Supplementary Information

Extraordinary thermal behavior of graphene oxide in air for electrode applications

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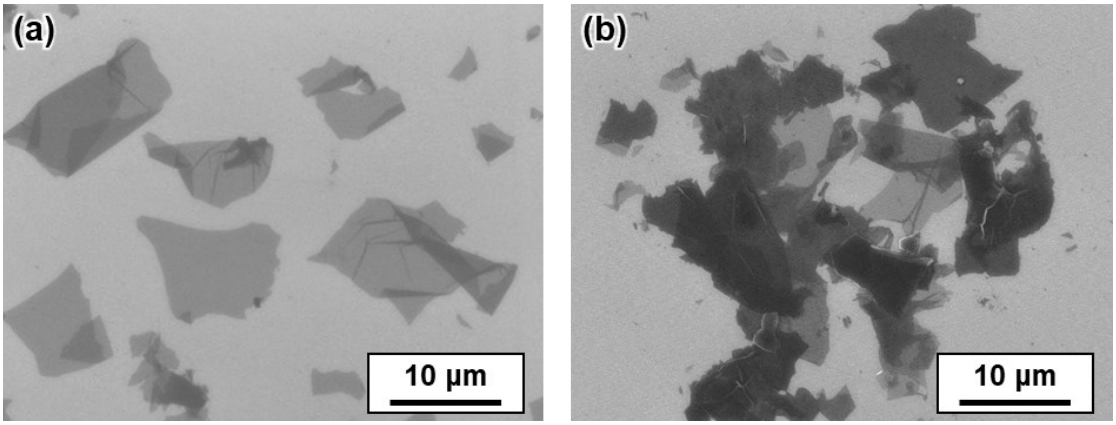

Figure S1. FE-SEM images of exfoliated GPO2 in (a) KOH and (b) NH_4OH by using homogenizer at 10000 rpm for 1 h.

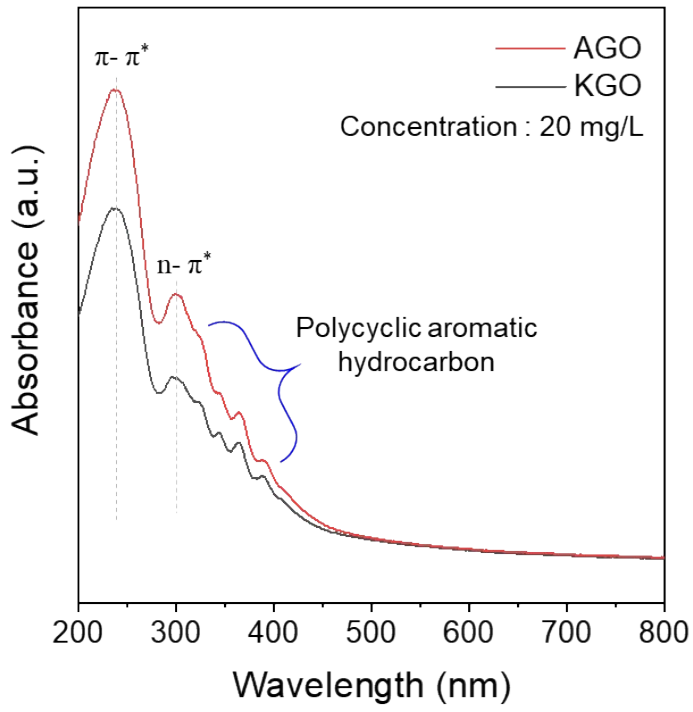

Figure S2. UV-Vis spectrum of AGO and KGO.

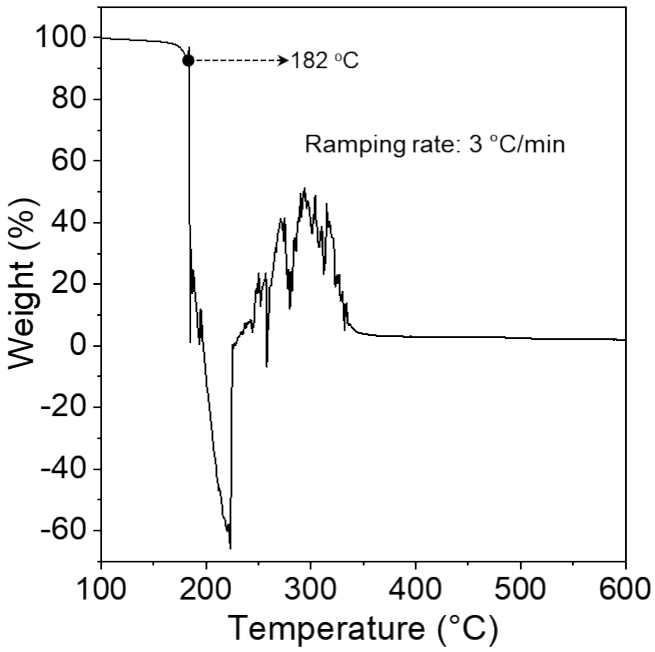

Figure S3. TGA thermogram of AGO at a ramping rate of 3°C/min.

