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Supporting Information

Large-surface-area porous monolith of graphene for electrochemical capacitive deionization

Jinjue Zeng, Tao Wang, Yue Wfang, Lei Gao, Dandan Sun, Cong Ge, Dingfei Deng, Hongda Zhu, Yoshio Bando, Ruiqing Li, Pengcheng Dai, and Xuebin Wang

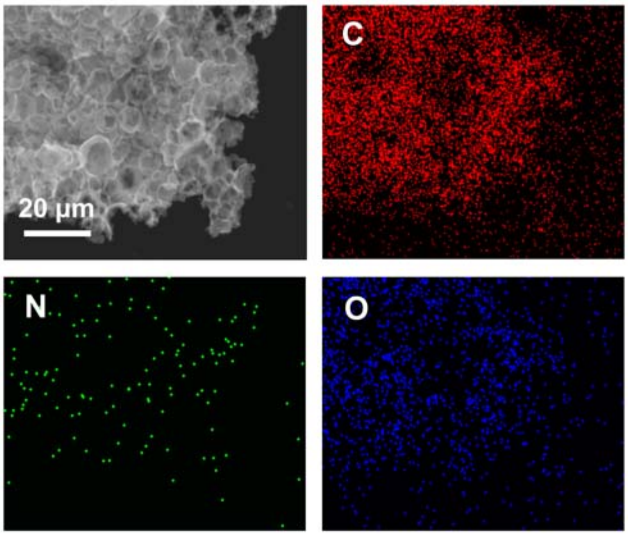

Fig. S1. EDX mapping of ZnG-N1100.

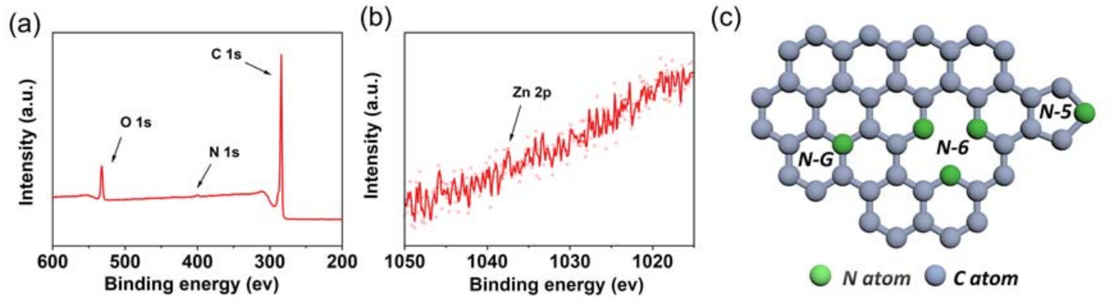

Fig. S2. (a) XPS survey spectrum, (b) Zn 2p spectrum of ZnG-N1100, and (c) Schematic of possible configuration of nitrogen doping in ZnG-N1100.

