Supporting Information

The influence of oxidative debris on fragmentation and laser desorption/ionization process of graphene oxide derivatives

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Supporting figure

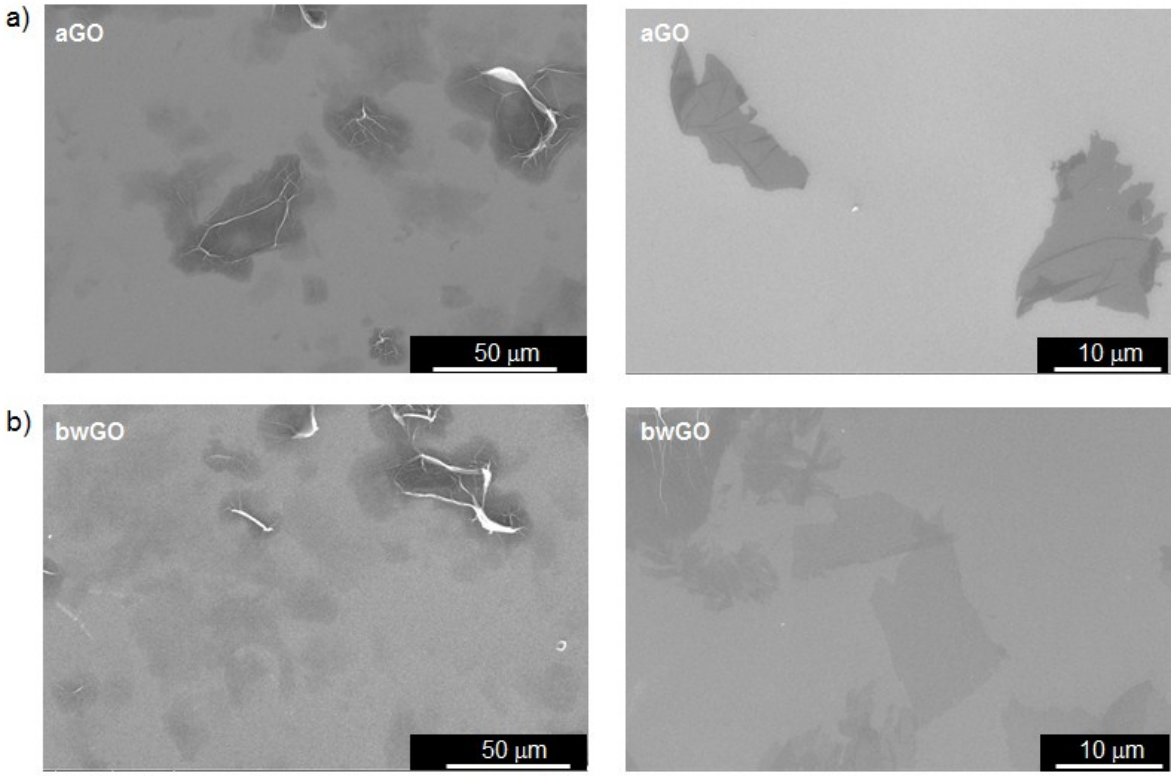

Figure S1. SEM images (different magnification) of aGO (a) and bwGO (b).

