Supplementary Information

High Yield Synthesis Of Amine Functionalized Graphene Oxide And Its Surface Properties

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S1 - NMR Analysis

Fig. S1 shows the $^1$H NMR spectra obtained from GO-ButA recorded on a Bruker Ultrashield™ (400 MHz) NMR spectrometer calibrated to residual solvent peaks: proton (DMSO-D$_6$ 2.50 ppm). The appearance of a signal at 0.84 ppm indicates for CH$_3$, while CH$_2$ protons are located at 1.22 ppm indicating the presence of the alkyl chains in the GO-ButA. The broad H signal of the secondary amide (–NH–R) appearing at 3.31 ppm $^1$ further supports the formation of GO-ButA.
S2 – Thermo Gravimetric Analysis (TGA) Analysis

TGA of GO and GO-ButA were carried out in a Perkin Elmer Simultaneous Thermal Analyzer, STA 6000 in an uncapped alumina crucible operated at a heating rate of 10°C/min in nitrogen atmosphere. Fig. S2 shows that there is a significant weight loss below 100°C for GO (~11.4%) as compared to GO-ButA (~2.3%). This points to the presence of large amount of absorbed water in GO which disappear upon functionalization possibly due to increased hydrophobicity of the surfaces S2,S3. A sharp degradation in the weight of GO is witnessed around 200°C (~ 13.7 %) within the temperature range of 190 - 220°C which may be attributed to the removal of oxygen containing functionalities via pyrolysis S3,S4. A steady
decrease in the weight of GO-ButA is also observed from 200°C onwards which possibly indicate the removal of covalently bonded n-Butylamine. This finding is consistent with information present elsewhere in the literature which points towards a similar loss within 200 – 500°C S4.

**Fig. S2:** TGA curves of GO and GO-ButA

**Reference:**

