

Supplementary Information

Table S1. BET surface area, total pore volume and mean pore diameter of RGO, FeMnO_x and FeMnO_x/RGO.

<i>Adsorbent</i>	<i>Mass ratios of FeMnO_x</i>	<i>Surface area (S_{BET} ($m^2 g^{-1}$))</i>	<i>Total pore volume V_p ($cm^3 g^{-1}$)</i>	<i>Mean pore diameter (nm)</i>
RGO	0%	548	0.54	5.83
FeMnO _x	100%	360	0.45	4.97
FeMnO _x /RGO	14%	452	-	-
FeMnO _x /RGO	45%	411	0.59	5.62
FeMnO _x /RGO	76.5%	380	-	-

Table S2. pH values of arsenic solution before and after arsenic removal onto FeMnO_x/RGO.

<i>As(III) pH</i>	<i>before</i>	<i>3.10</i>	<i>5.10</i>	<i>6.91</i>	<i>8.92</i>	<i>10.91</i>
	<i>after</i>	<i>4.00</i>	<i>6.69</i>	<i>7.08</i>	<i>7.25</i>	<i>9.40</i>
<i>As(V) pH</i>	<i>before</i>	<i>3.10</i>	<i>4.94</i>	<i>7.17</i>	<i>8.94</i>	<i>11.06</i>
	<i>after</i>	<i>4.08</i>	<i>6.54</i>	<i>7.23</i>	<i>7.40</i>	<i>10.10</i>

Table S3. Langmuir isotherm parameters for As (III) and As(V) adsorption by FeO_x/RGO and MnO_x/RGO.

<i>Adsorbent</i>	<i>Arsenic</i>	<i>Langmuir model</i>		
		b(L/mg)	q _m (mg/g)	R ²
FeO _x /RGO	As(III)	1.44	5.96	0.9491
	As(V)	1.09	12.14	0.9320
MnO _x /RGO	As(III)	1.87	2.95	0.9874
	As(V)	1.84	3.41	0.9936

Figure S1. Nitrogen adsorption and desorption isotherms of FeMnO_x.

