Supporting Information

Enhanced Lithium- and Sodium-ion Storage in an Interconnected Carbon Network Comprising Electronegative Fluorine

Seok-Min Hong[1,2], Vinodkumar Etacheri[3,4], Chulgi Nathan Hong[3,5], Seung Wan Choi[1], Ki Bong Lee[1,], Vilas G. Pol[3,]**

[1] Department of Chemical and Biological Engineering, Korea University, 145 Anam-ro, Seongbuk-gu, Seoul 02841, Republic of Korea

[2] Nuclear Fuel Cycle Process Development Division, Korea Atomic Energy Research Institute, 989-111 Daedeok-daero, Yuseong-gu, Daejeon 34057, Republic of Korea

[3] Davidson School of Chemical Engineering, Purdue University, 480 Stadium Mall Drive, West Lafayette, Indiana 47907-2100, United States

[4] IMDEA Materials Institute, C/ Eric Kandel 2, Getafe, Madrid 28906, Spain

[5] Battery R&D, LG Chem Ltd., 104-1 Moonji-dong, Yuseong-gu, Daejeon, 305-380, Republic of Korea

* Tel.: +82 2 3290 4851; FAX: +82 2 926 6102; E-mail: kibonglee@korea.ac.kr (K.B. Lee)

* Tel: +01 765 494 0044; FAX: +01 765 494 0805; E-mail: vpol@purdue.edu (V.G. Pol)

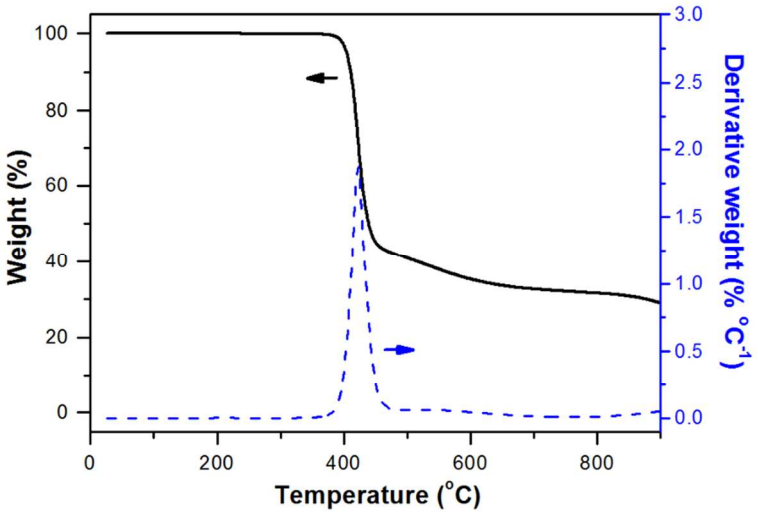


Figure S1. Weight change of pristine PVDF with increasing temperature under argon gas flow.

