

Supporting Information

From Biomass to High Performance Solar-Thermal and Electric-Thermal Energy Conversion and Storage Materials

Yuan-Qing Li, Yarjan Abdul Samad, Kyriaki Polychronopoulou, Saeed M. Alhassan, and Kin Liao **

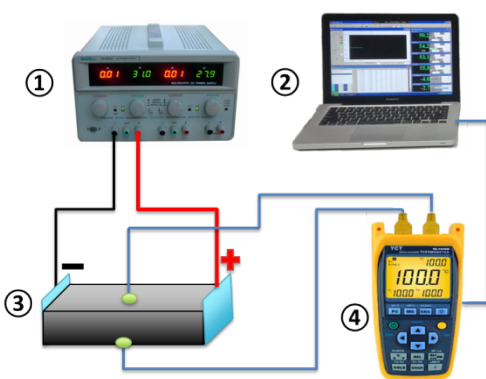


Figure S1. The schematic of electrical-thermal energy conversion and storage measuring system: (1) DC power supply, (2) computer, (3) CA/wax composite, and (4) thermometer.

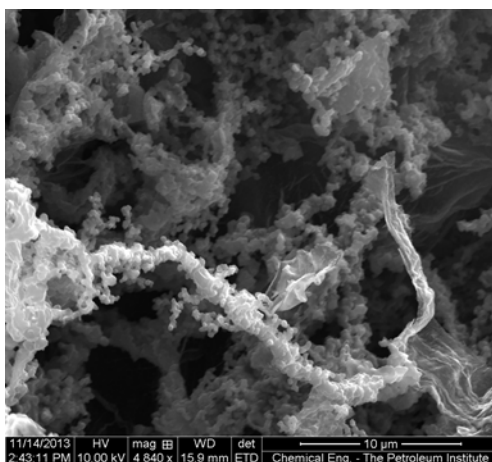


Figure S2. High magnification SEM image of CA from watermelon.

Table S1. Properties of carbon aerogel from various melons:

Samples	Raw materials	Density (g/cm ³)		Electrical conductivity (S/m)	
		Average	SD*	Average	SD*
CA-WI	Winter melon	0.048	0.0023	6.5	1.6
CA-WA	Water melon	0.051	0.0027	3.8	1.0
CA-PU	Pumpkin	0.054	0.0019	5.3	1.0

SD: standard deviation.

Table S2. Phase change behavior of paraffin wax, BS/wax composite, and BS/wax composites after aging.

Sample	Phase transition	ΔH (J/g)		T_r (°C)	
		Heating cycle	Cooling cycle	Heating cycle	Cooling cycle
Paraffin wax	Solid-liquid	122.3	134.1	53.24	49.4
BS/wax composite	Form-stable	115.2	126.9	53.53	48.3
BS/wax EA	Form-stable	114.4	126.8	54.7	47.04
BS/wax OA	Form-stable	116.5	129.8	53.19	48.87
BS/wax TA	Form-stable	113.2	127.1	54.7	47.04