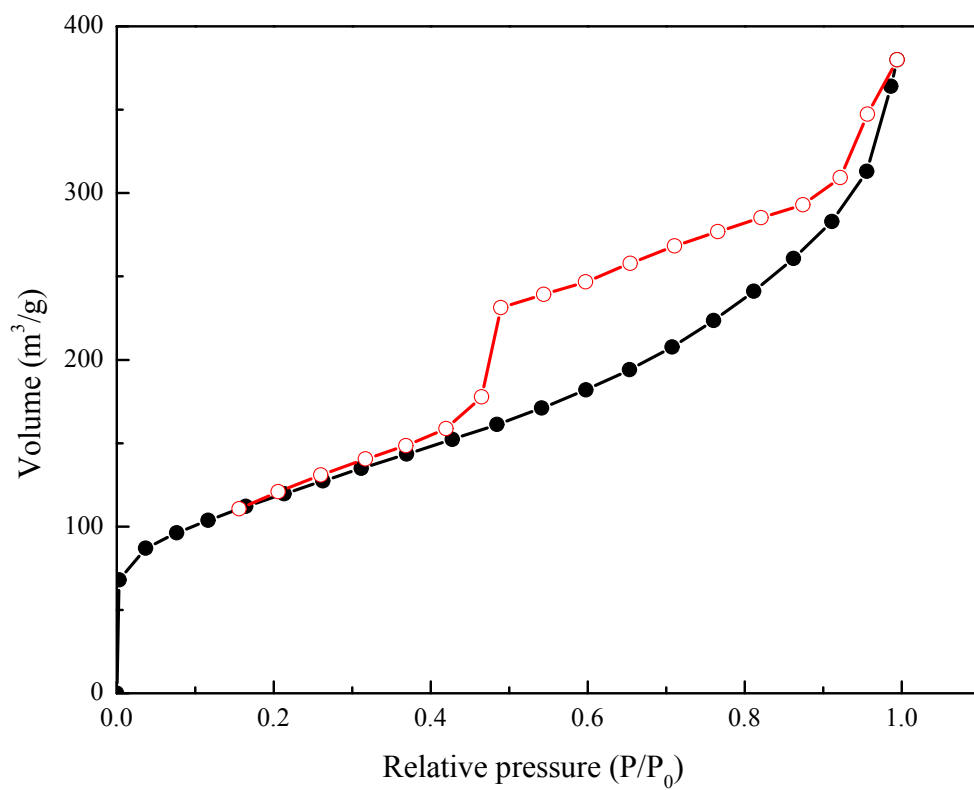


Figure S2. XRD patterns of (a) RGO, (b) FeMnO_x and (c) FeMnO_x/RGO.

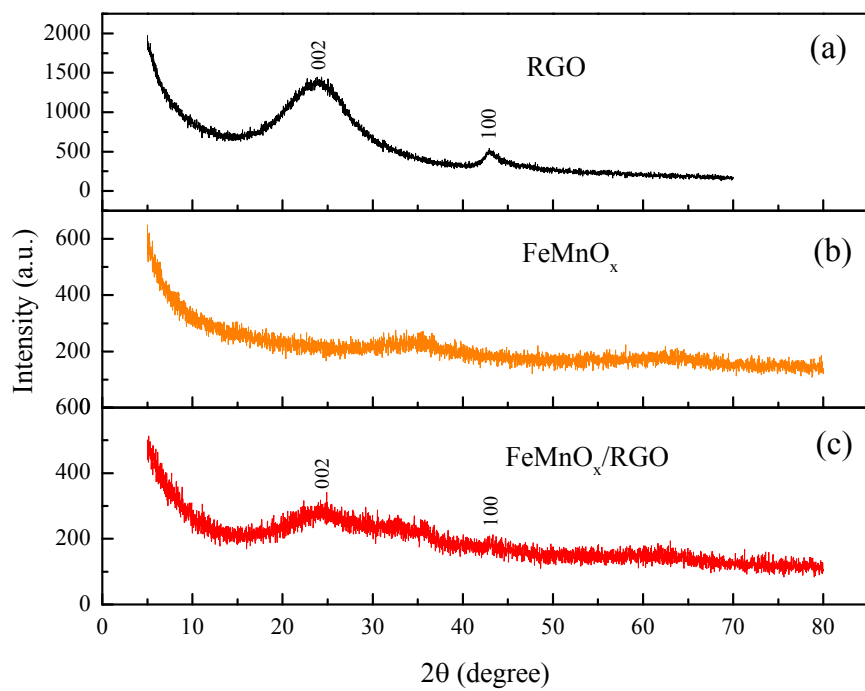


Figure S3. FTIR spectrums of RGO, FeMnO_x and FeMnO_x/RGO in the range of wavenumber from 400 to 1900 cm⁻¹.

