

Aqueous dispersions of oligomer-grafted carbon nanomaterials with controlled surface charge and minimal framework damage

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Table 1. Washing solvent used for each grafted reagent

Grafted Compound (chemical name)	Washing solvent
3-Sulfopropyl methacrylate potassium salt	H ₂ O/Ethanol
(3-Acrylamidopropyl) trimethylammonium chloride	H ₂ O/Ethanol
Methacrylic acid	Acetone
N-methyl 4-vinylpyridine iodide	Methanol
Poly (ethyleneglycol) methacrylate	Ethanol
1-Iodododecane	Toluene

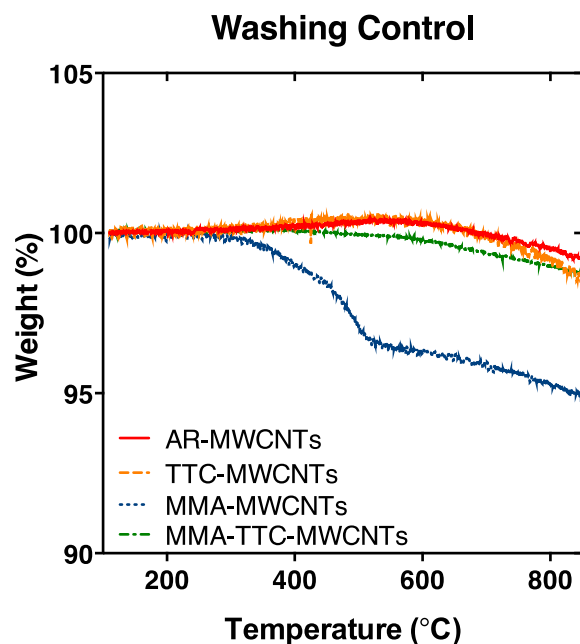


Figure S1. TGA weight loss profiles of as-received (AR) MWCNTs, thermal treated control (TTC) MWCNTs and MMA treated TTC-MWCNT, heated in N₂ atmosphere with a 10 °C/min ramping rate from 100 °C to 850 °C.

In order to establish whether the washing-up procedure can effectively remove unreacted monomers, a control of treating TTC-MWCNT with MMA monomer for overnight stirring at room temperature, followed by standard workup, has been carried out.

50 mg of TTC-Arkema was added to 4 mL of purified MMA monomer, the mixture was stirred overnight at room temperature for overnight. The unreacted reactant was removed via filtration through a 0.45 µm pore size polytetrafluoroethylene (PTFE) membrane (Whatman, UK) under vacuum. The product was thoroughly washed with 3 × 45 mL of Acetone then dispersed in 45 mL of solvent and bath sonicated (USC300T, 45kHz, 80W, VWR International, USA) for 15 minutes. The filtration-sonication cycle was repeated three times.

TGA analysis indicated no weight loss of MMA treated TTC-MWCNTs, unreacted monomer was efficiently removed with less than 0.2 % of MMA leftover.