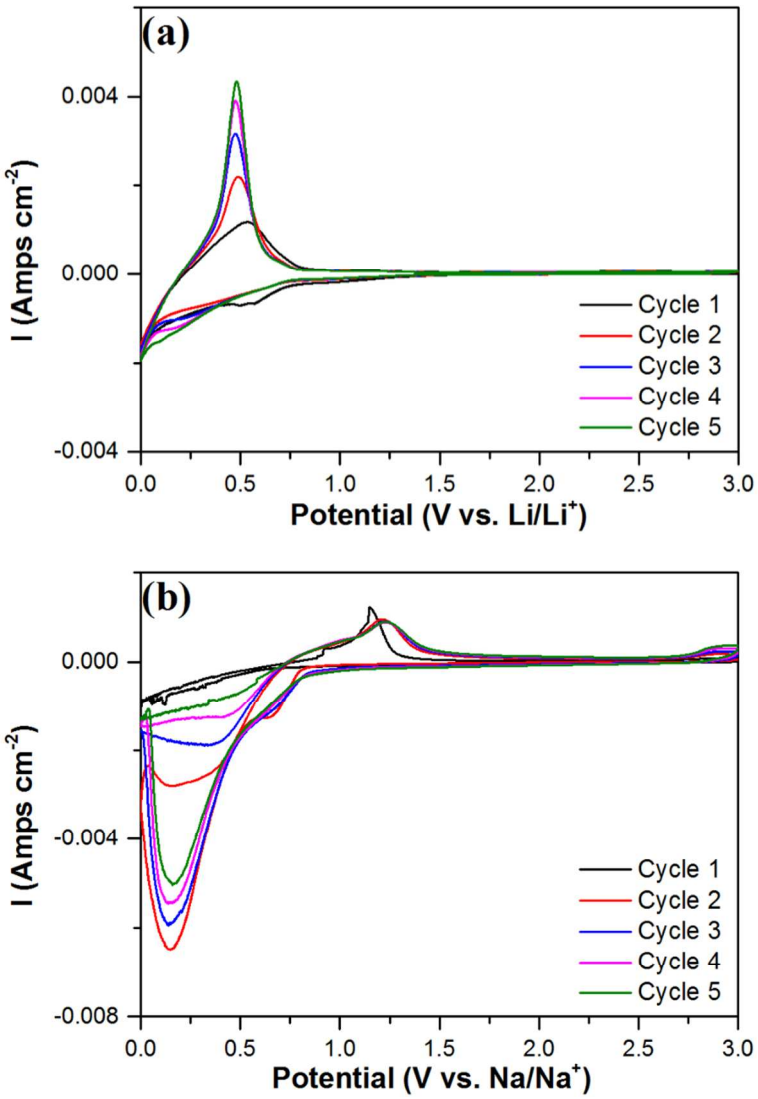


Figure S2. Cyclic voltammograms for graphite in (a) lithium- and (b) sodium-ion batteries.

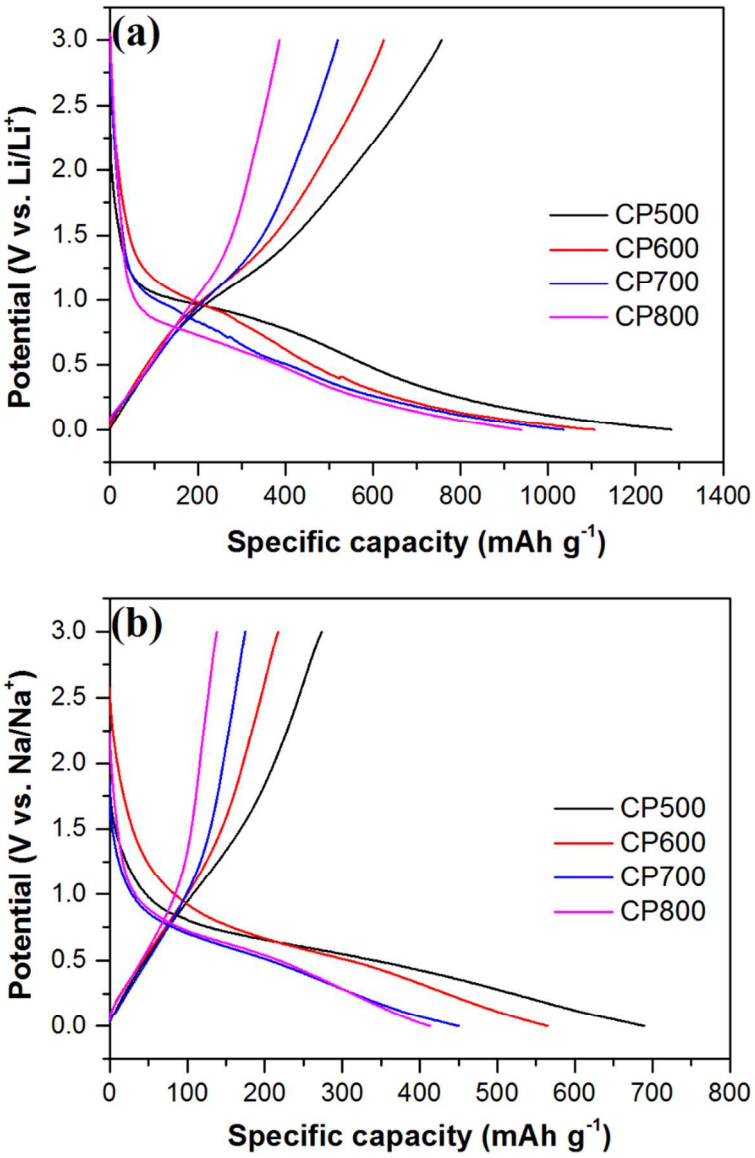


Figure S3. First cycle discharge and charge voltage profiles of fluorocarbons prepared at 500–800 °C in (a) lithium- and (b) sodium-ion batteries.

