Electronic Supplementary Material (ESI) for Environmental Science: Nano.


**Supporting Information**

Table SI-1. PTA temperature program for graphene.

| Temperature (°C) | Time (s) | Phase |
|---|---|---|
| 310 | 90 | 100 % He |
| 475 | 90 | 100 % He |
| 615 | 90 | 100 % He |
| 675 | 90–300 | 100 % He |
| 500 | 90 | 90% He/10% Ox |
| 550 | 90 | 90% He/10% Ox |
| 600 | 90 | 90% He/10% Ox |
| 700 | 90 | 90% He/10% Ox |
| 775 | 90 | 90% He/10% Ox |
| 910 | 90–300 | 90% He/10% Ox |

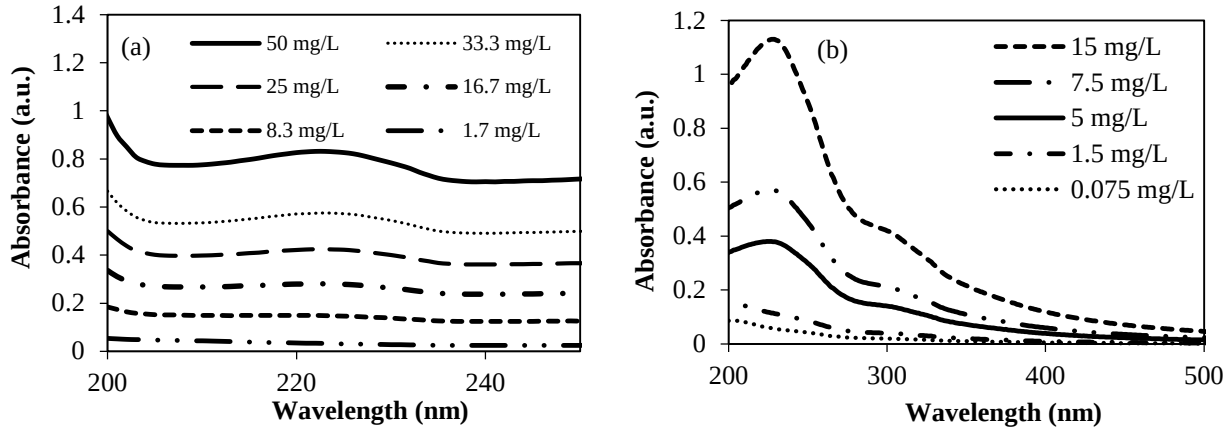


Figure SI-1. UV-Vis absorbance spectra for (a) few-layer graphene (FLG) and (b) graphene oxide (GO).

