

Supplementary Materials: Facile Synthesis of Vanadium Oxide/Reduced Graphene Oxide Composite Catalysts for Enhanced Hydroxylation of Benzene to Phenol

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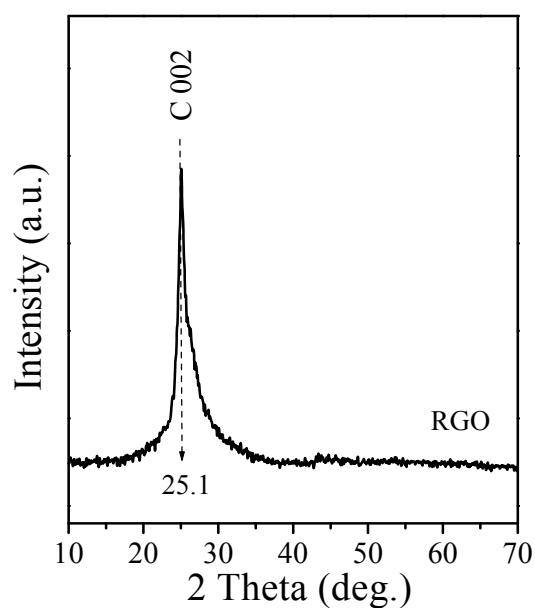


Figure S1. XRD patterns of the RGO reference sample.

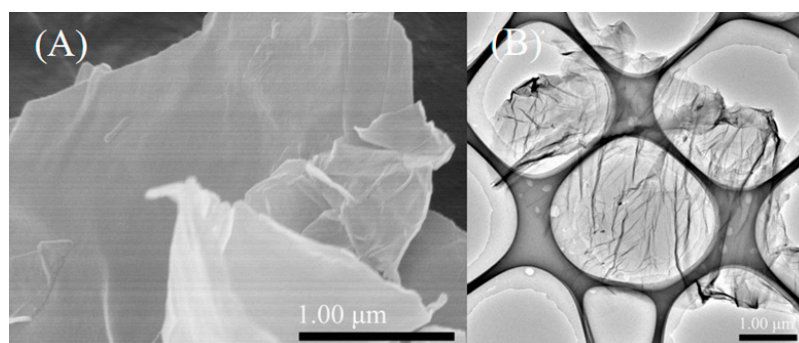


Figure S2. SEM (A) and TEM (B) images of the RGO reference sample.

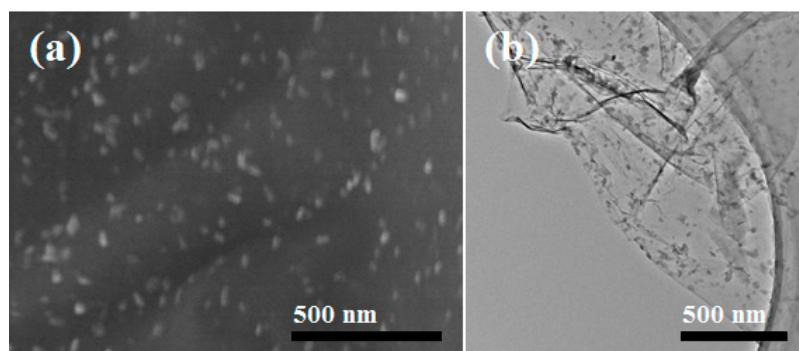


Figure S3. SEM (a) and TEM (b) images of as-synthesized VO_x/RGO composites (VG-as).

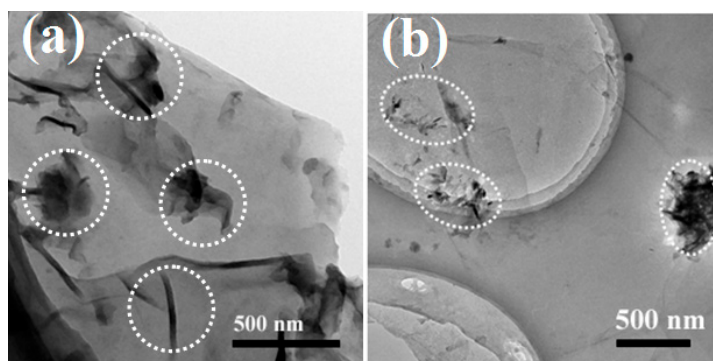


Figure S4. TEM images of (a) VO_x/RGO sample obtained in H₂O solution and (b) VO_x/RGO sample obtained without CTAB.

