Supplementary Materials

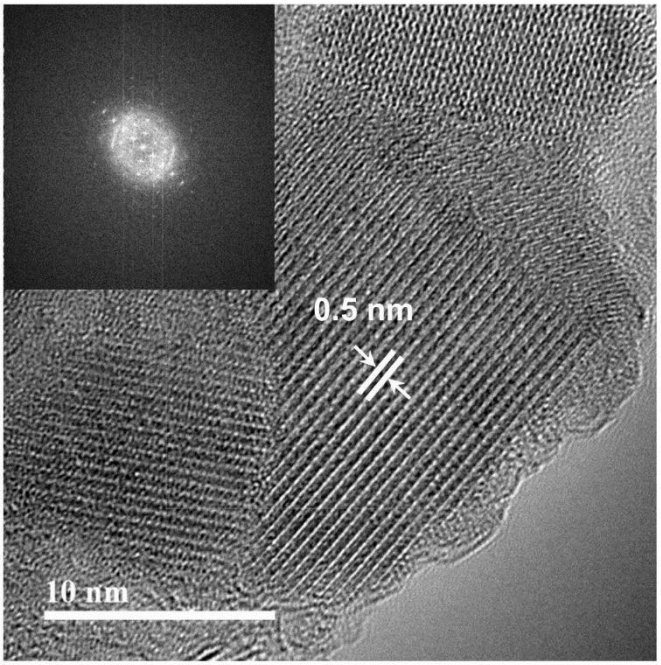


Figure S1. TEM image showing nominal presence of K^+-intercalated MnO_x on the surface of the rGOs. The lattice spacing corresponds to (200) plane of $K_xMn_8O_{16}$.

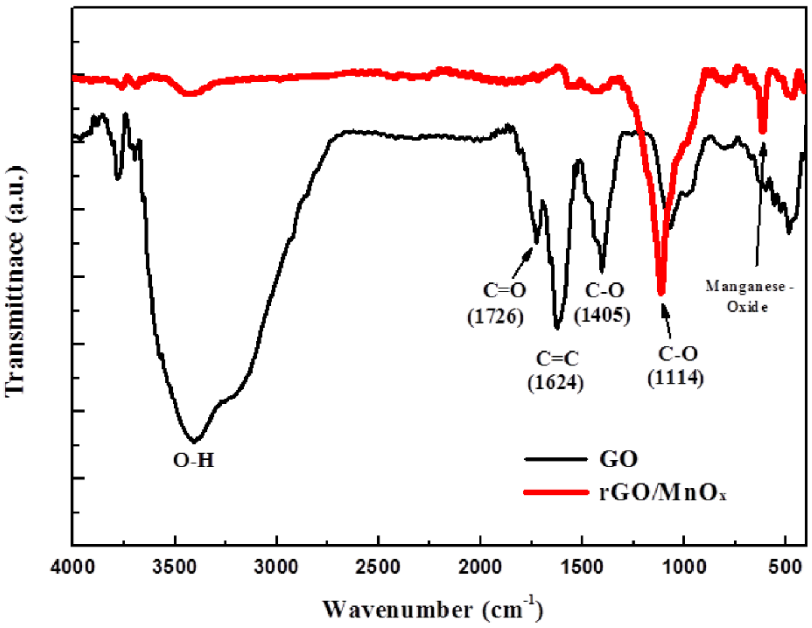


Figure S2. FT-IR spectra of the GO and the MnO_x/rGO composites.

