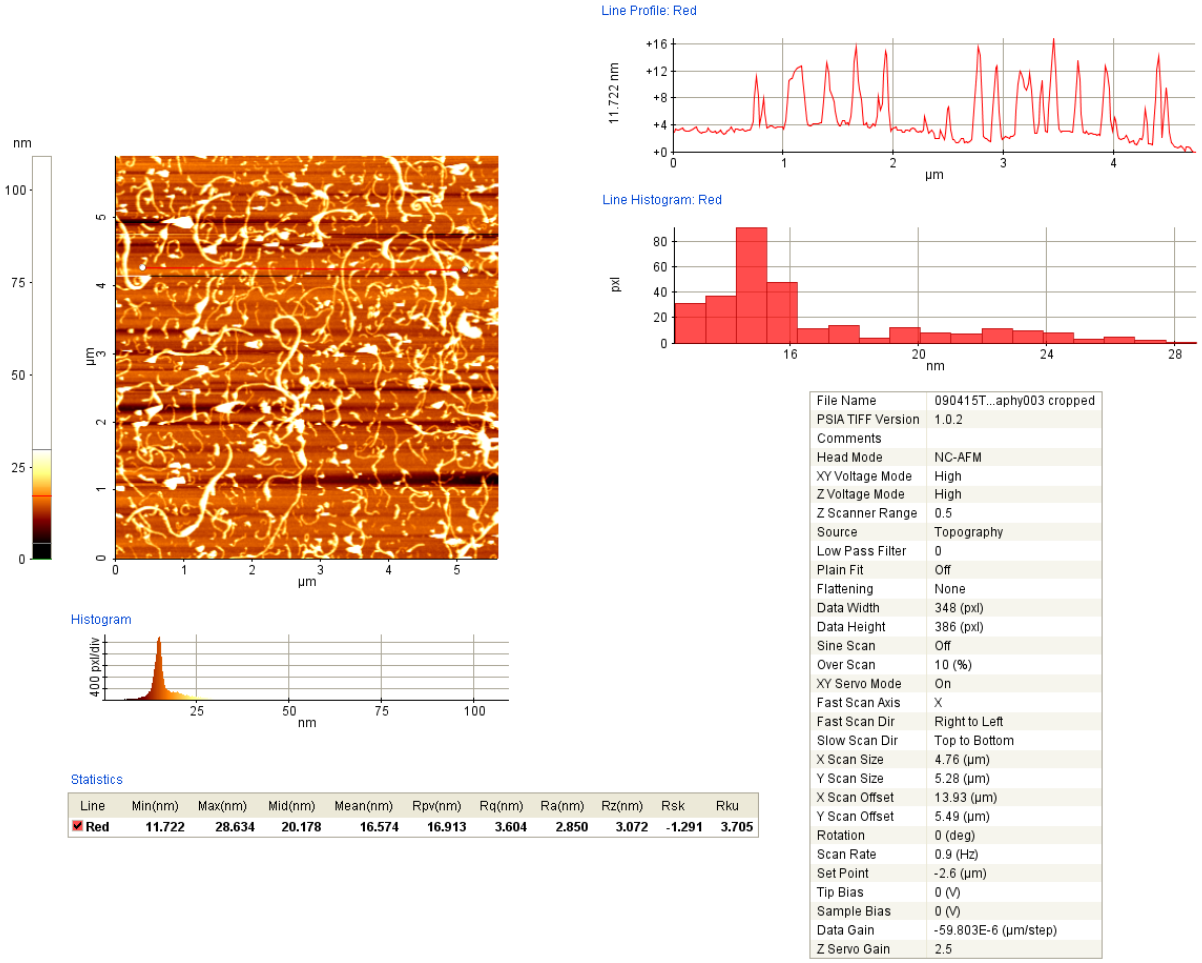

Figure S5. AFM image of *f*-MWCNTs

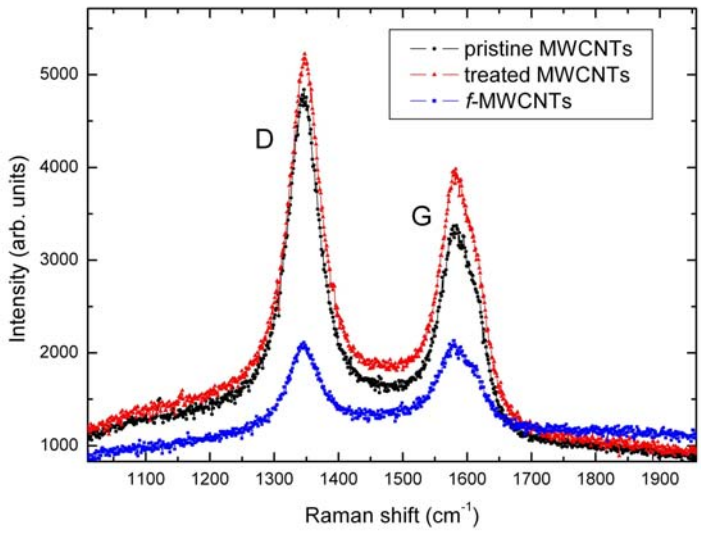

Figure S6. Raman spectra of pristine MWCNTs (black line) and *f*-MWCNTs (blu line) at 514.5 nm. Red line refers to a sample of MWCNTs which was treated in DMF at 160 °C for three days (standard reaction protocol) followed by the same washing/filtration/sonication/work-up procedures.

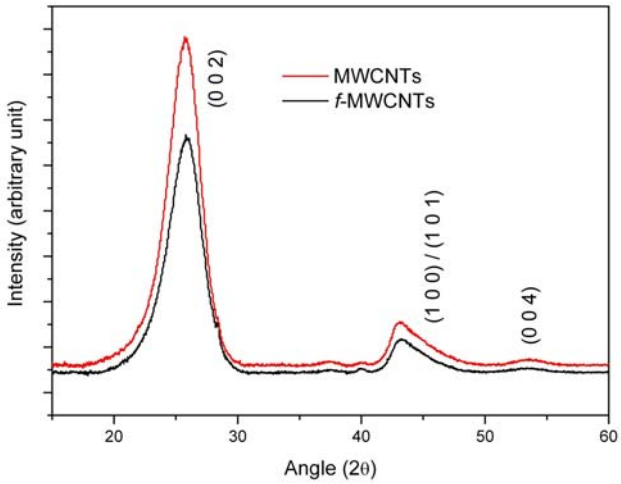

Figure S7. XRDP spectra of pristine MWCNTs (red line) and *f*-MWCNTs (black line).