Electronic Supplementary Information

Foldable water-activated reserve battery with diverse voltages

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Parameter	1 M NaCl			3 M NaCl		
	400 µl	600 µl	800 µl	400 µl	600 µl	800 µl
Rs (Ω)	13.27	0.54	0.27	3.19	0.81	0.49
R1 (Ω)	10.02	10.54	14.63	12.31	4.38	0.4
R2 (Ω)	58.75	1.07	9.74	1.81	0.5	1.58
R3 (Ω)	10.46	2.41	0.98	1.4	1.05	9.33
R4 (Ω)	3.13	1.63	0.33	3.94	4.39	2.98
C1 (F)	3.1×10^{-7}	1.17×10^{-5}	1.11×10^{-4}	7.42×10^{-6}	3.54×10^{-5}	2.53×10^{-5}
C2 (F)	1.31×10^{-6}	4.4×10^{-6}	5.79×10^{-5}	4.1×10^{-6}	1.01×10^{-5}	5.34×10^{-5}
C3 (F)	1.14×10^{-6}	1.19×10^{-5}	8.41×10^{-5}	1.25×10^{-6}	2.92×10^{-5}	5.35×10^{-5}
C4 (F)	1.66×10^{-7}	3.41×10^{-5}	3.56×10^{-5}	6.09×10^{-6}	3.53×10^{-5}	7.37×10^{-4}

Table S1. Fitted parameters of ECM estimated from the impedance spectra of batteries activated by the 1 M and 3 M NaCl solutions.

Parameter	1 M KOH			3 M KOH		
	600 µl	800 µl	1000 µl	600 µl	800 µl	1000 µl
Rs (Ω)	2.44	1.33	0.58	2.09	1.2	0.84
R1 (Ω)	2.1	7.59	0.81	1.43	1.2	3.22
R2 (Ω)	9.49	1.42	4.67	32.53	3.74	0.41
R3 (Ω)	28.02	25.25	8.92	5.12	14.16	2.27
C1 (F)	9.27×10^{-6}	4.41×10^{-5}	4×10^{-5}	7.79×10^{-6}	1.52×10^{-5}	1.56×10^{-4}
C2 (F)	2.5×10^{-5}	1.68×10^{-5}	1.01×10^{-4}	9.08×10^{-3}	4.61×10^{-5}	4.38×10^{-5}
C3 (F)	0.01	0.01	0.02	22.71×10^{-6}	0.00968	0.01658
W ($\Omega/s^{1/2}$)	28.02	0.02	0.19	0.1	0.03	0.26

Table S2. Fitted parameters of ECM estimated from the impedance spectra of batteries activated by the 1 M and 3 M KOH solutions.
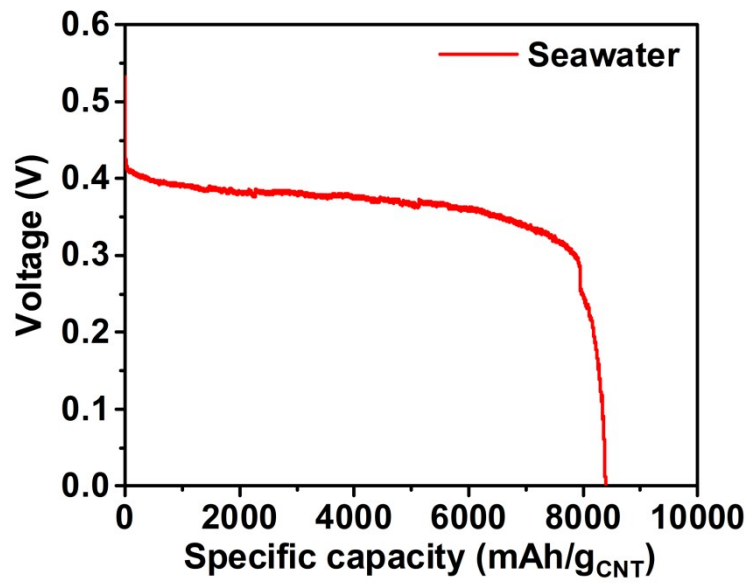
Fig. S1 Discharging curve of a reserve battery activated by seawater at a constant current of 3 mA.

Parameter	1 M NaCl	
	Unfolded	folded
Rs (Ω)	0.36	0.8
R1 (Ω)	0.74	1.28
R2 (Ω)	10.68	4.56
R3 (Ω)	2.86	0.01
R4 (Ω)	1.96	8.15
C1 (F)	15.41×10^{-6}	4.17×10^{-6}
C2 (F)	34×10^{-6}	41.14×10^{-6}
C3 (F)	39.1×10^{-6}	23.13×10^{6}
C4 (F)	1.06×10^{-3}	9.05×10^{-6}

Table S3. Fitted parameters of ECM estimated from the impedance spectra of batteries in unfolded and folded states.