SUPPORTING MATERIALS

Modification of multi-wall carbon nanotubes with initiators and macro-initiators

of atom transfer radical polymerization

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The organic fractions of the carbon nanotubes (CNT) modified with 1-bromoethylbenzene (BEB) and polymer were measured with TGA, and the results are shown in Figure S1.



Figure S1. Thermogravimetric behaviors of carbon nanotubes. Left: pristine carbon nanotube (CNT), 1-bromoethylbenzene modified CNT (CNT-BEB), and poly(styrene) modified CNT (CNT-BEB-PS); right: pristine carbon nanotube (CNT), poly(styrene) grafted CNT (CNT-PS), and V-shape poly(styrene)-b-poly(N-isopropylacrylamide) modified CNT (CNT-PS/PNIPAAm). The tests were carried out isothermally at 400 °C under nitrogen atmosphere.

Figure S2 and S3 represent the GA-GC/MS evolved gas analysis on modified CNTs of CNT-PS and CNT-PS/PNIPAAm. The results demonstrated that the presence of PS and PNIPAAm chains in the testing CNT samples.



Figure-S2. Evolved gas analysis results for CNT-PS: styrene was found as the major degradation product.



Figure-S3. Evolved gas analysis results for CNT-PS/PNIPAAm: in addition to styrene,

ethylamine was also found in the degradation products.