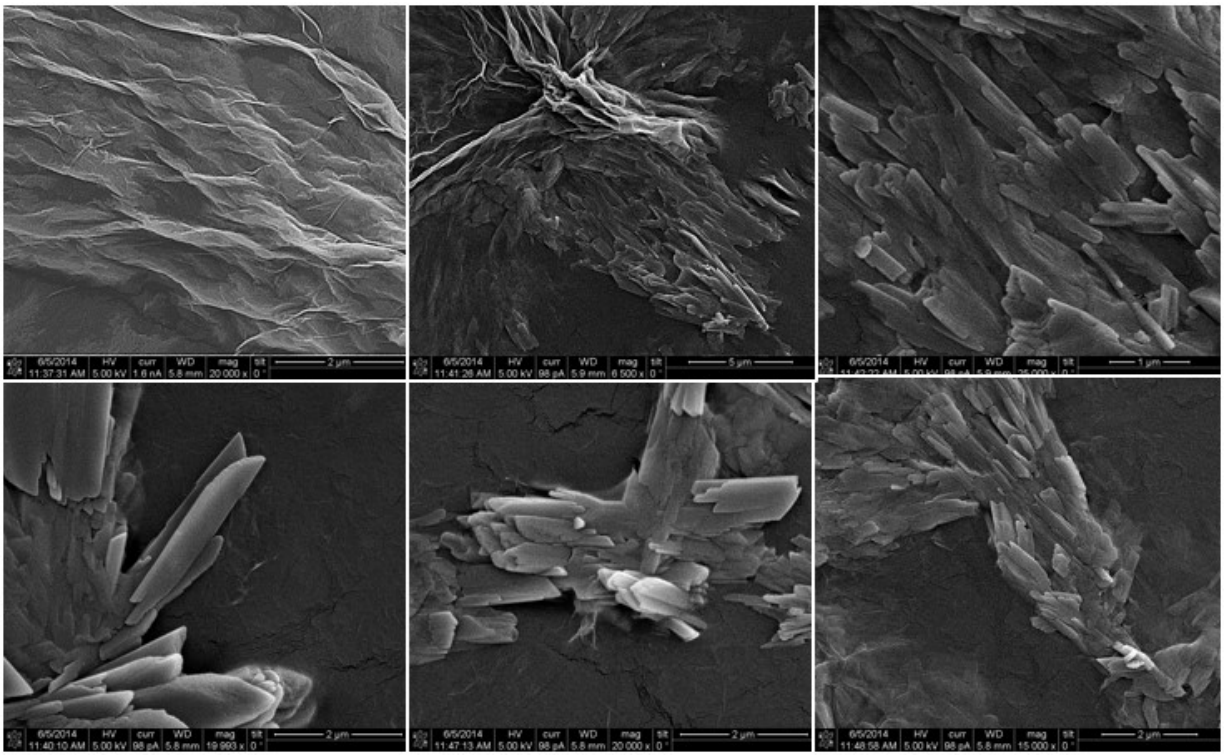

Figure SI-2a. SEM images of GO. The structure of GO ranged from thin, stacked sheets to thick, plate-like particles presumably formed upon drying the aqueous sample.

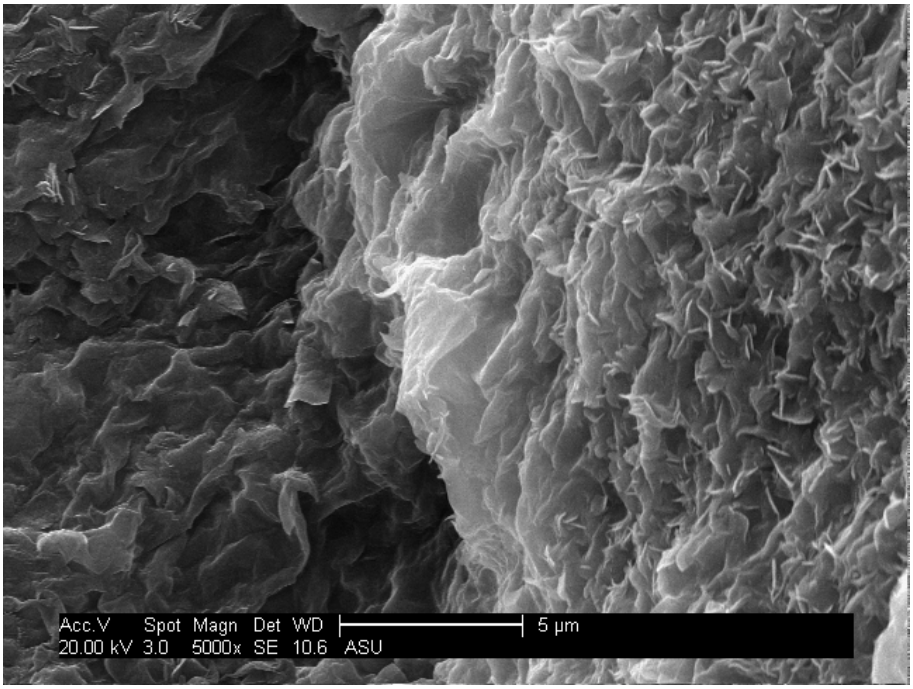


Figure SI-2b. SEM image of RGO.