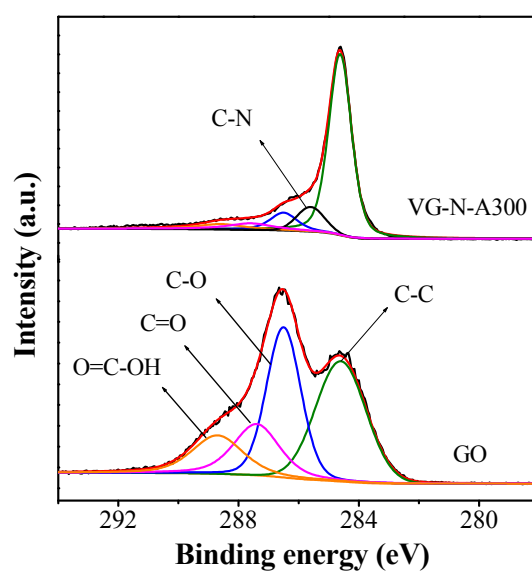


Figure S5. XPS spectra of C1s region for GO and VG-N-A300.

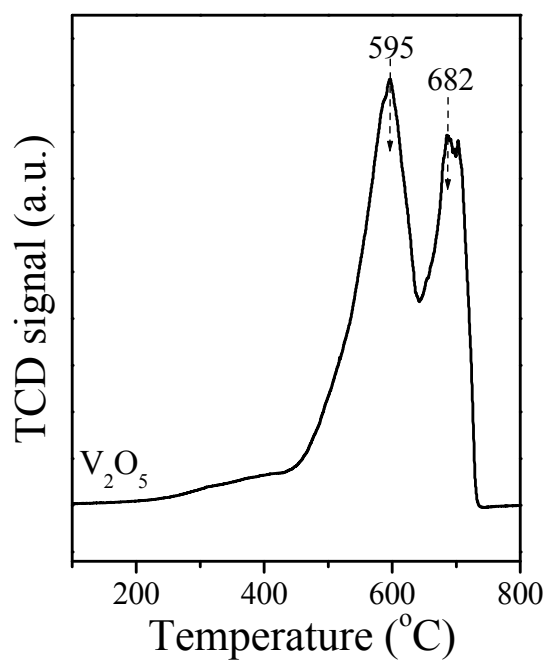


Figure S6. H₂-TPR profile of V₂O₅.

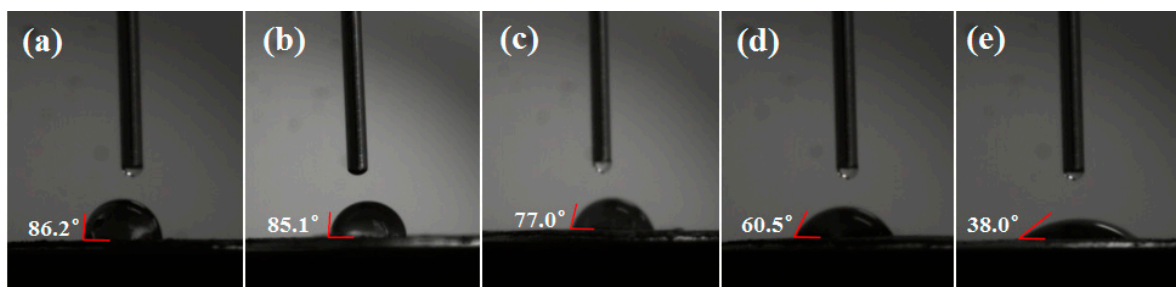


Figure S7. The static water contact angle pictures of (a) graphite; (b) RGO; (c) VG-N-A300; (d) VG-N-A350 and (e) VG-N-A400.

Table S1. The atomic concentrations of C, O, V and N, the peak area (A) ratios of carbon-containing bonds to total carbon area (A_T) and the distribution of surface V atoms according to XPS results.

Sample	Atomic Concentration (%)				A_{C-C}/A_T (%)	A_{C-O}/A_T (%)	A_{C-N}/A_T (%)	A_{O-C-OH}/A_T (%)	A_{C-N}/A_T (%)	Relative Atomic Percentage (%)	
	C	O	V	N						V^{5+}	V^{4+}
GO	68.8	31.2	-	-	36.4	32.8	16.8	14.0	-	-	-
VG-N-A300	79.3	16.0	3.2	1.5	69.6	8.8	6.4	5.3	9.9	84.4	15.6