Supporting information

Rapid preparation of SnO_2/C nanospheres by using organotin as building blocks and their application in lithium-ion batteries

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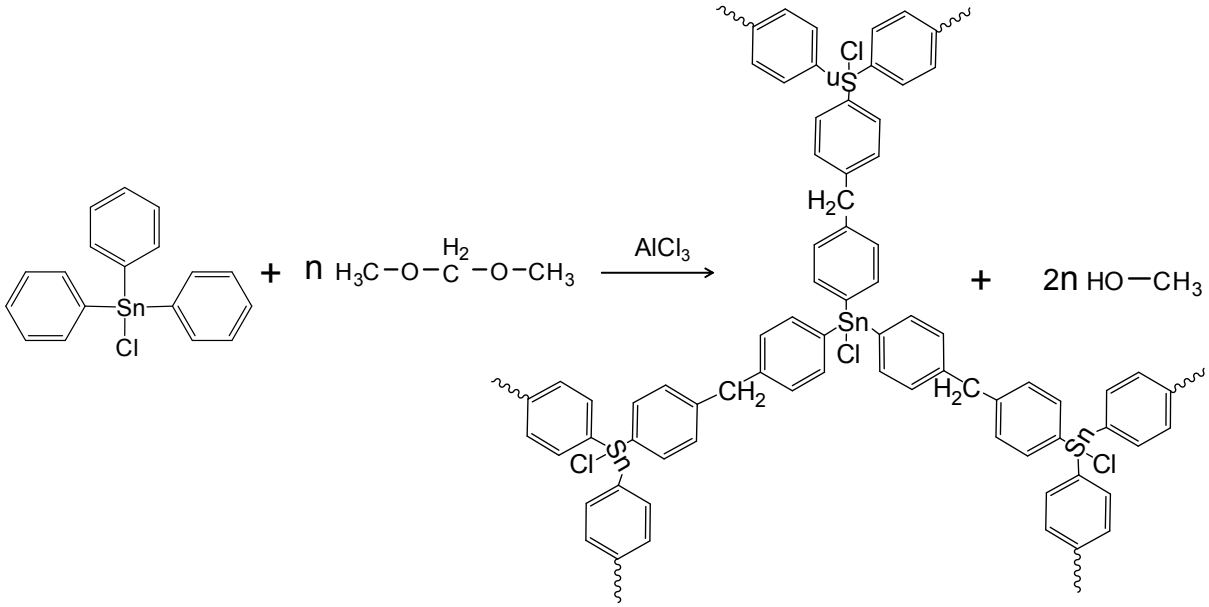

Figure S1. Schematic figure of Friedel-Crafts crosslinking between triphenyltin chloride and dimethoxymethane.

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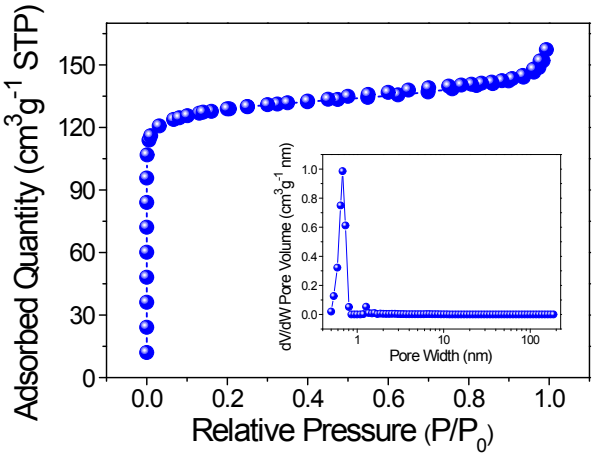

Figure S2. N_2 adsorption-desorption isotherm and pore size distribution (inset) of SnO_2/C-2-700-1.

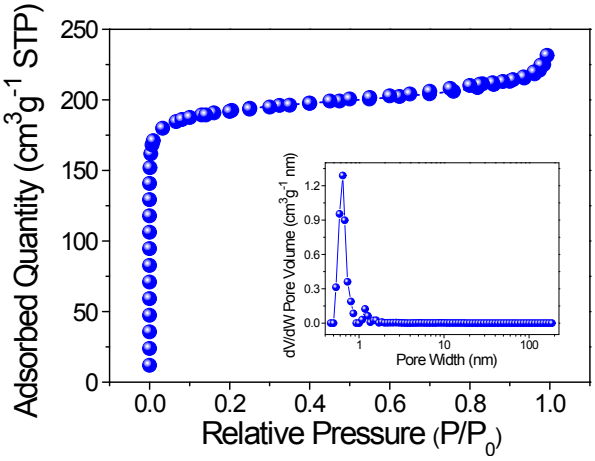

Figure S3. N_2 adsorption-desorption isotherm and pore size distribution (inset) of SnO_2/C-2-800-1.