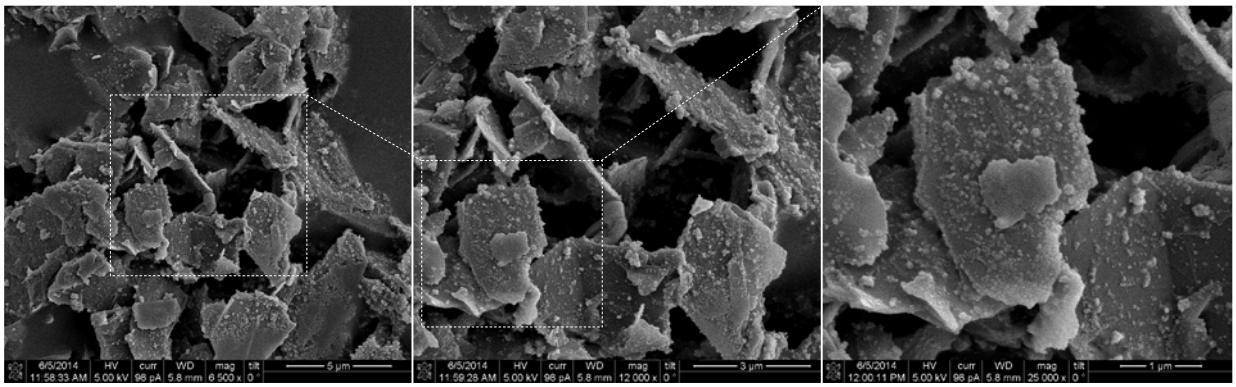

Figure SI-2c. SEM images of FLG. Nanoparticles on surface are from gold sputtering.

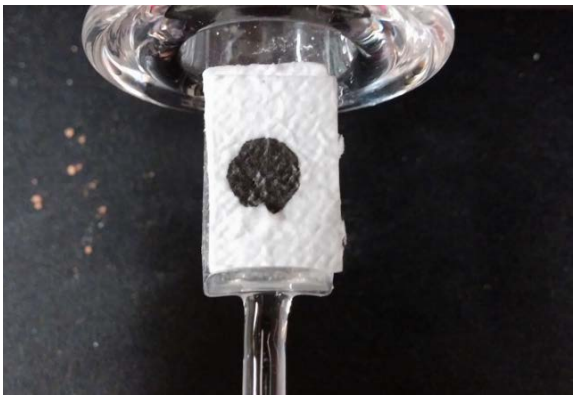

Figure SI-3. Image showing graphene sample loaded on a QFF.