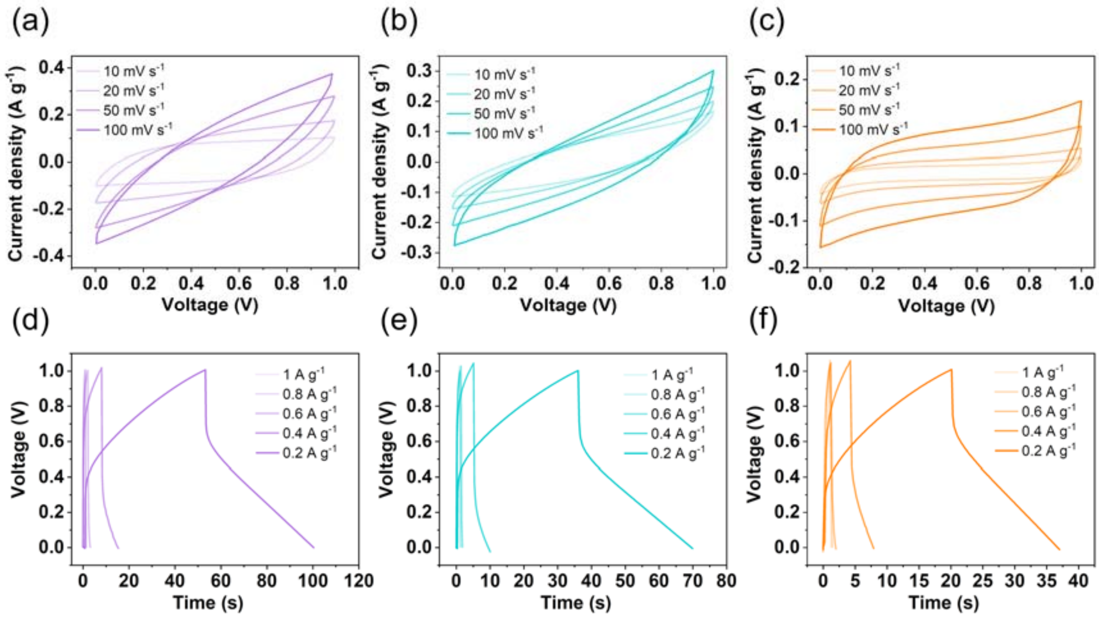

Fig. S3. CV of symmetric electrodes of (a) ZnG-1000, (b) ZnG-1200, and (c) ZnG-Ar; GCD curves of (d) ZnG-1000, (e) ZnG-1200, and (f) ZnG-Ar.

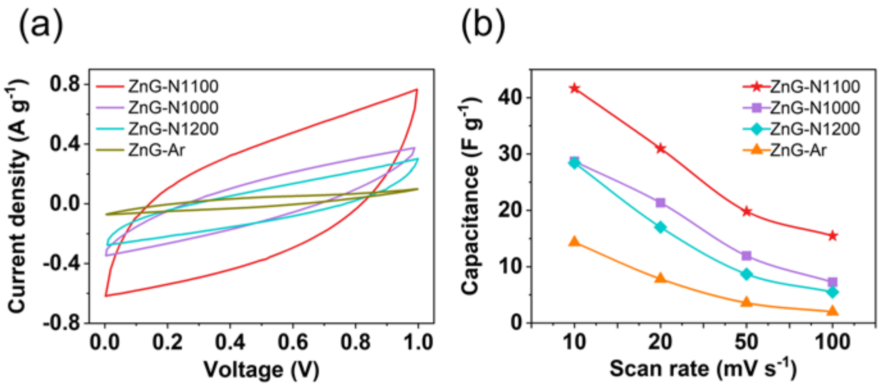

Fig. S4. (a) CV of symmetric electrodes of ZnG-N1100, ZnG-N1000, ZnG-N1200, and ZnG-Ar at a scan rate of 100 mV s^{-1}. (b) Specific capacitance of ZnG-N1100, ZnG-N1000, ZnG-N1200, and ZnG-Ar with a series of scan rates.

