Supplementary File

Efficient Flexible All-Solid Supercapacitors with Direct Sputter-Grown Needle-Like Mn/MnOx@Graphite-Foil Electrodes and PPC-Embedded Ionic Electrolytes

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Table 1. Comparison of supercapacitive performance of various MnO_x–carbon composites electrodes based supercapacitors (SC) in literature and the present work.

Electrode Material	Electrolyte	Type of SCs	Stable potential window	Maximum specific capacitance	Maximum energy density	Maximum power density	Ref.
MnO_2 @CNT	1 M Na_2SO_4 aqueous electrolyte	ASC	2.0 V	61 F/g @ 0.2 A/g	27.8 Wh/kg	10000 W/kg	[1]
MnO_2 nanosheets on flexible carbon foam.	1.0 M Na_2SO_4 aqueous electrolyte	SC	0.7 V	1270.5 F/g @ 0.5 A/g	86.2 Wh/ kg	174.8 W /kg	[2]
Mn_3O_4 Nanoflakes on Carbon Fibers.	1 M Na_2SO_4 aqueous electrolyte	ASC	1.8 V	65 F/g @ 0.5 A/g	14 Wh/ kg	9000 W /kg	[3]
MnO_2/CNT/ papers.	0.1 M Na_2SO_4 aqueous electrolyte	SC	0.8 V	540 F/g @ 5.0 A/g	20 Wh/ kg	1.5 kW /kg	[4]
manganese oxide nanosheet/carbon cloth.	0.1 M Na_2SO_4 aqueous electrolyte	SC	0.9 V	230 mF/ cm^2 @ 0.13 mA/cm^2	-----	-----	[5]
MnO_2 – Graphene.	1 M Na_2SO_4 aqueous electrolyte	ASC	1.8 V	69.4 F/g @ 0.5 A/g	31.8 Wh/ kg	9188.1 W/ kg	[6]
MnO_2-Graphene.	1 M KCl aqueous electrolyte	ASC	1.0 V	328 F/g	11.4 Wh/kg	25.8 kW/kg	[7]
CNTs/MnO_2	1 M Na_2SO_4 aqueous electrolyte	ASC	2.0 V	152 F/g @ 0.3 A/g	84.6 W h/kg	4748 W/kg	[8]
Mn/MnO_x@ Graphite-foil	**[EMIM][TFSI]:PCC=1**	**SC**	**2.2 V**	**11.71 mF/cm^2@ 0.03 mA/cm^2**	**7.87 mWh/cm^2**	**1099.64 mW/cm^2**	**This work**

ASC = asymmetric supercapacitors; SC= symmetric supercapacitor;

Reference

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