Electronic Supplementary Material (ESI) for Physical Chemistry Chemical Physics.

Supporting Information

Electrochemical Properties of Thermally Expanded Magnetic Graphene Composite with Conductive Polymer

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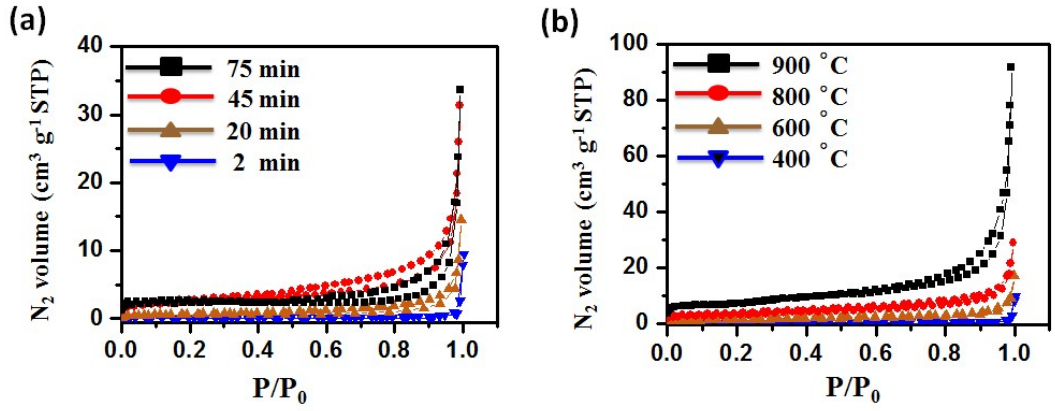


Figure S1. Adsorption/desorption N_2 isotherms of magnetic graphene. (a) Treated for 2, 20, 45 and 75 min at 400 ^{O}C . (b) Treated for 2 min at 400, 600, 800 and 900 ^{O}C.

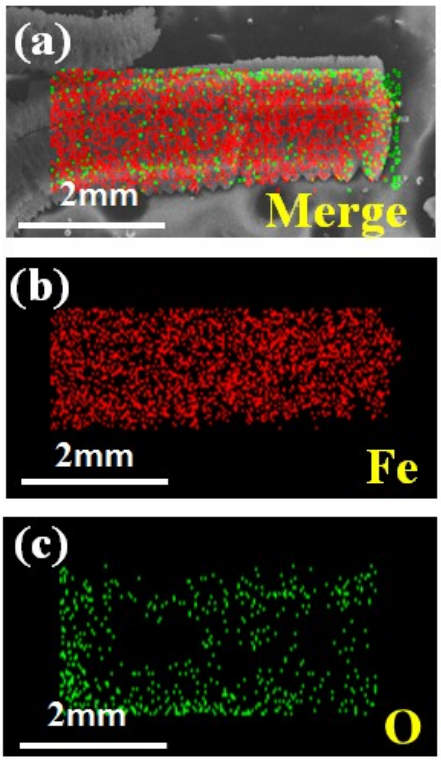


Figure S2. Distribution maps of Fe and O atoms on a piece of magnetic graphene treated for 2 min at 900 ^{O}C. (a) Merge, (b) Fe, and (c) O.