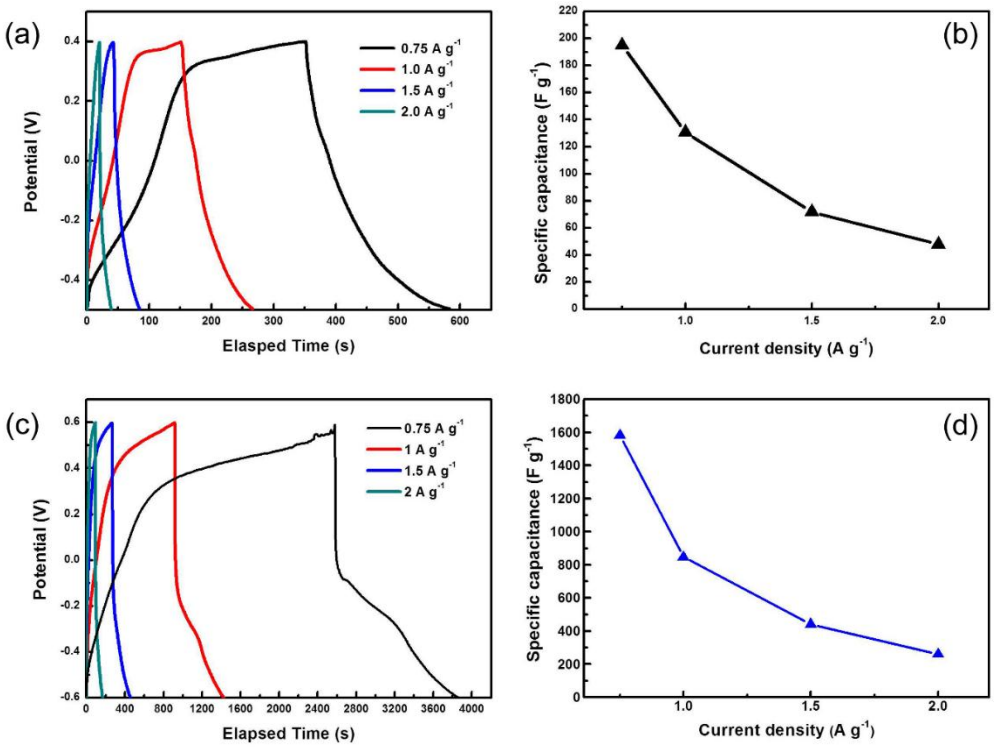


Figure S3. (**a**) GCD curves of GM_{400}; (**b**) specific capacitance variation of GM_{400} according to the change of current density; (**c**) GCD curves of GM_{600}; (**d**) specific capacitance variation of GM_{600} according to the change of current density.

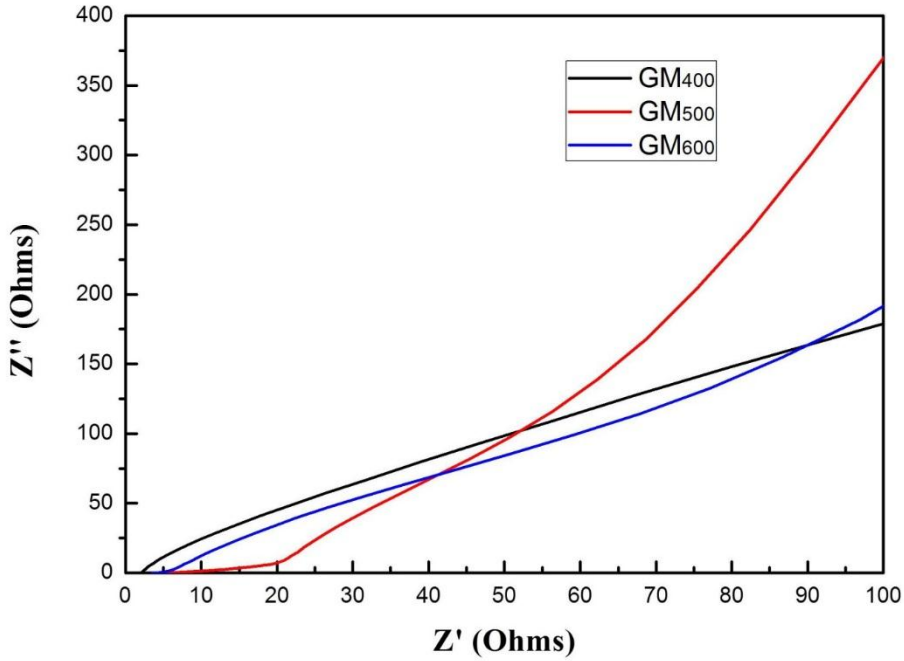
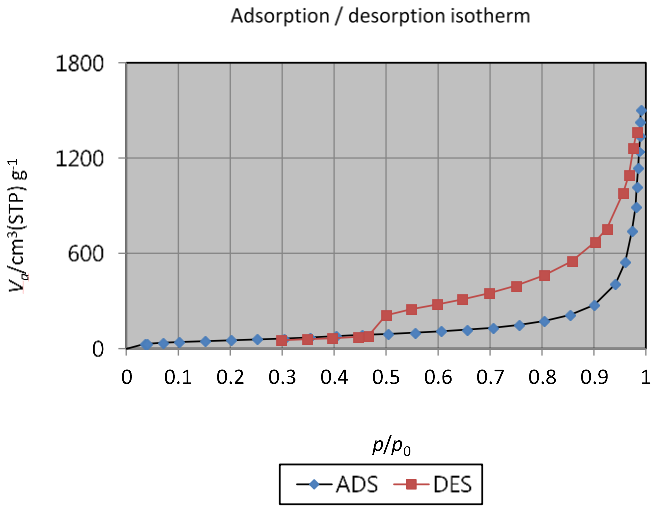