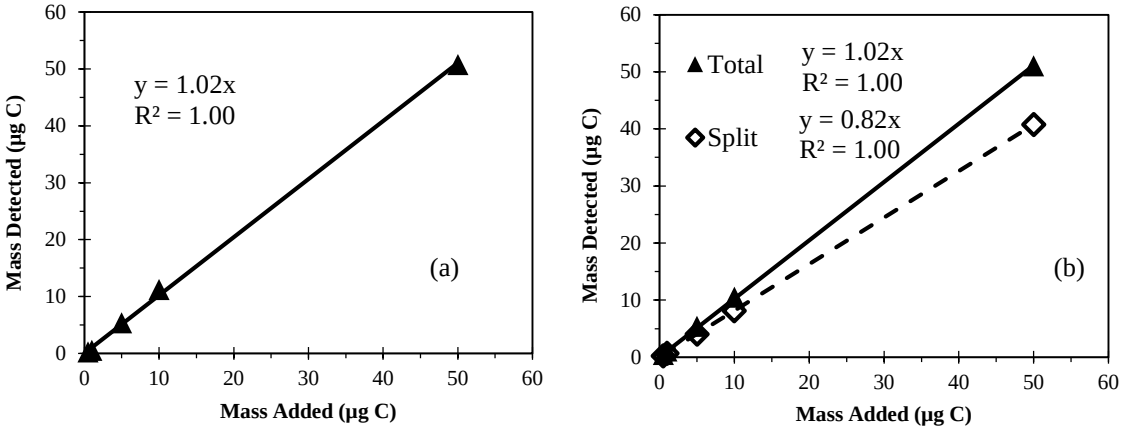


Figure SI-4. Instrument calibration curves for (a) FLG and (b) GO (using two splits). The "Split" values in (b) represent the loss that occurs if accounting only for the carbon evolving during the oxidizing phase.

Figure SI-5. Image showing an example of poor RGO pellet formation in water after centrifugation. 2% $NaBH_4$ was used for the reduction.

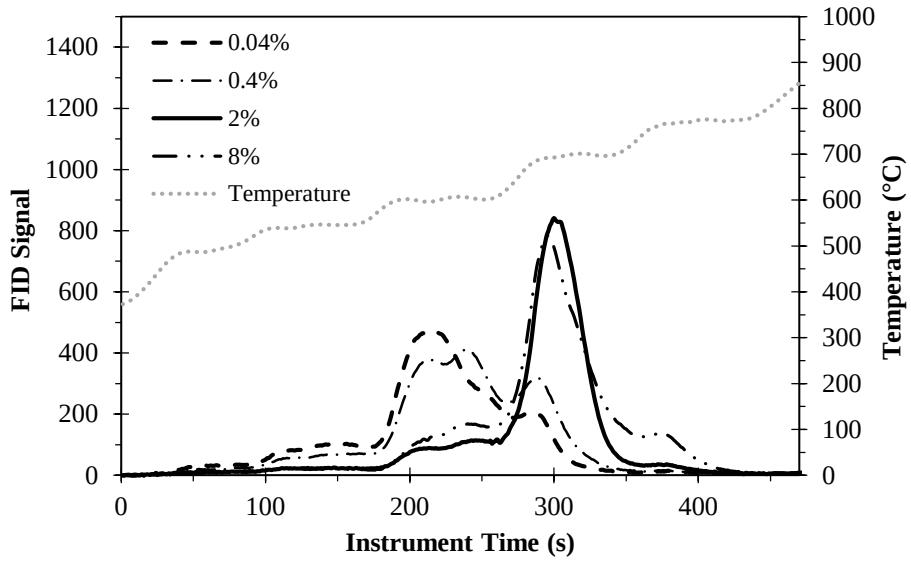


Figure SI-6. PTA thermograms for RGO reduced with different $NaBH_4$ concentrations in Solvable. Only the oxidizing phase is shown.

