

Supporting Information

Hierarchically Hybrid Porous Co₃O₄@NiMoO₄/CoMoO₄ Heterostructure for High-Performance Electrochemical Energy Storage

Yan Wang^{*a}, Siming Yu^a Ce-yu Deng^a, Hua-liang Wei^a, Jian-hao Zhou^a, Ze-xiang Chen^{*a},
Huan Yang^a, Ming-Jin Liu^{b,c,d}, Bing-Ni Gu^{b,c,d}, Chia-Chen Chung^{b,c,d}, Hui-fang Lv^a, Zhi-yu
Zhou^a and Yu-Lun Chueh^{*b,c,d}

^aSchool of Optoelectronic Science and Engineering of UESTC, University of Electronic
Science and Technology of China, Jianshe North Road 4, 610054 Chengdu, China..

^bDepartment of Materials Science and Engineering, National Tsing Hua University,
Hsinchu, 30013, Taiwan.

^cFrontier Research Center on Fundamental and Applied Sciences of Matters, National
Tsing Hua University, 3 Hsinchu, Taiwan.

^dDepartment of Physics, National Sun Yat-Sen University, Kaohsiung, 80424, Taiwan.

***E-mail Address:** wangyan127@uestc.edu.cn; zxchen@uestc.edu.cn and
ylchueh@mx.nthu.edu.tw

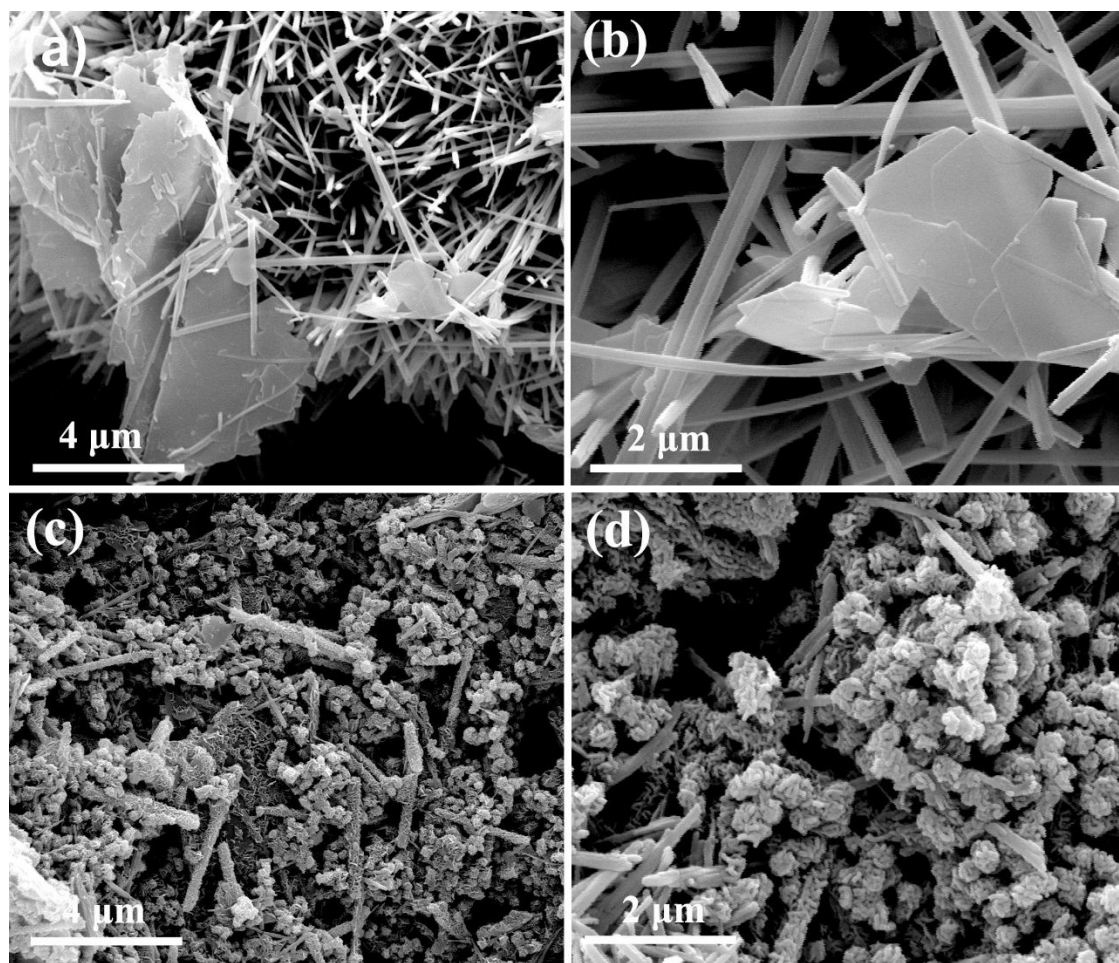


Figure S1 (a) Low- and (b) high-magnification of SEM images of samples obtained with 0 mmol Na_2MoO_4 . (c) Low- and (d) high-magnification of SEM images of samples obtained with 4 mmol Na_2MoO_4

