

## Supplementary Information:

### Mesoporous NiO single-crystalline utilized as noble metal free catalyst for non-aqueous Li-O<sub>2</sub> battery

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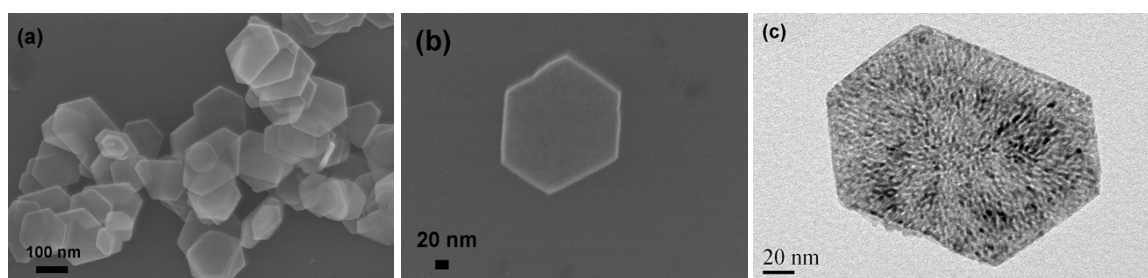
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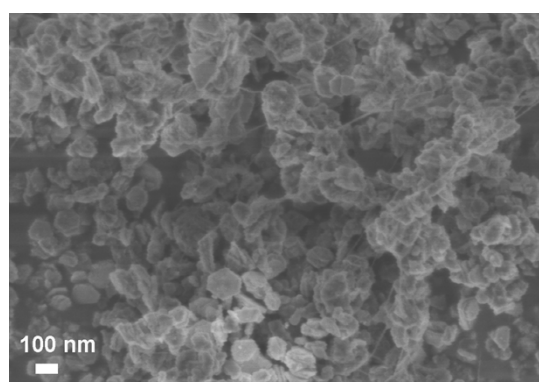
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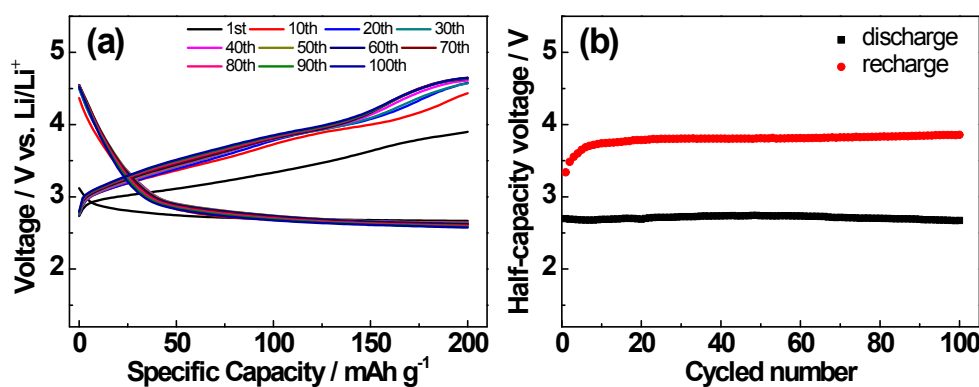
## Results



**Fig. S1** SEM (a and b) and TEM (c) images of as-prepared NiO.



**Fig. S2** SEM image of NiO/AB based electrode experienced discharge and recharge.



**Fig. S3** (a) The continuously cycled discharge-charge curves with cut-off capacity of 200 mAh·g<sup>-1</sup> of the non-aqueous Li-O<sub>2</sub> battery with NiO as the oxygen cathodic material, the current applied for discharge and charge was 100 mA·g<sup>-1</sup>; (b) the relation between the half-capacity voltage and the cycled times during the continuously cycled discharge-recharge performances.