

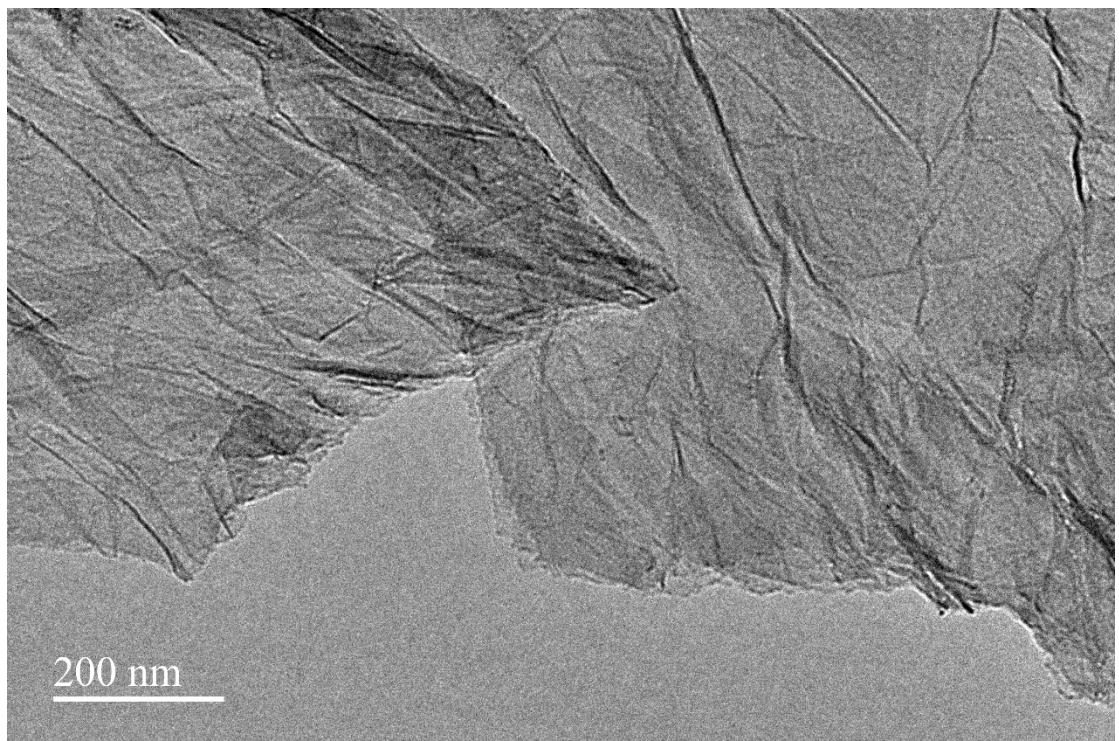
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## ***Supporting Information***

# **Flexible and free-standing reduced graphene oxide and polypyrrole coated air-laid paper-based supercapacitor electrodes**

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**Figure S1.** The transmission electron microscope (TEM) image of GO nanosheets.

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**Table S1.** The sheet resistance and the conductivity of PPy/air-laid paper.

Concentration of Py (g mL <sup>-1</sup> )	Sheet resistance ( $\Omega$ sq <sup>-1</sup> )	Conductivity (S m <sup>-1</sup> )
0.010	7.07	893.8
0.015	3.83	1652.0
0.020	4.99	1266.4
0.025	69.95	90.5

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**Table S2.** The comparison of areal energy density and power density of reported flexible supercapacitor and this work.

Sample	Electrode Materials	Electrolyte	Areal energy density	Reference
1	PPy-Paper	H <sub>3</sub> PO <sub>4</sub> /PVA	62.4 $\mu$ Wh cm <sup>-2</sup>	1
2	CNT/CNF/rGO hybrid aerogel film	H <sub>2</sub> SO <sub>4</sub> /PVA	28.4 $\mu$ Wh cm <sup>-2</sup>	2
3	CNF/SWCNT nonwoven macrofiber mat	H <sub>3</sub> PO <sub>4</sub> /PVA	0.7 $\mu$ Wh cm <sup>-2</sup>	3
4	CNT/rGO/BC	KOH	0.1 mWh cm <sup>-2</sup>	4
5	V <sub>2</sub> O <sub>5</sub> -graphene paper	LiClO <sub>4</sub>	89 $\mu$ Wh cm <sup>-2</sup>	5
6	MnO <sub>2</sub> -graphene paper	Na <sub>2</sub> SO <sub>4</sub>	35.1 $\mu$ Wh cm <sup>-2</sup>	6
7	MnO <sub>2</sub> -CNT-paper	KOH/PVA	4.2 $\mu$ Wh cm <sup>-2</sup>	7
8	rGO/PPy/air-laid paper	H <sub>3</sub> PO <sub>4</sub> /PVA	147 $\mu$ Wh cm <sup>-2</sup>	This work

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## Supplementary References

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