

## Supporting Information

### Triethanolamine Functionalized Graphene-Based Composite for High Performance Supercapacitors

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Figure S1. Digital image of the TEA/GO aqueous dispersion (same concentration as the reaction condition).

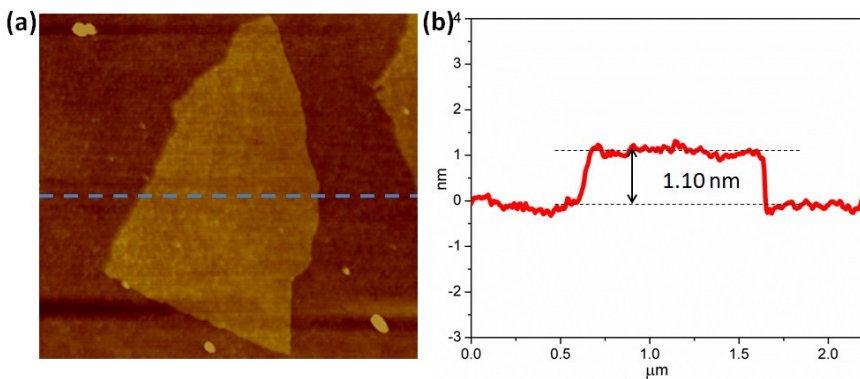


Figure S2. (a) AFM image of a single-layer GO flake with (b) average thickness of the corresponding GO flake.

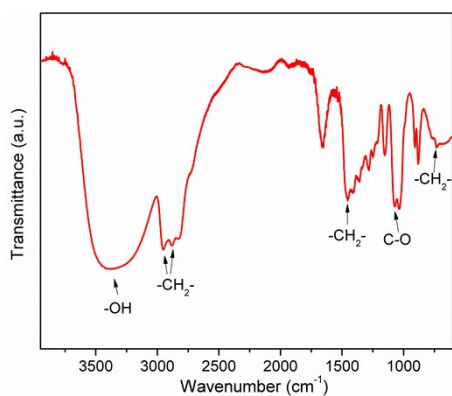


Figure S3. FTIR spectrum of TEA.

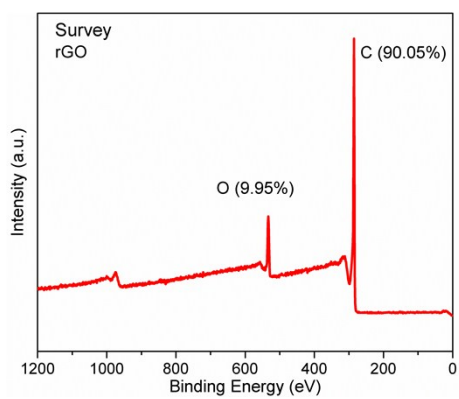


Figure S4. XPS survey spectrum of rGO control sample.

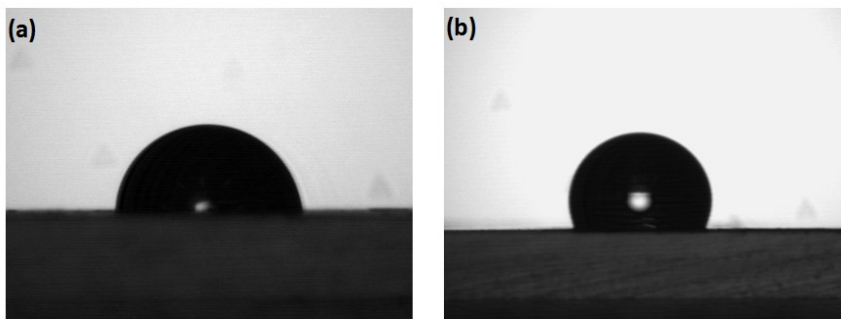


Figure S5. Contact angle measurement of the (a) TEA/rGO film and (b) rGO film.

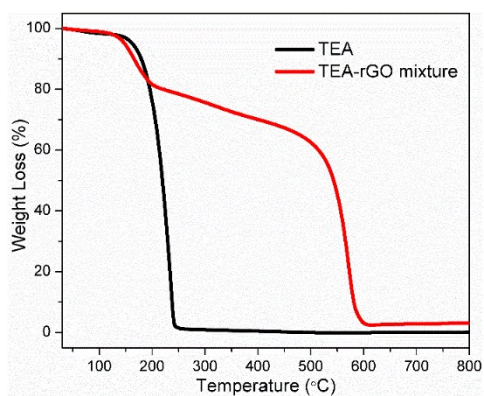


Figure S6. TGA curves of TEA and TEA-rGO mixture in air at a heating rate of 10 °C/min.

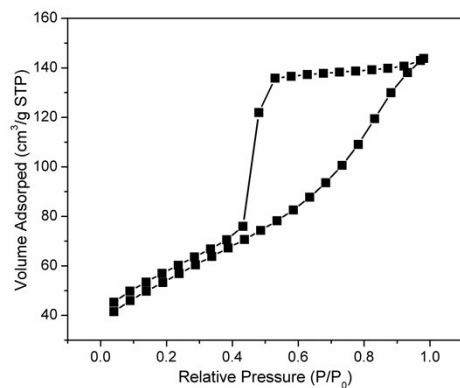


Figure S7. Nitrogen adsorption/desorption isotherm of rGO control sample.