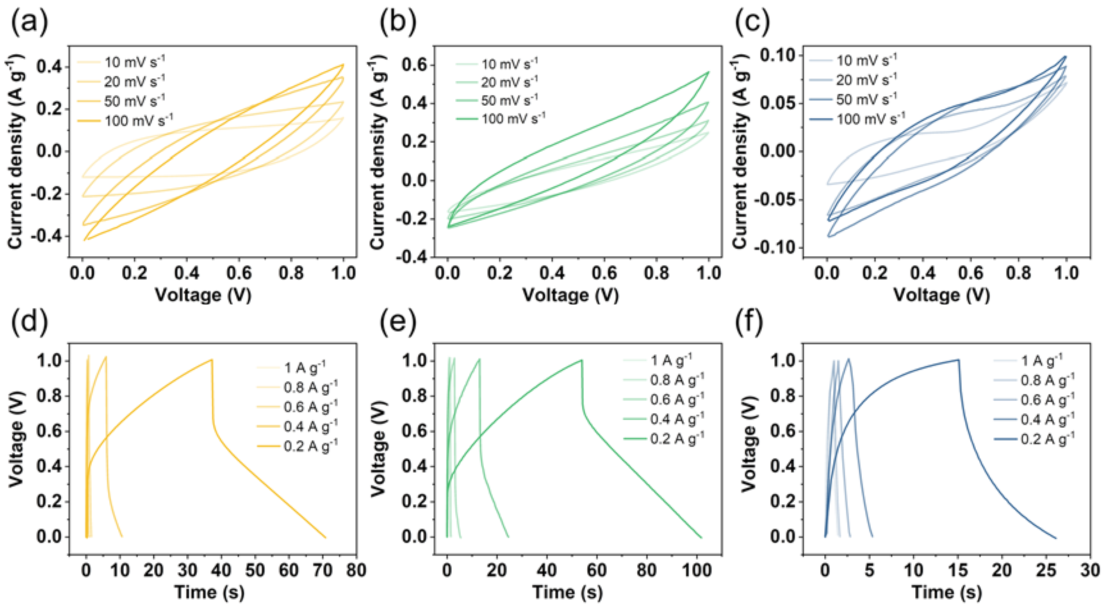

Fig. S5. CV of symmetric electrodes of (a) ZnG-Milled, (b) RGO, and (c) AC; GCD curves of (d) ZnG-Milled, (e) RGO, and (f) AC.

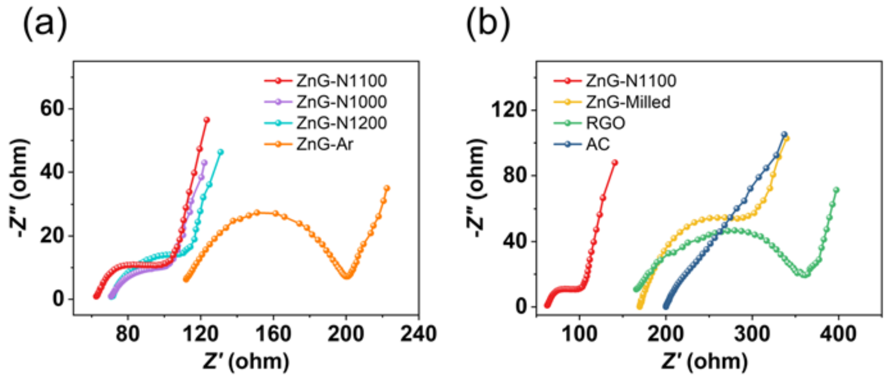

Fig. S6. (a) EIS of ZnG-N1100, ZnG-N1000, ZnG-N1200, and ZnG-Ar. (b) EIS of ZnG-N1100, ZnG-Milled, RGO, and AC.

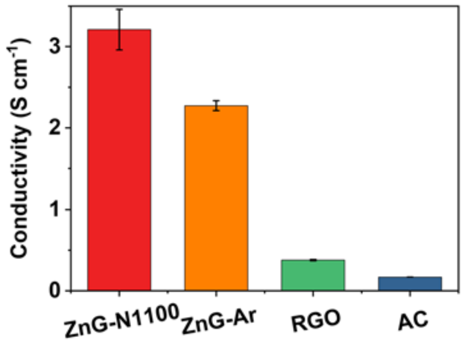

Fig. S7. Electrical conductivity of ZnG-N1100, ZnG-Ar, RGO, and AC.

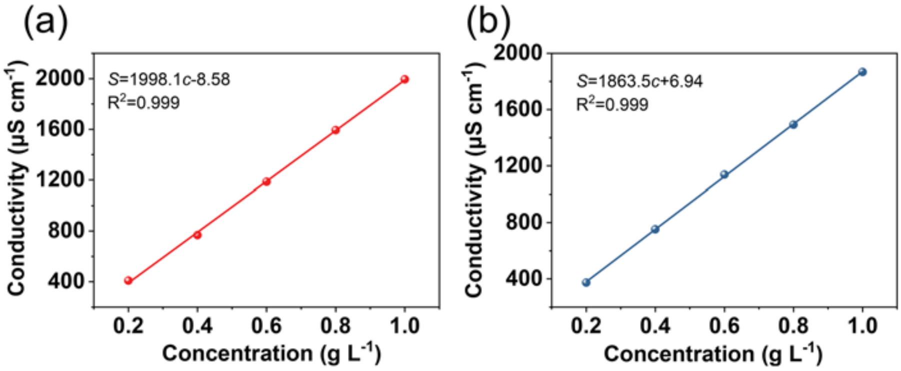

Fig. S8. Calibration curves of (a) NaCl and (b) KCl aqueous solution.