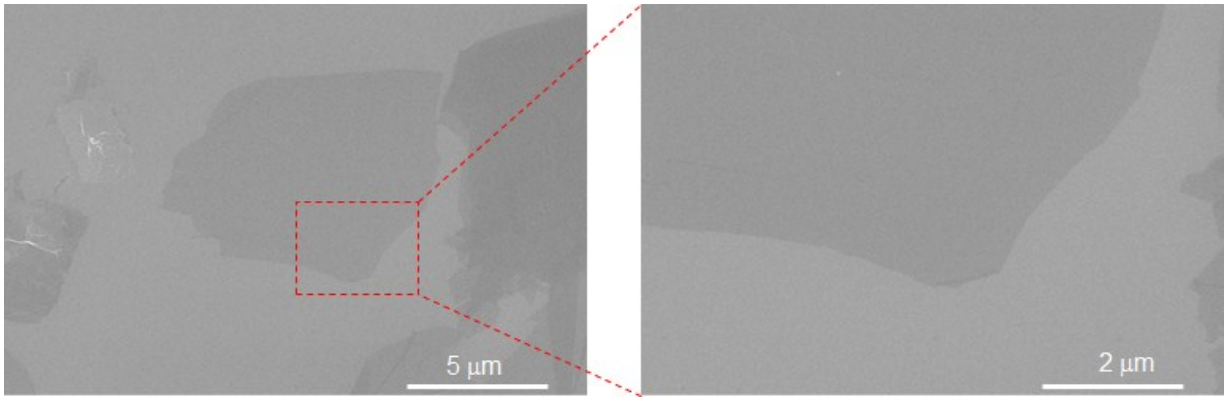

Figure S2. SEM images (different magnification) of bwGO which shows their edge structures.

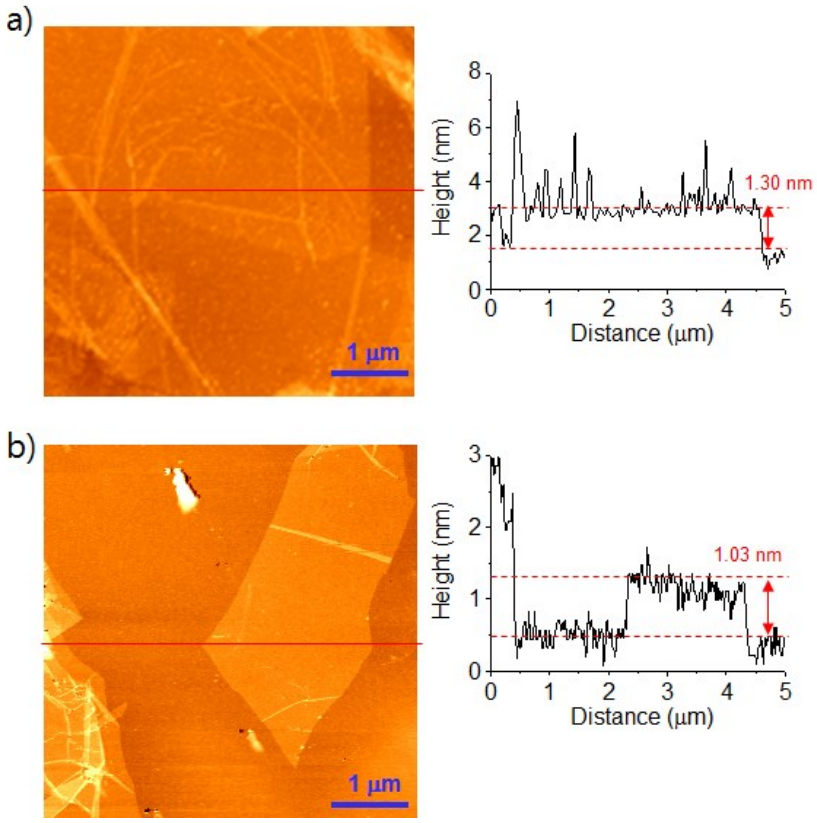

Figure S3. AFM images and line profiles of aGO (a) and bwGO (b) which confirm that both aGO and bwGO were exfoliated into single-layer.

