

### Supporting Information

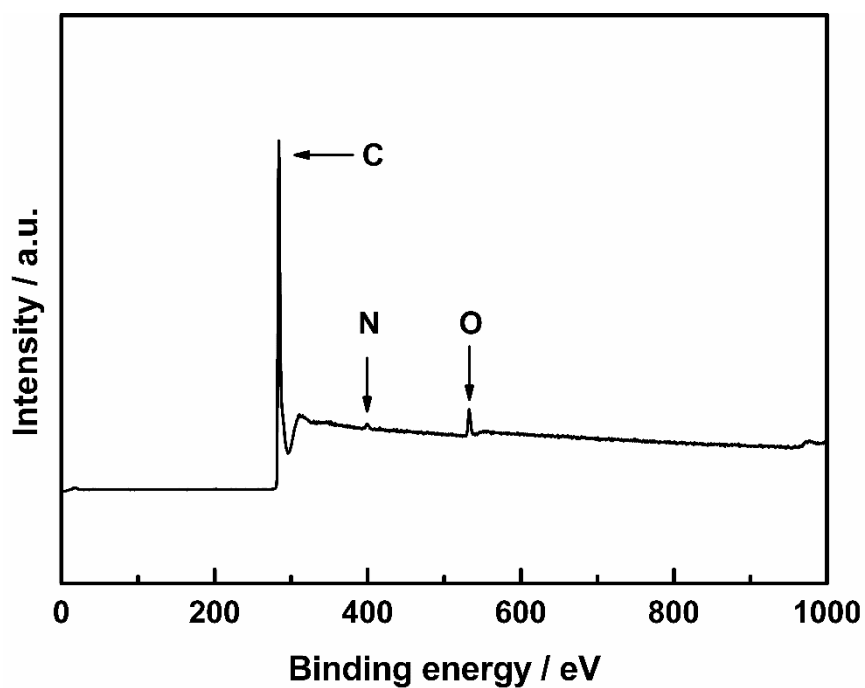


Fig. S1. XPS survey spectrum of N-N330

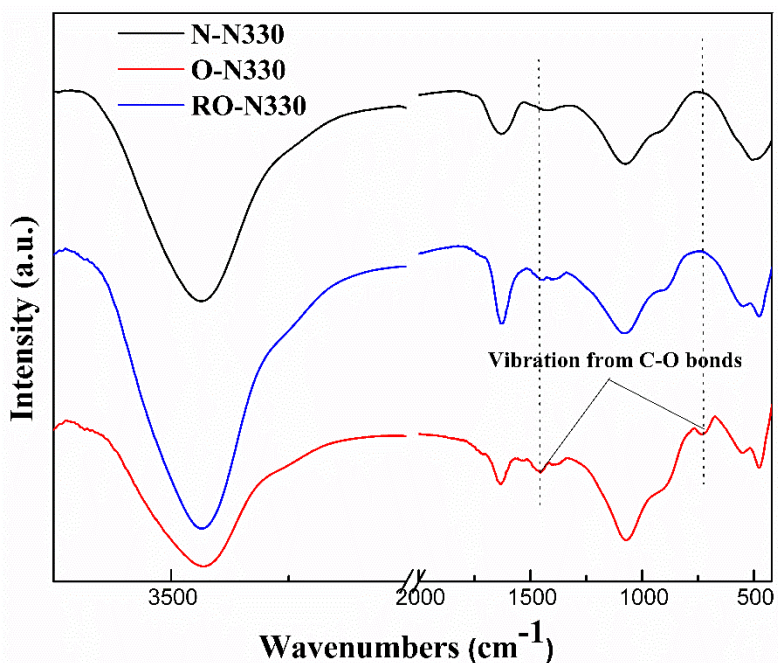


Fig. S2. FTIR spectra of as-prepared carbon blacks

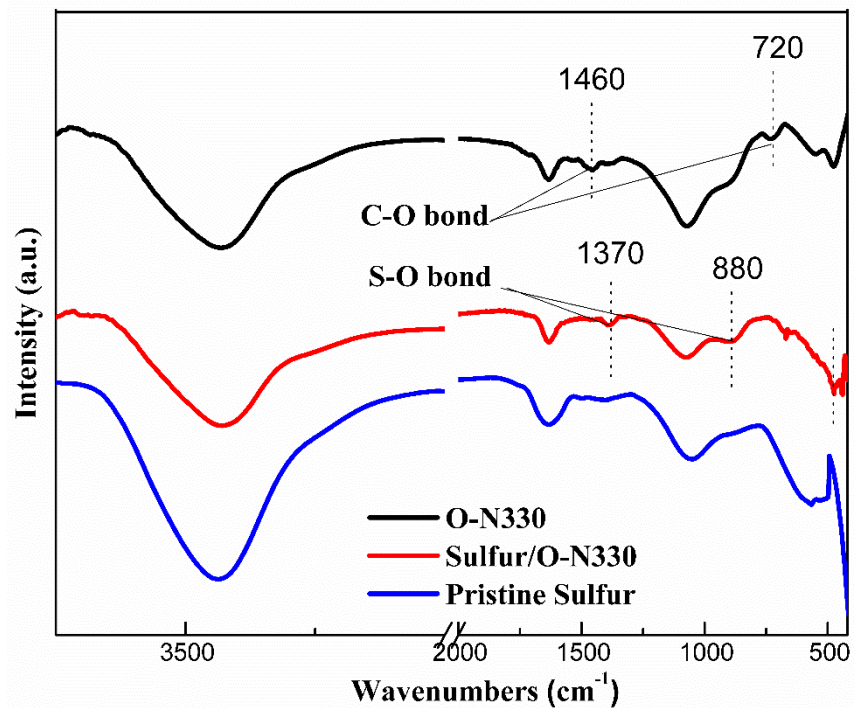


Fig. S3. FTIR spectra of O-N330, S/O-N330, and pristine sulfur

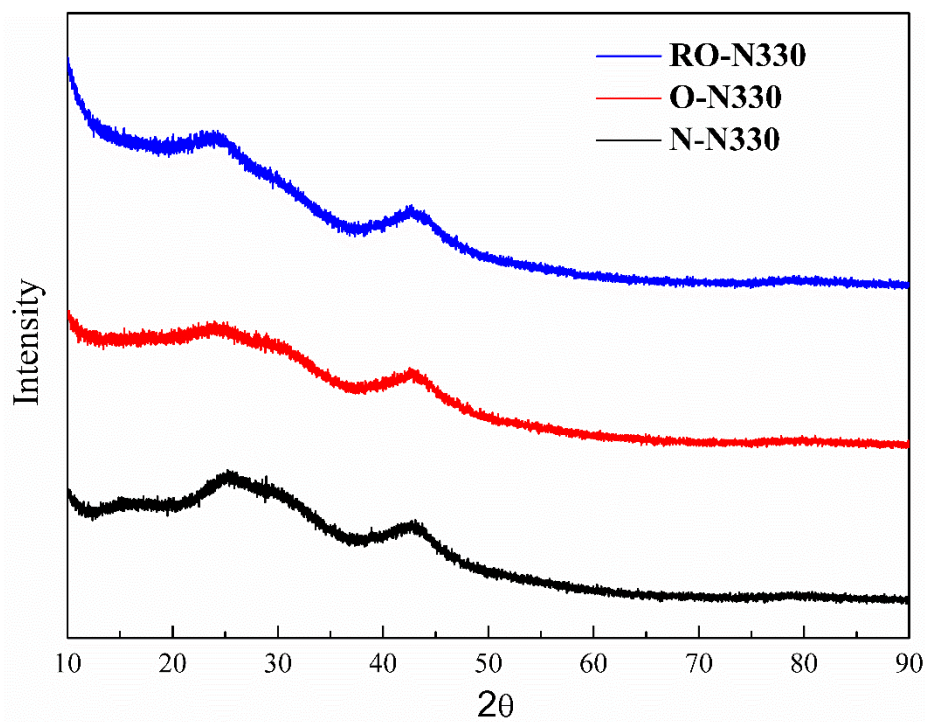


Fig. S4. XRD patterns of as-as prepared carbon blacks

Table S1. Surface information of carbon blacks treated by NH<sub>3</sub> with different mass loss

<b>Reaction time (min)</b>	<b>Mass loss (wt%)</b>	<b>Specific Surface area (m<sup>2</sup>/g)</b>	<b>Specific surface area for mesopores (m<sup>2</sup>/g)</b>
0	0	75.36	73.47
1	10	233.13	87.28
3	50	1053.49	650.54
5	75	1230.61	975.28
8	85	1358.27	1181.90