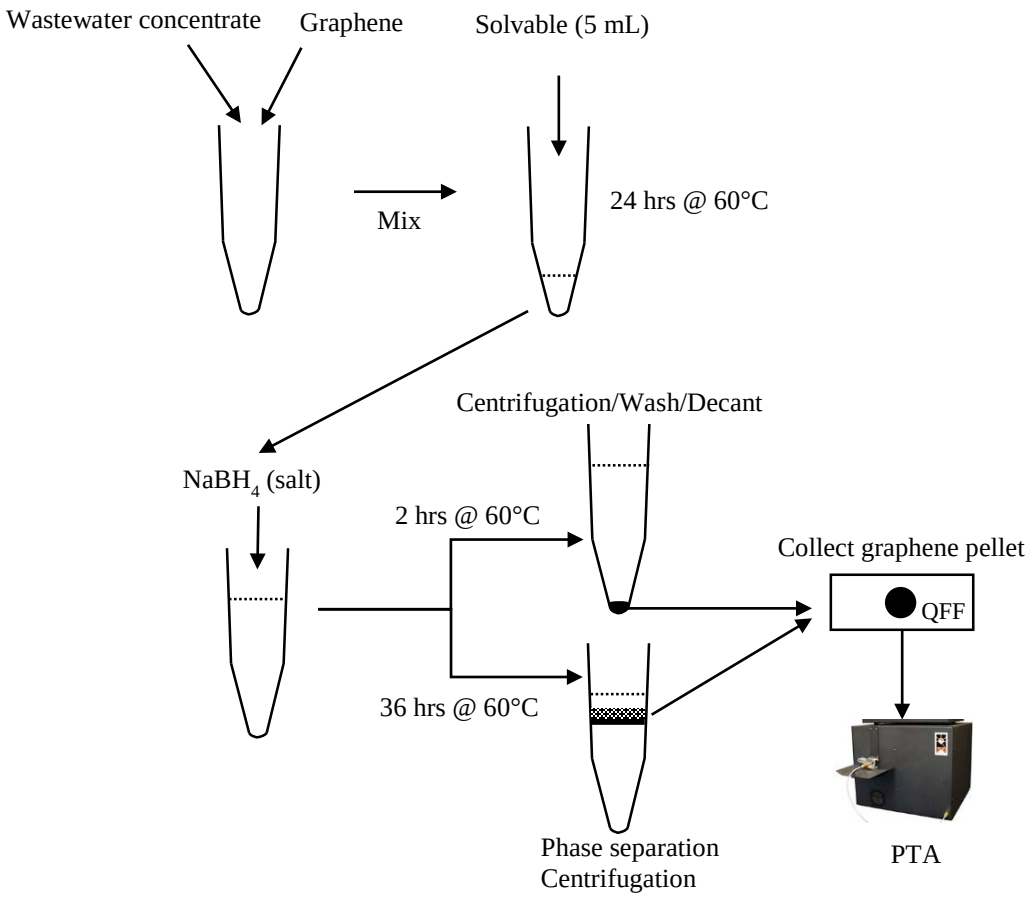


Figure SI-6. Schematic showing the centrifugal and phase separation methods for recovery GO from wastewater.

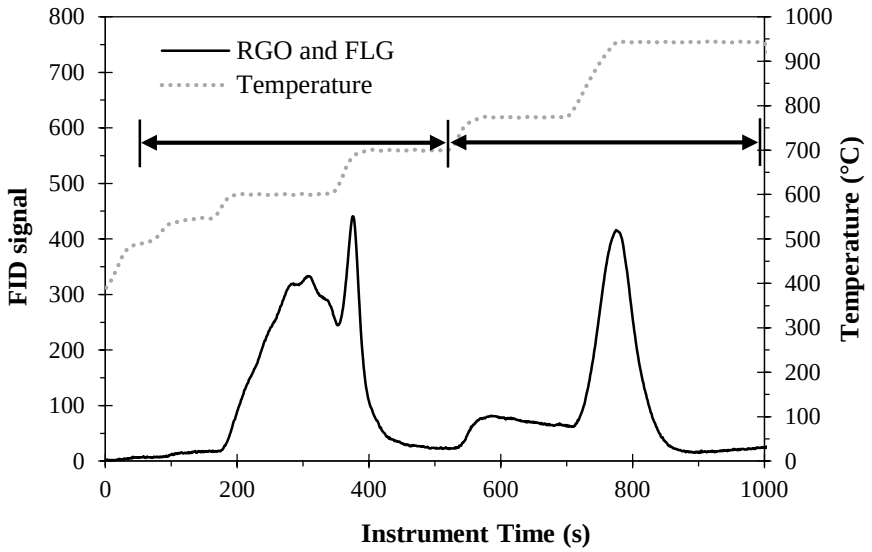


Figure SI-7. PTA thermogram for a mixed sample of GO/RGO and FLG after *in-situ* extraction from a clean matrix (i.e., water, no biomass). GO/RGO was quantified from 500–700°C and FLG was quantified from 700–950°C resulting in recoveries of 85% and 66%, respectively.