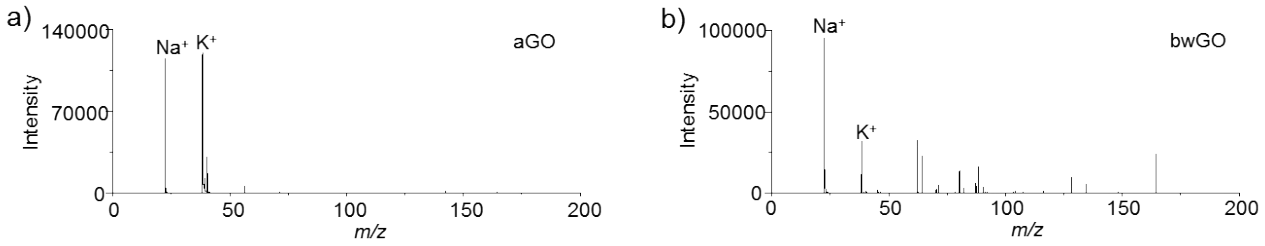

Figure S4. Mass spectra of aGO (a) and bwGO (b). We are unable to clearly assign the mass peaks detected under positive ionization mode because of the interference from cationic adducts.

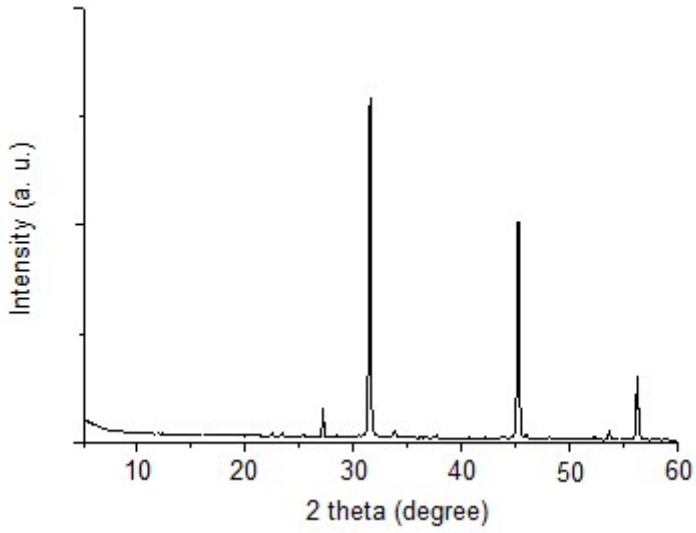

Figure S5. XRD pattern of OD.

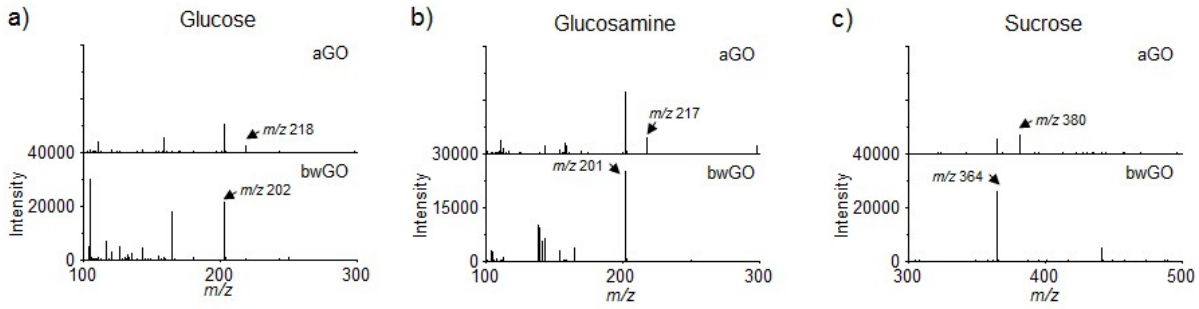

Figure S6. Mass spectra obtained from 1 nmol of glucose (a), glucosamine (b) and sucrose (c) with aGO and bwGO. The molecules were successfully detected with aGO and bwGO (Glucose: *m/z* 202 $[M+Na]^+$ and *m/z* 218 $[M+K]^+$, glucosamine: *m/z* 201 $[M+Na]^+$ and *m/z* 217 [M+K]+, sucrose: *m/z* 364 $[M+Na]^+$ and *m/z* 380 $[M+K]^+$). Interestingly, bwGO showed higher LDI efficiency and less formation of cationic adducts than aGO.