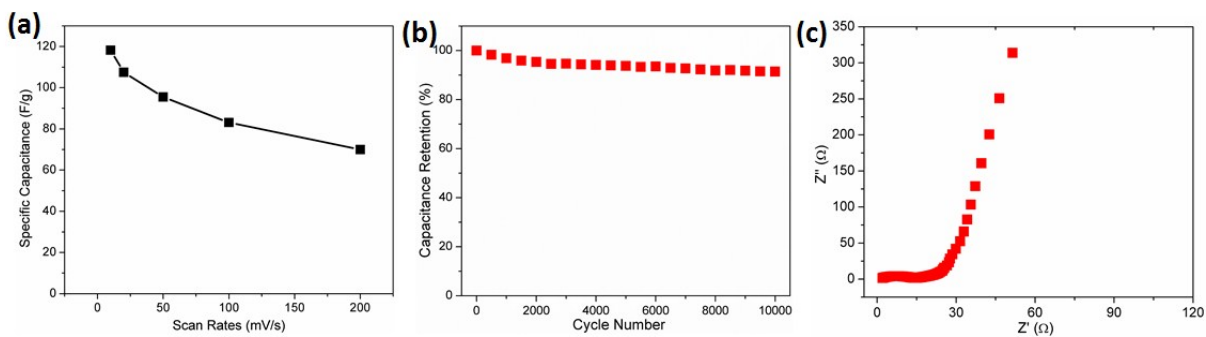


Figure S8 (a) Rate-dependent plot of the capacitance values, (b) capacitance retention after 10,000 cycles, and (c) Nyquist plot of TEA/rGO electrode in 1 M TEABF<sub>4</sub>/AN electrolyte.

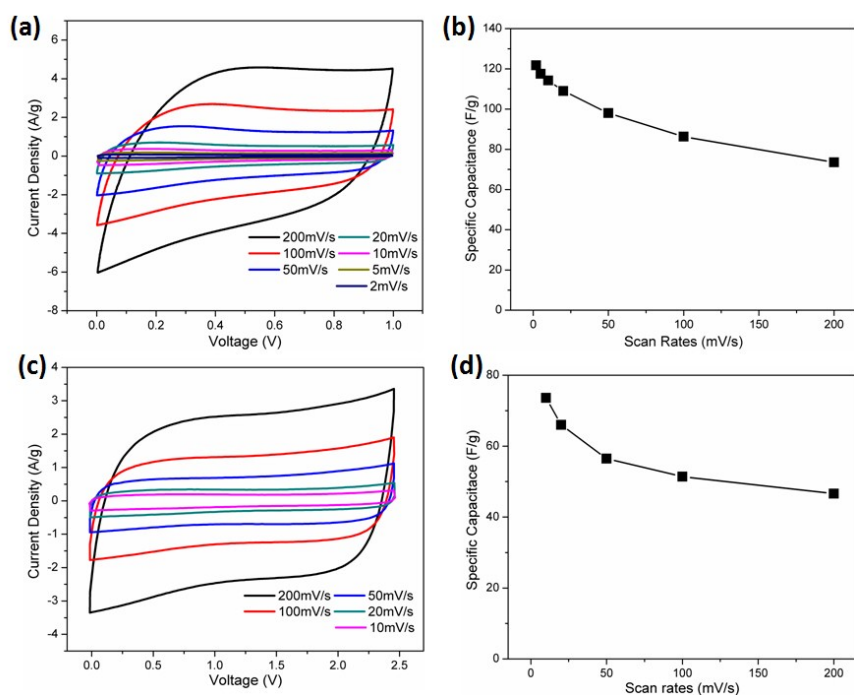


Figure S9 CV curves of rGO film in (a) 1 M H<sub>2</sub>SO<sub>4</sub> and (c) 1 M TEABF<sub>4</sub>/AN electrolytes; rate-dependent plots of capacitance values in (b) 1 M H<sub>2</sub>SO<sub>4</sub> and (d) 1 M TEABF<sub>4</sub>/AN electrolytes.

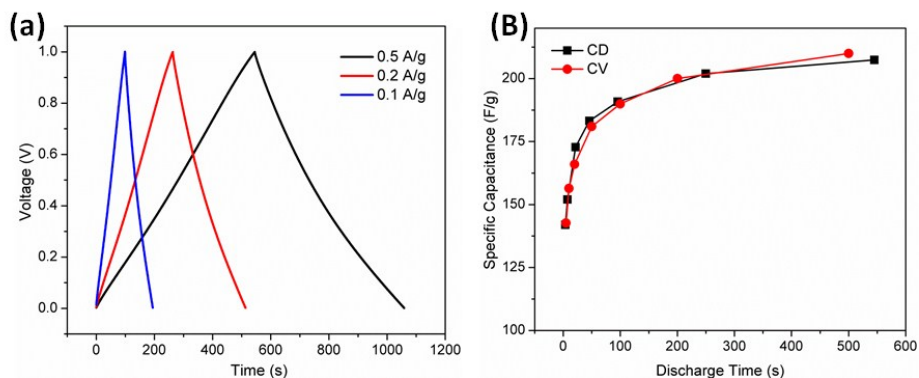


Figure S10. (a) Galvanostatic CD curves at current densities of 0.1, 0.2, and 0.5 A/g and (b) specific capacitance values calculated from both CV and CD profiles as at various discharge time in 1 M H<sub>2</sub>SO<sub>4</sub>.