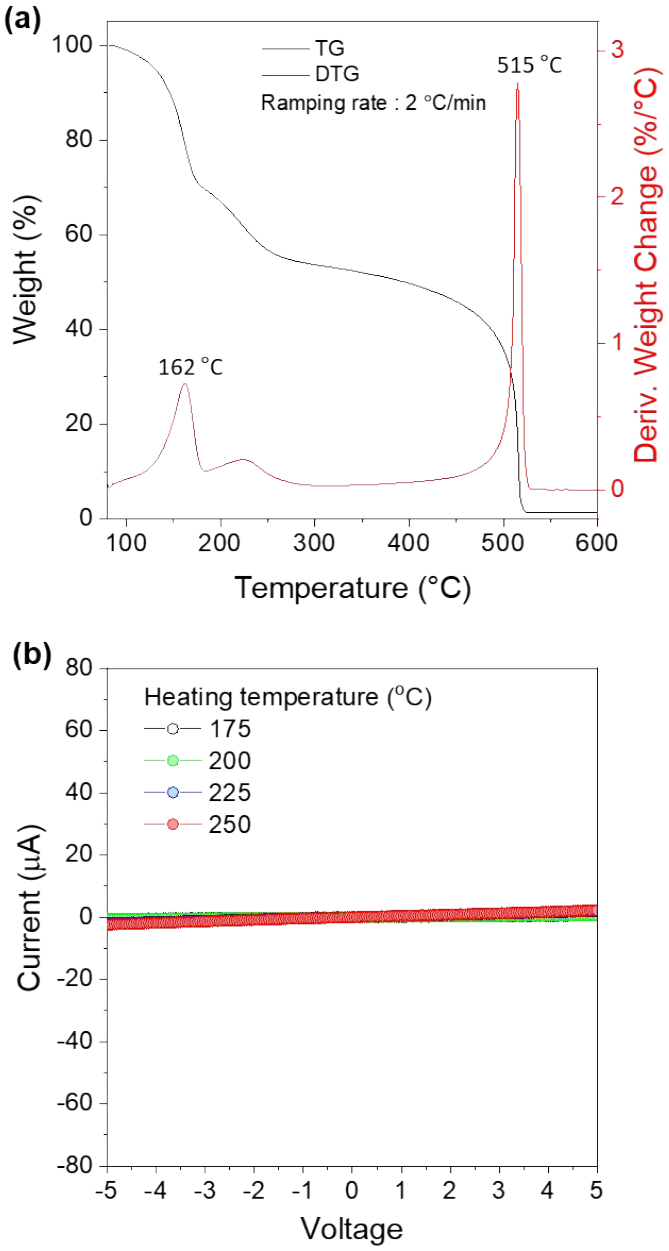

Figure S4. (a) TGA thermogram and of HGO synthesized by $KMnO_4$-based oxidation at ramping rate of 2 °C/min, (b) I-V plots of HGO films after thermal treatment in air for 1 h.

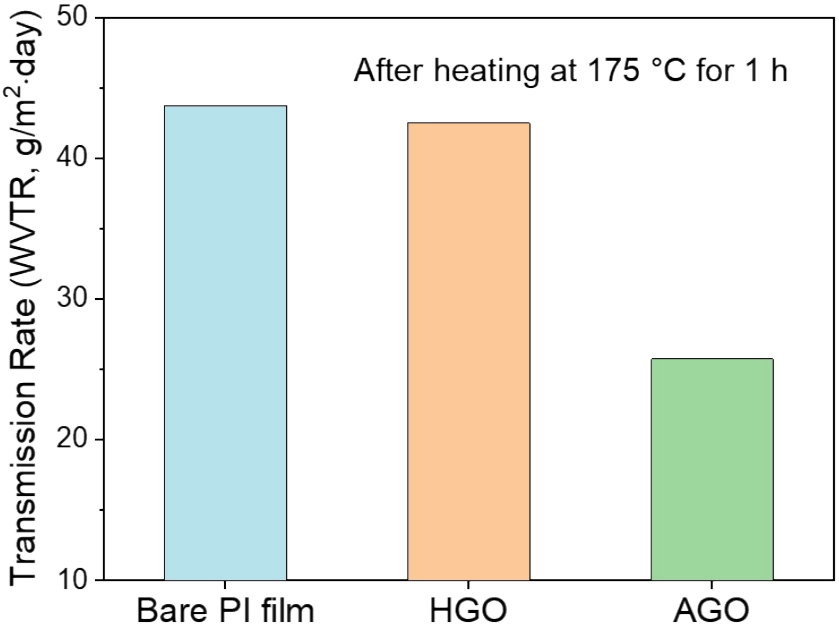

Figure S5. Water vapor transmission rate of bare PI film and PI films coated with HGO and AGO followed by thermal treatment at 175°C for 1h.