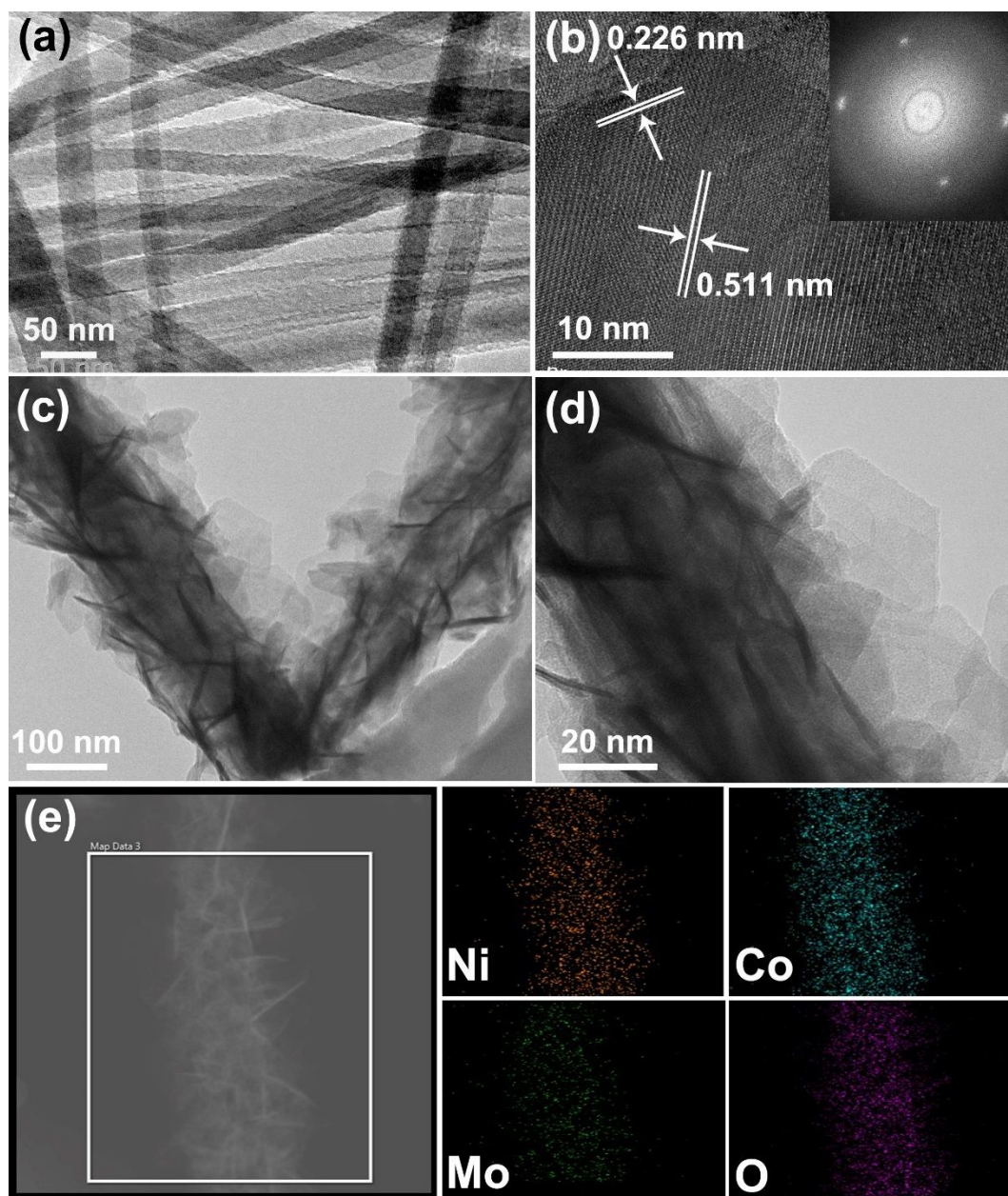


Figure S2 (a) TEM images of the Co-precursor, (b) HRTEM images of the Co-precursor, (c) Low- and (d) high-magnification of TEM images of Co-precursor@NiMoO₄/CoMoO₄. (e) EDS