Figure S4. Electrochemical impedance spectroscopy (EIS) plots of GM_{400}, GM_{500}, and GM_{600}.



Vm		48.429 [cm³(STP) g⁻¹]
$a_{s,BET}$		**210.79 [m² g⁻¹]**
C		29.529
Total pore volume(p/p_0=0.990)		2.2973 [cm³ g⁻¹]
Average pore diameter		43.595 [nm]

Figure S5. BET surface area analysis of the GM_{500}.

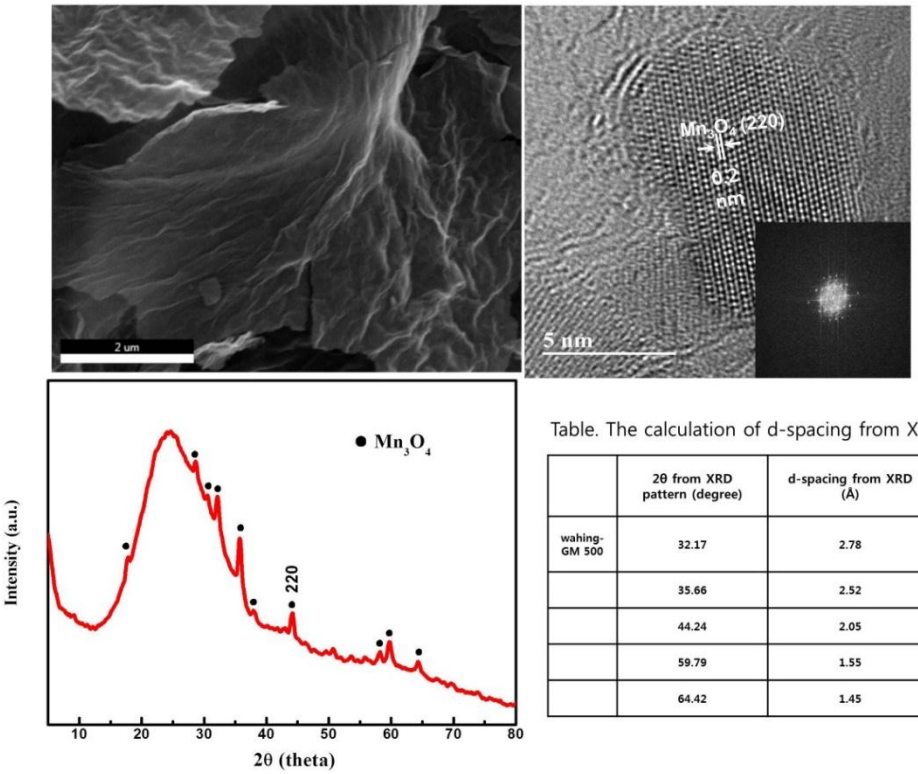


Table. The calculation of d-spacing from XRD pattern of w-GM500

	2θ from XRD pattern (degree)	d-spacing from XRD (Å)	d (nm)	from XRD card
wahing-GM 500	32.17	2.78	0.28	(103) Mn3O4
	35.66	2.52	0.25	(211) Mn3O4
	44.24	2.05	0.20	(220) Mn3O4
	59.79	1.55	0.16	(224) Mn3O4
	64.42	1.45	0.15	(314)Mn3O4

Figure S6. K^+-free GM_{500} prepared from repetitive washing. (**a**) SEM; (**b**) TEM; (**c**) XRD data shows that the washed GM_{500} is composed of Mn_3O_4 single phase.