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## **Supporting Information**

## A new strategy of spray pyrolysis to prepare porous carbon nanosheet with enhanced ionic sorption capacity

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This file includes:

- (1) Schematic diagram of the ultrasonic spray pyrolysis system.
- (2) XRD pattern of the carbon SP1 particles obtained after the ultrasonic washing process.
- (3) SEM images before (a) and after (b) the ultrasonic washing for the carbon SP1 prepared by spray pyrolysis.
- (4) EDX analysis results before (a) and after (b) the ultrasonic washing for the carbon SP1 prepared by spray pyrolysis.
- (5) SEM images of the carbon particles (SP2) prepared by changing the concentration of polyethylene glycol added to the spray solution.
- (6) Fig. S6 (a) SEM and (b) TEM images of the carbon particles (SP3) obtained after the ultrasonic washing for 4 h.
- (7) Fig. S7 Cycling performance of carbon electrodes.

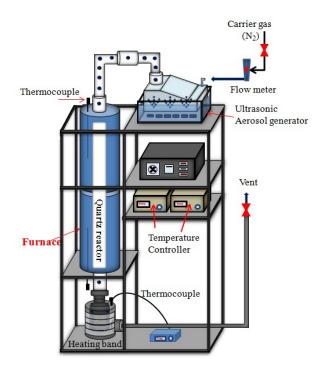


Fig. S1. Schematic diagram of the ultrasonic spray pyrolysis system.

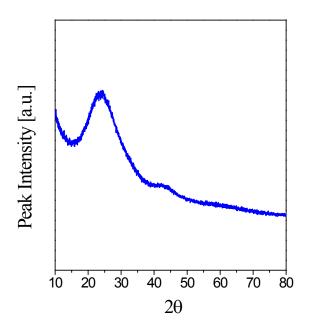
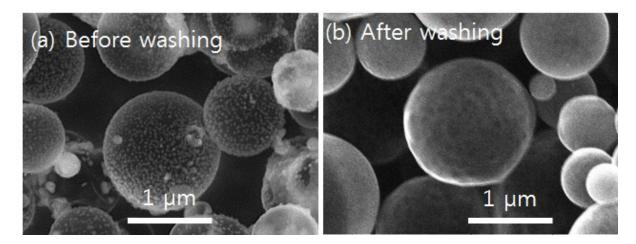
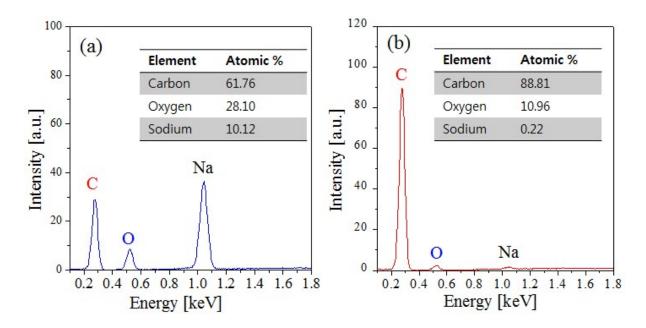


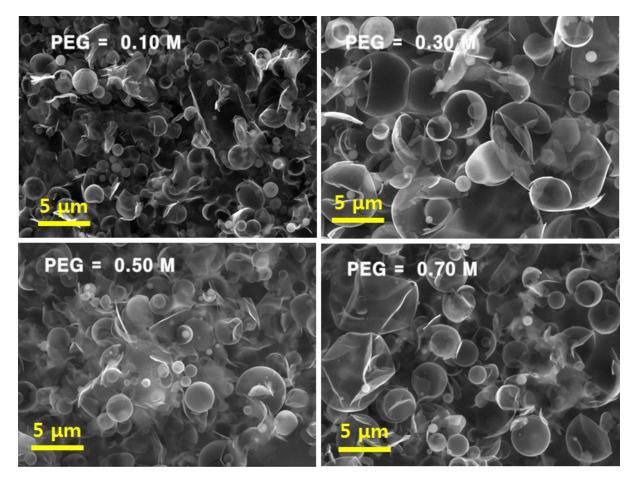
Fig. S2 XRD pattern of the carbon SP1 particles obtained after the ultrasonic washing process.



**Fig. S3** SEM images before (a) and after (b) the ultrasonic washing for the carbon SP1 prepared by spray pyrolysis.



**Fig. S4** EDX analysis results before (a) and after (b) the ultrasonic washing for the carbon SP1 prepared by spray pyrolysis.



**Fig. S5** SEM images of the carbon particles (SP2) prepared by changing the concentration of polyethylene glycol added to the spray solution.

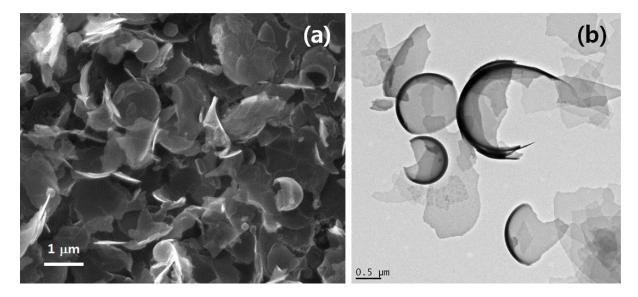


Fig. S6 (a) SEM and (b) TEM images of the carbon particles (SP3) obtained after the ultrasonic washing for 4 h.

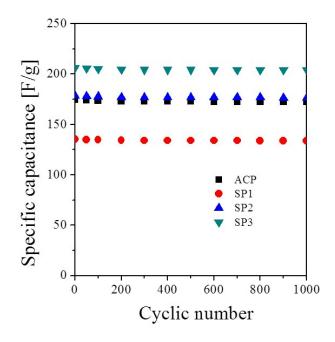


Fig. S7 Cycling performance of carbon electrodes.