elemental mapping images of the Co-precursor@NiMoO₄/CoMoO₄.

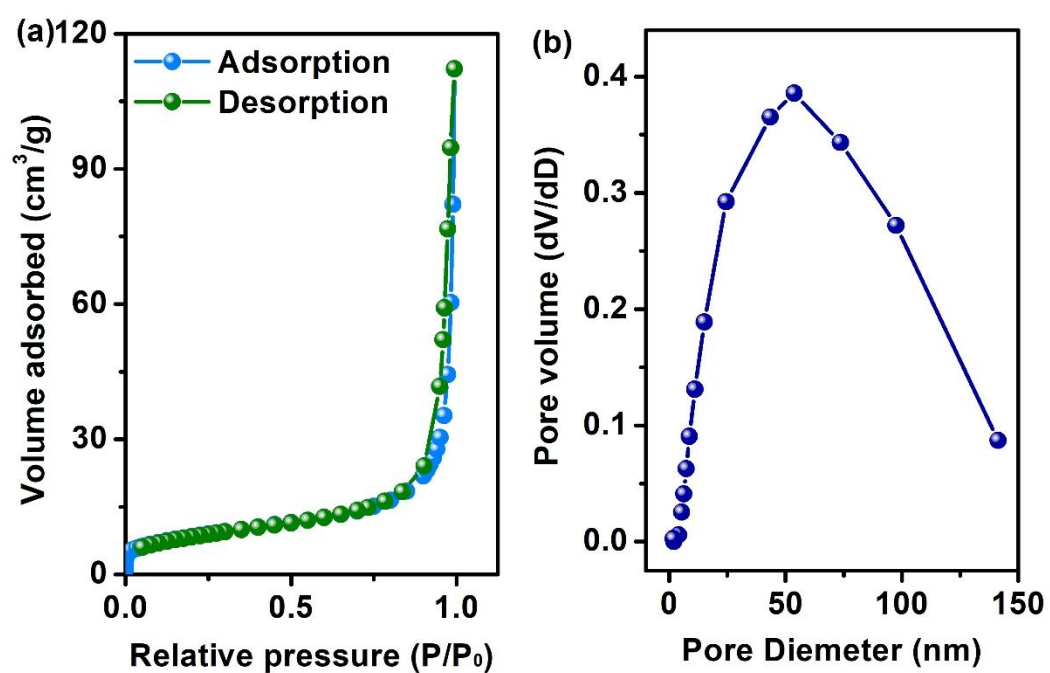


Figure S3 The Brunauer–Emmett–Teller (BET) surface areas and the pore size distribution of Co-precursor@NiMoO₄/CoMoO₄.