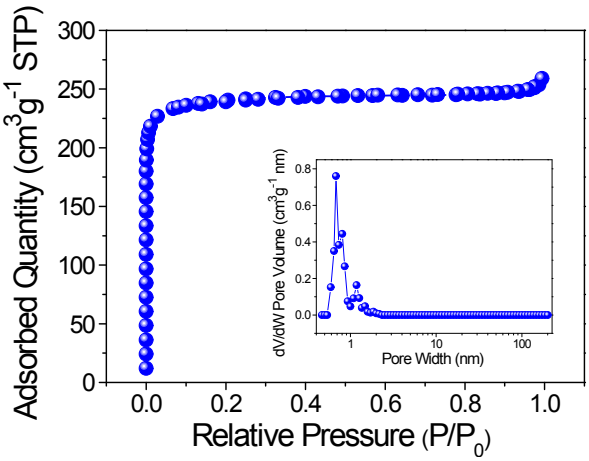

Figure S4. N_2 adsorption-desorption isotherm and pore size distribution (inset) of SnO_2/C-2-900-1.

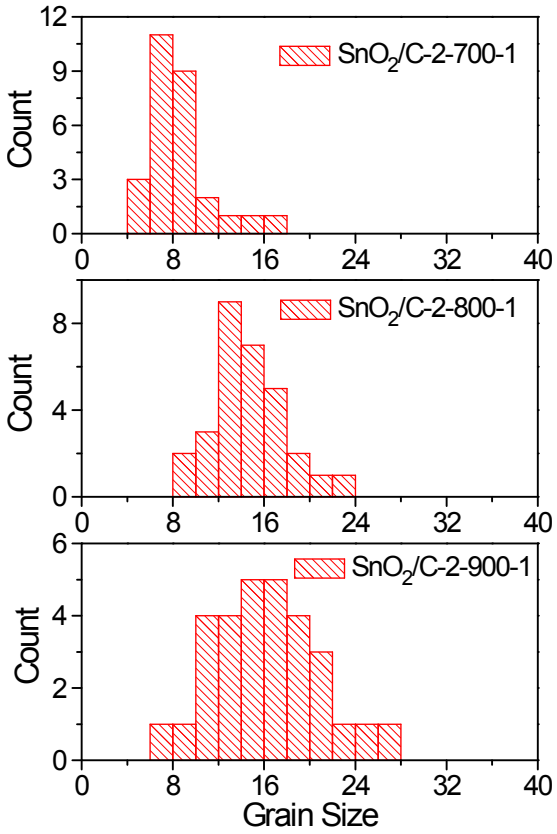

Figure S5. Grain size distribution for TEM images of SnO_2/C-2-700-1, SnO_2/C-2-800-1 and SnO_2/C-2-900-1.

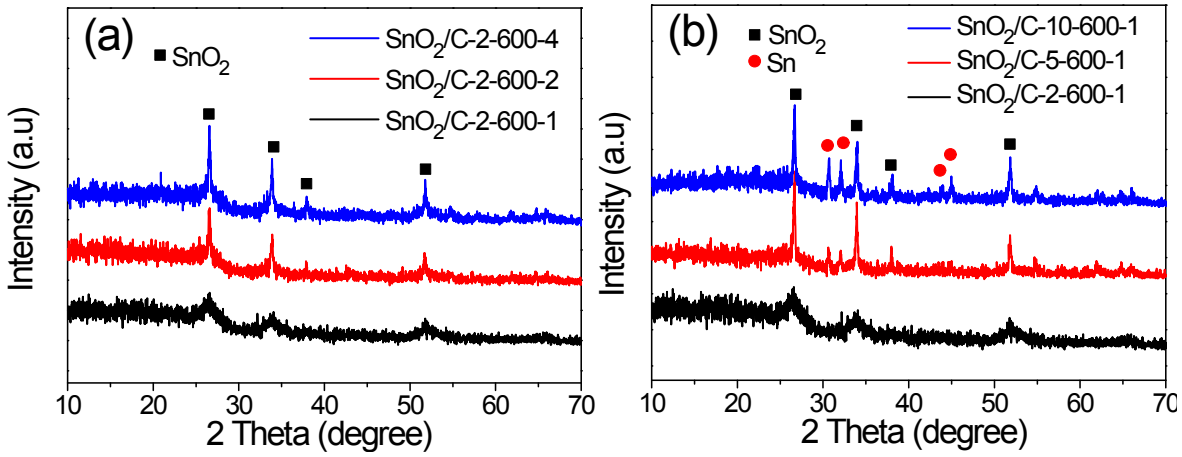

Figure S6. XRD patterns of (a) SnO_2/C-2-600-1, SnO_2/C-2-600-2 and SnO_2/C-2-600-4, and (b) SnO_2/C-2-600-1, SnO_2/C-5-600-1 and SnO_2/C-10-600-1.