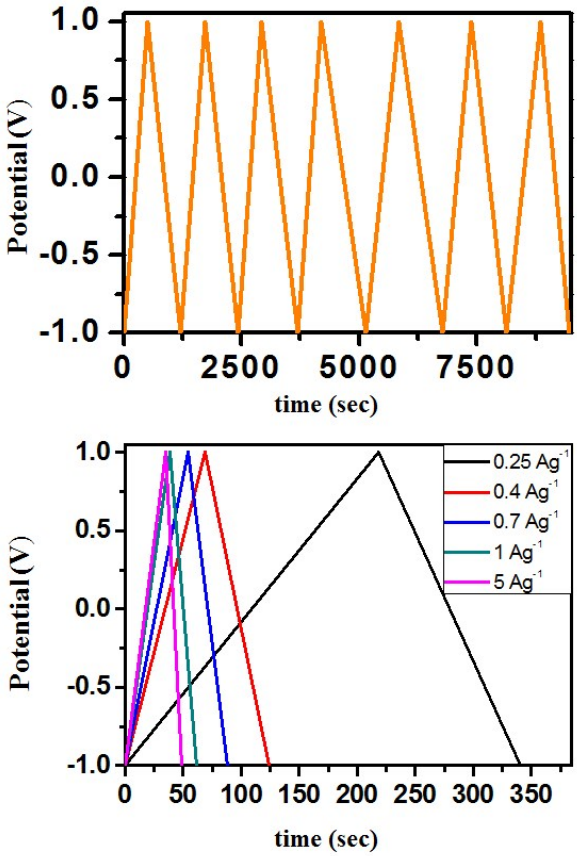


Figure S3. Charge-discharge curves for magnetic graphene treated for 75 min at 400 °C. (a) At current density of 0.1 Ag^{-1}. (b) At different current densities from 0.25 Ag^{-1} to 5 Ag^{-1}.

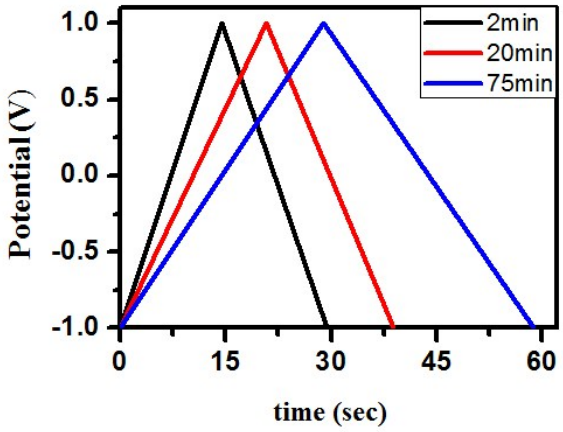


Figure S4. Charge-discharge curves at current density of 1.0 Ag^{-1} for magnetic graphene treated for 2, 20 and 75 min at 400 ^{O}C .

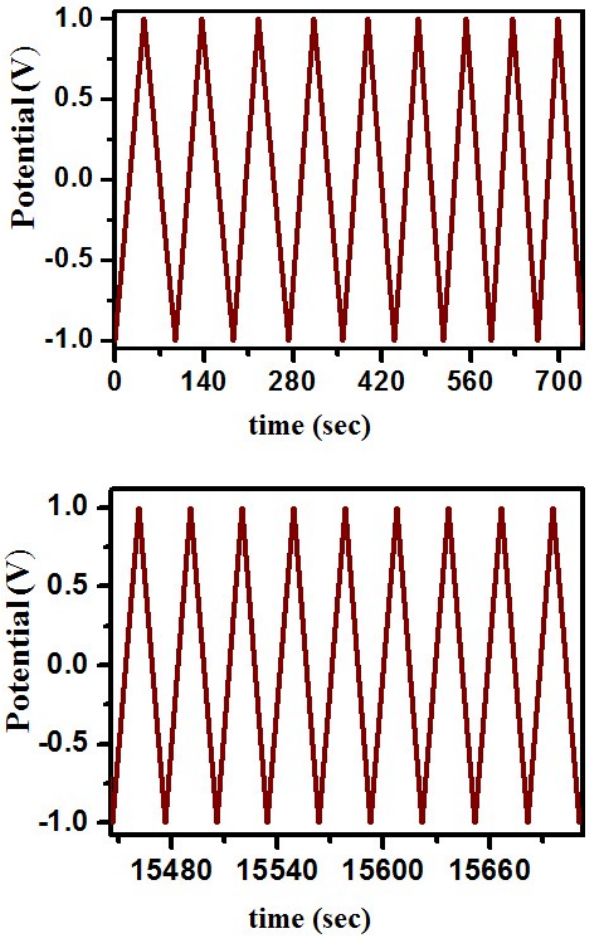


Figure S5. Charge-discharge curves for magnetic graphene treated for 2 min at 800 ^{O}C at current density of 1.0 Ag^{-1}. (a) First and (b) the last 9 cycles in total 700 cycles.