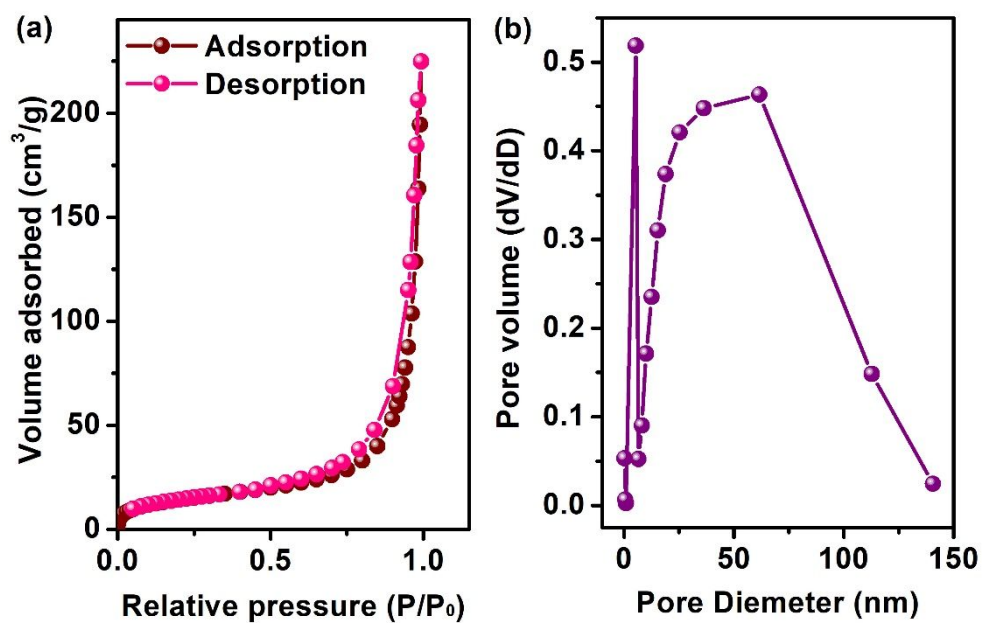


Figure S4 The Brunauer–Emmett–Teller (BET) surface areas and the pore size distribution of porous $\text{Co}_3\text{O}_4@\text{NiMoO}_4/\text{CoMoO}_4$ composite.

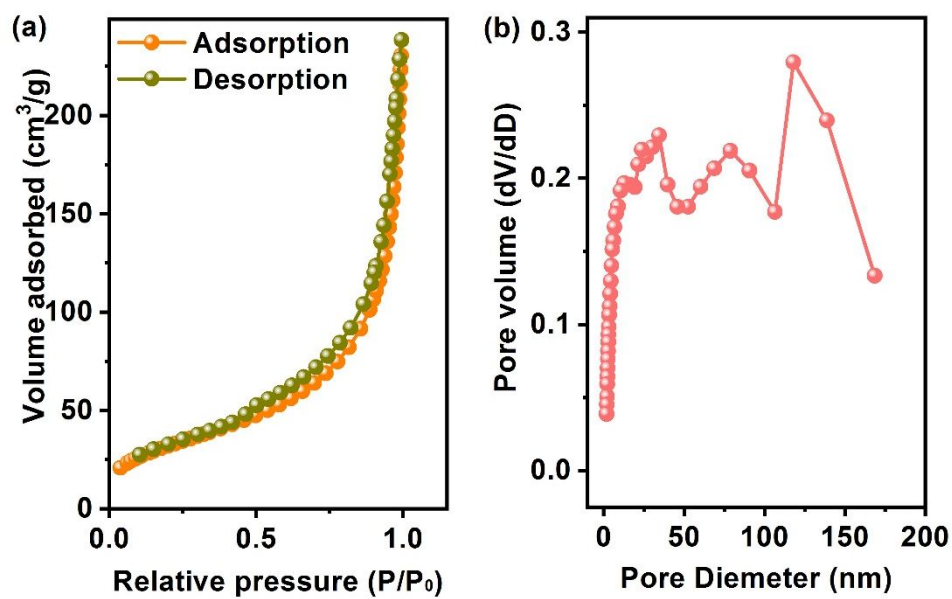


Figure S5 The Brunauer–Emmett–Teller (BET) surface areas and the pore size distribution of porous $\text{Co}_3\text{O}_4@\text{NiMoO}_4/\text{CoMoO}_4\text{-N}$ composite.