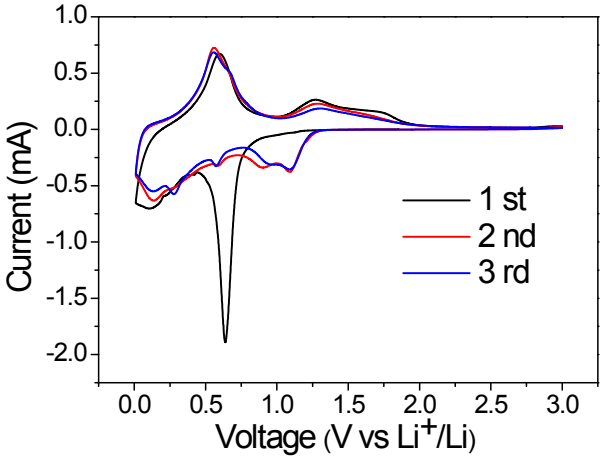

Figure S7. Cyclic voltammetry of the initial 3 cycles scanned between 0.01 and 3 V at 0.2 mV s^{-1} of commercial nano-SnO_2.

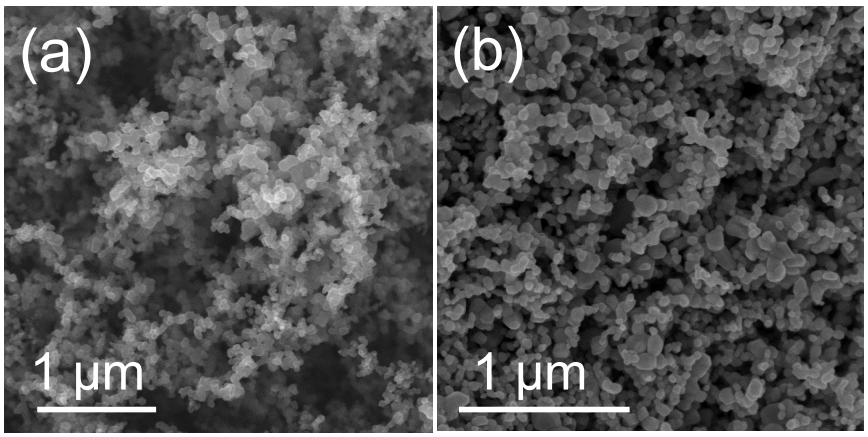

Figure S8. SEM images of (a) carbon and (b) commercial nano-SnO_2.

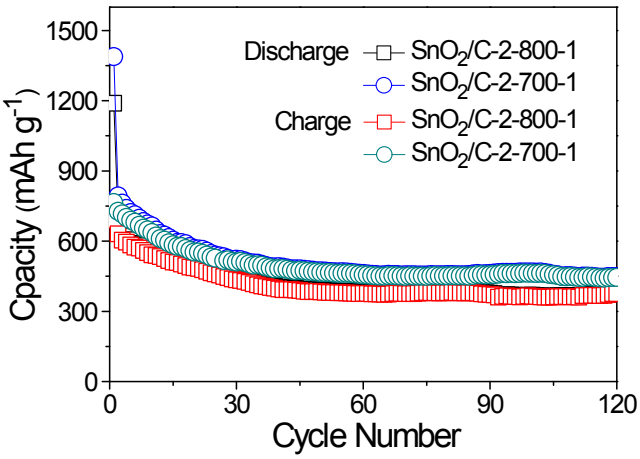

Figure S9. Cycling performance of SnO_2/C-2-700-1 and SnO_2/C-2-800-1 at the current density of 200 mA g^{-1}.

Table S1. Electrochemical performance of SnO_2/C composites.

No.	Sample	Capacity (1st cycle mAh g^{-1})		Cycling performance		Size of SnO_2 particles (nm)	Reference
		discharge	charge	number	Capacity (mAh g^{-1})		
1	SnO_2/C	1453	718.8	120	628.5	~4	This work
2	SnO_2/C	1460	970	200	597.3	~4	1
3	Porous SnO_2/ C	1450	843	100	503	10	2
4	N-doped porous C/SnO_2	1110	990	50	650	18	3
5	SnO_2/C	1394	732	120	623	6	4
6	SnO_2/CNT	1466	709.9	100	402	5-10	5
7	SnO_2/C/graphene	1310	1050	150	757	5-8	6
8	SnO_2/graphene oxide	1410	1280	200	610	4	7

Reference

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