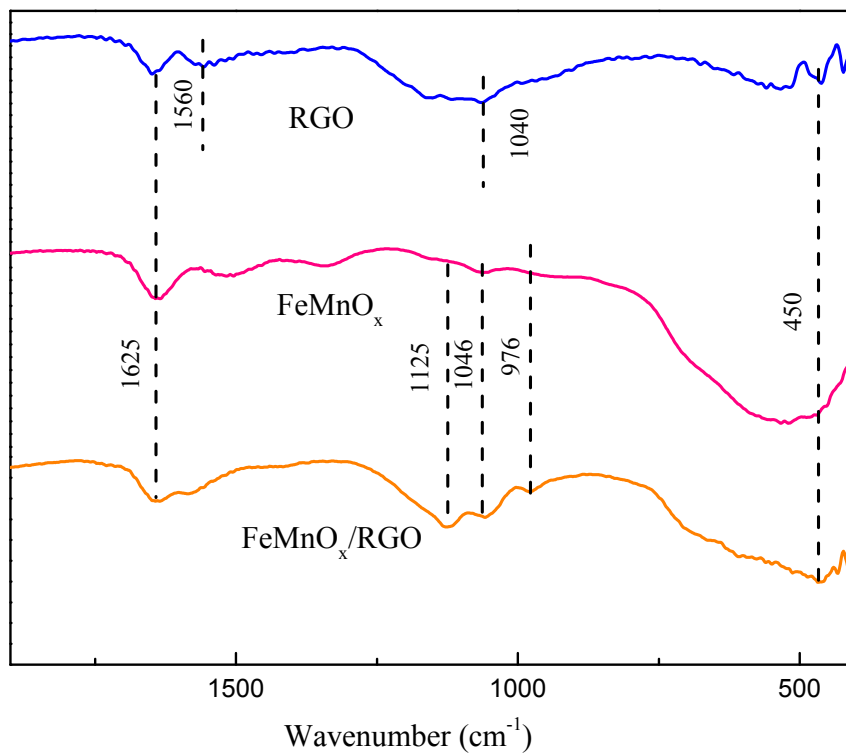
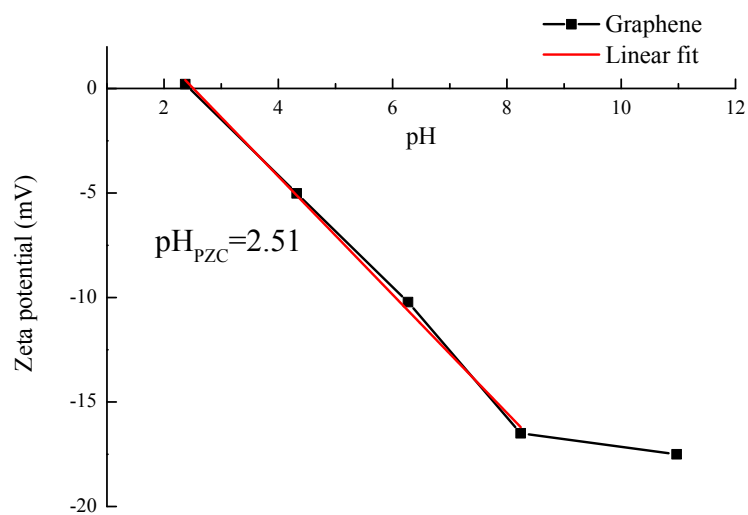
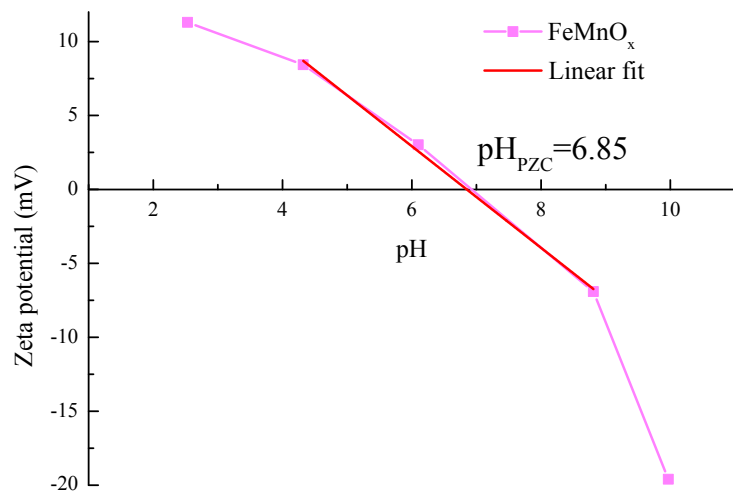


Figure S4. pH_{PZC} values of (a) RGO, (b) FeMnO_x and (c) $\text{FeMnO}_x/\text{RGO}$.

(a)



(b)



(c)