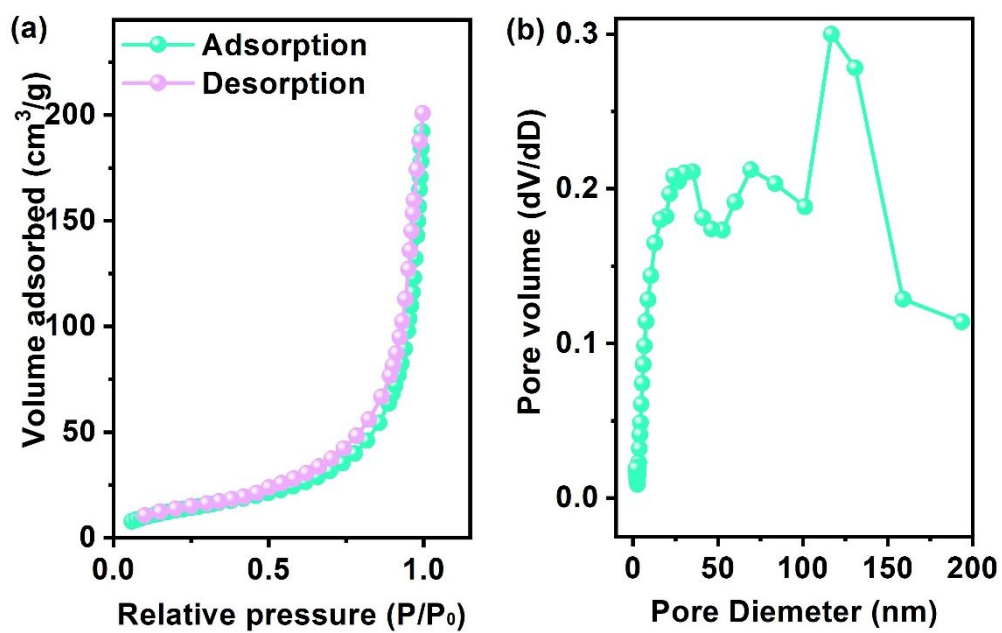


Figure S6 The Brunauer–Emmett–Teller (BET) surface areas and the pore size distribution of porous $\text{Co}_3\text{O}_4@\text{NiMoO}_4/\text{CoMoO}_4\text{-E}$ composite.

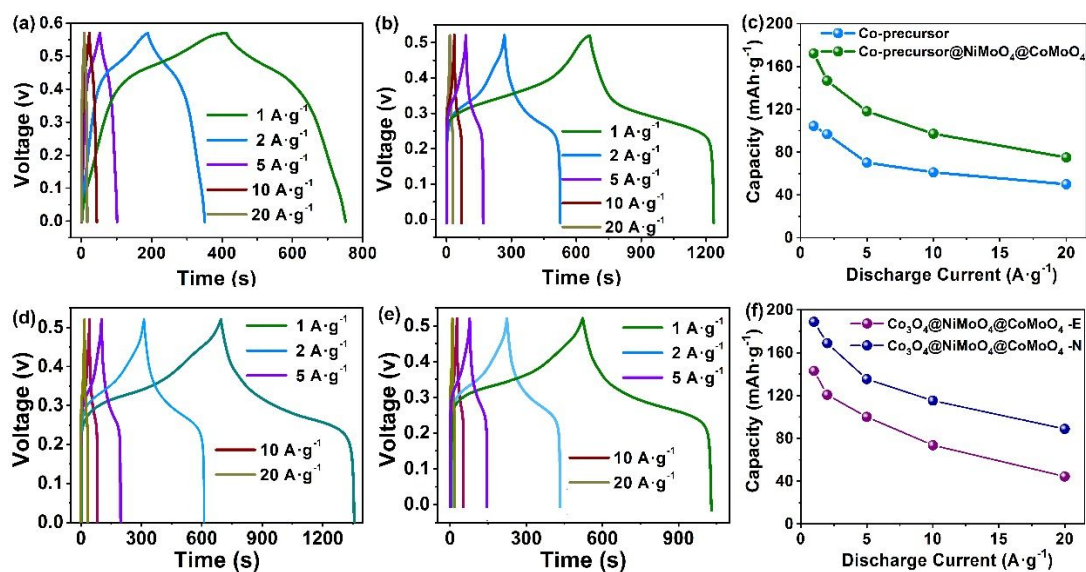


Figure S7 (a) and (b) are the Charge–discharge curves of the Co–precursor and Co–precursor@NiMoO₄/CoMoO₄, (c) the corresponding specific capacities of Co–precursor and Co–precursor@NiMoO₄/CoMoO₄. (d) and (e) are the Charge–discharge curves of the Co₃O₄@NiMoO₄/CoMoO₄-N and Co₃O₄@NiMoO₄/CoMoO₄-E. (f) the corresponding specific capacities of Co₃O₄@NiMoO₄/CoMoO₄-N and Co₃O₄@NiMoO₄/CoMoO₄-E