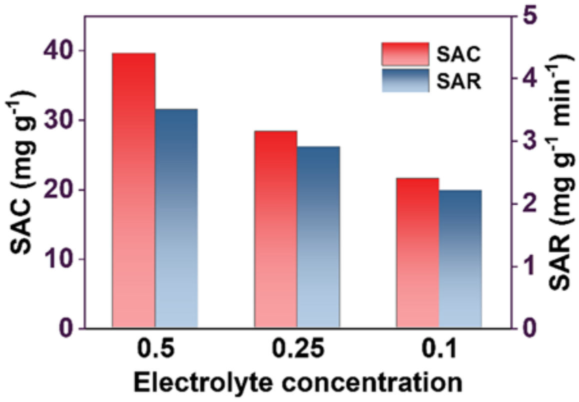

Fig. S9. The SAC and SAR of ZnG-N1100 electrode in 0.5, 0.25, and 0.1 g L^{-1} NaCl solutions.

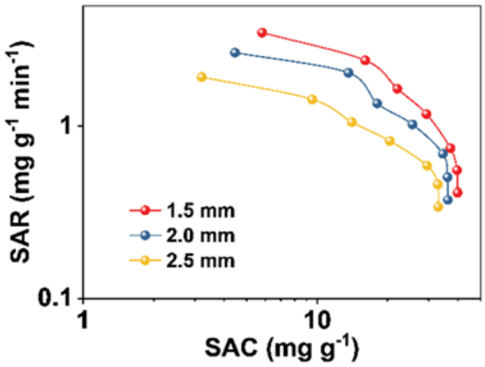

Fig. S10. The influence of electrode thickness on the SAR versus SAC of ZnG-N1100.

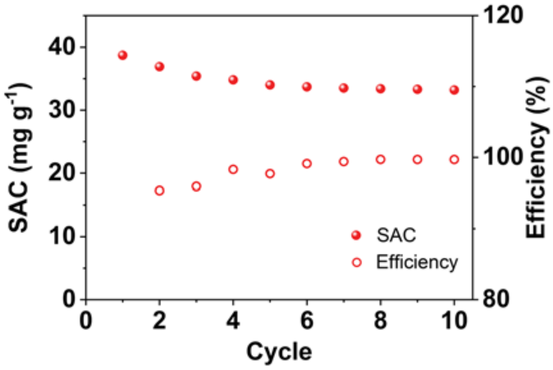

Fig. S11. Desalination capacity and efficiency of ZnG-N1100 during repeated cycles.

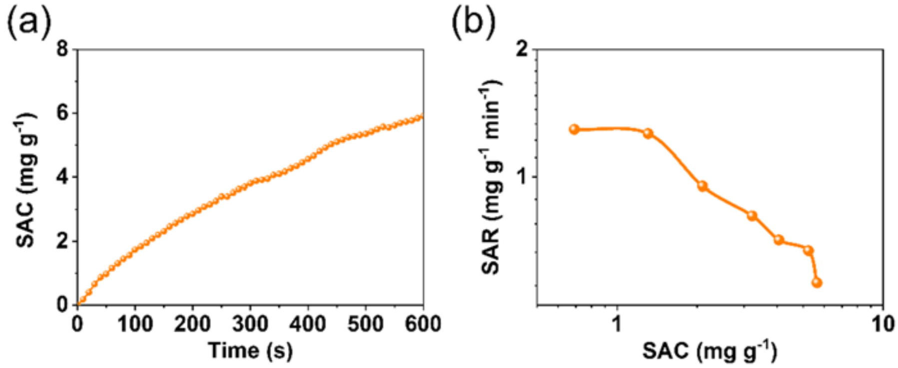

Fig. S12. (a) SAC and (b) SAR of ZnG-Ar in 0.5 g L^{-1} NaCl solution.

Table S1. Warburg factor and ion diffusion ability of samples.

Samples	Warburg factor (Ω cm^2 s$^{-1/2}$)	Ion diffusion coefficient (cm^2 s^{-1})
ZnG-N1100	8.1	2.1×10^{-8}
ZnG-N1000	11.3	1.1×10^{-8}
ZnG-N1200	8.7	1.8×10^{-8}
ZnG-Ar	24.7	2.3×10^{-9}
ZnG-Milled	54.8	2.8×10^{-10}
RGO	13.7	7.4×10^{-9}
AC	83.4	1.2×10^{-10}