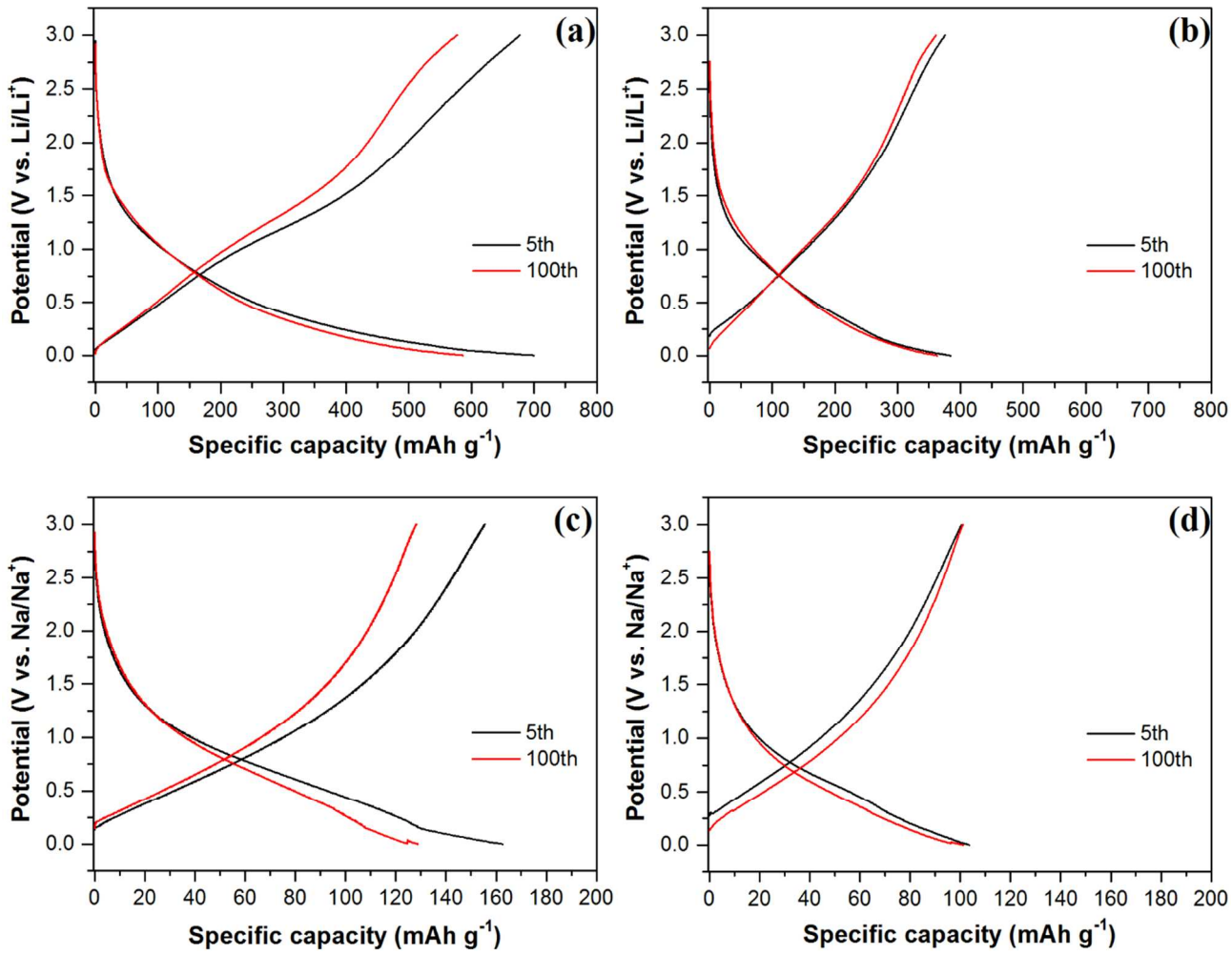


Figure S4. 5th and 100th cycle discharge and charge voltage profiles of CP500: lithium-ion batteries at (a) C/10 and (b) 1 C rates and sodium-ion batteries at (c) 50 mA g^{-1} and (d) 200 mA g^{-1} rates.