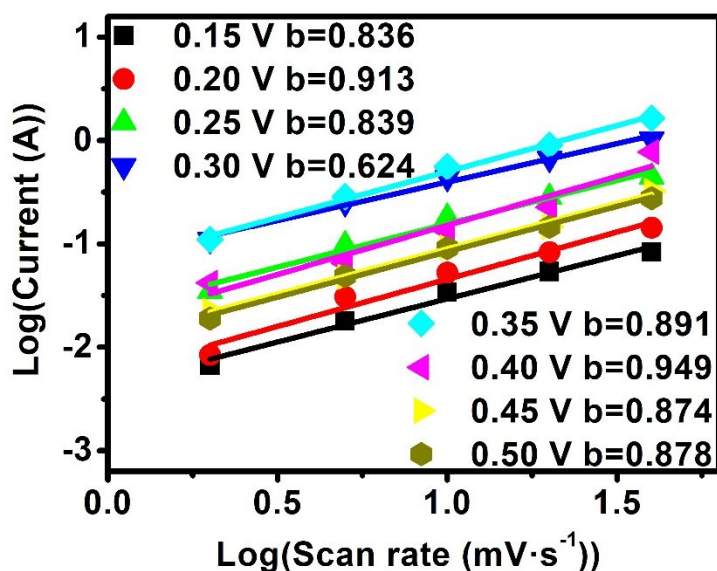


Figure S8 Calculated b–values for the porous Co₃O₄@NiMoO₄/CoMoO₄ composite at various potentials from the CV test.

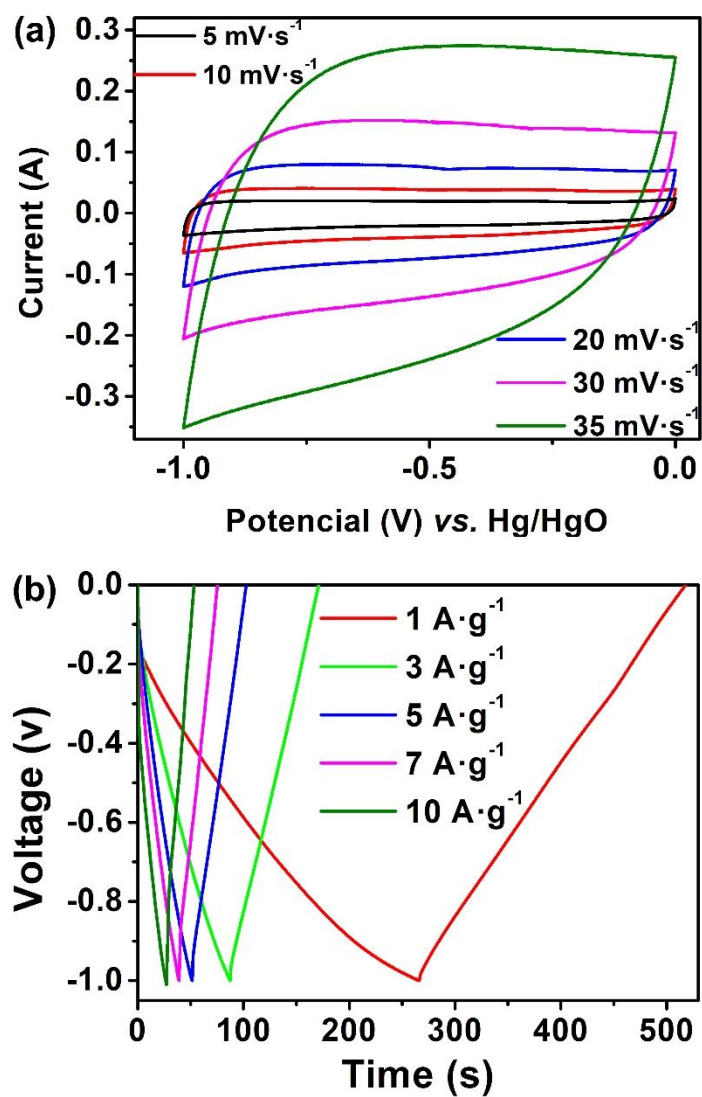


Figure S9 (a) The Charge–discharge curves of the AC, (b) the corresponding specific capacitance of AC.