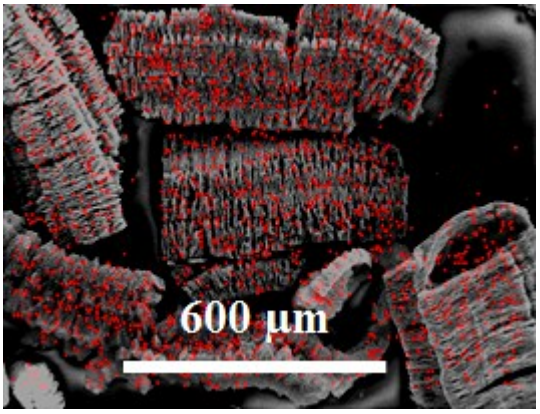
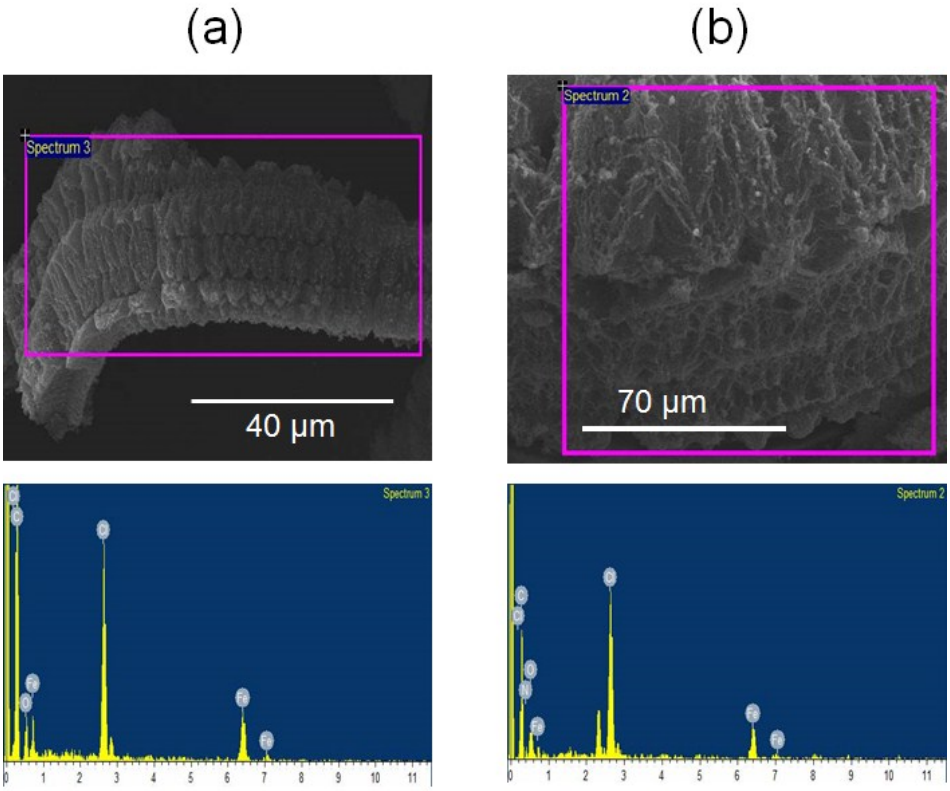


Figure S6. A distribution map of Fe on pieces of magnetic graphene/PANI composite.



Element	Weight %	Atomic %
C	69.95	85.56
N	0.00	0.00
O	7.69	7.06
Cl	9.95	4.12
Fe	12.42	3.27
Totals	100.00	

Element	Wright %	Atomic %
C	53.22	71.19
N	8.07	9.26
O	8.37	8.41
Cl	14.65	6.64
Fe	15.68	4.51
Totals	100.00	

Figure S7. Focused ion beam images and elemental analyses of EDX. (a) Magnetic graphene treated for 2 min at 900 °C. (b) Magnetic graphene/PANI composite.