Supplementary Information

Hollow Nickel Nanocorn Arrays as Three-Dimensional and Conductive Support for Metal Oxides to Boost Supercapacitive Performance

Dongliang Chao[1,#], Xinhui Xia[1,2,#], Changrong Zhu[1,], Jin Wang[1,], Jilei Liu[1,], Jianyi Lin[1,3], Zexiang Shen[1,]*, and Hong Jin Fan[1,]*

[1] *Division of Physics and Applied Physic, School of Physical and Mathematical Sciences, Nanyang Technological University, 637371, Singapore*
[2] *State Key Laboratory of Silicon Materials, Key Laboratory of Advanced Materials and Applications for Batteries of Zhejiang Province, and Department of Materials Science and Engineering, Zhejiang University, Hangzhou 310027, China*
[3] *Heterogeneous Catalysis, Institute of Chemical Engineering and Sciences, A*star, 1 Pesek Road, Jurong Island, 627833, Singapore*

[#] *These authors contributed equally to this work.*
* *Corresponding author. E-mail: fanhj@ntu.edu.sg*

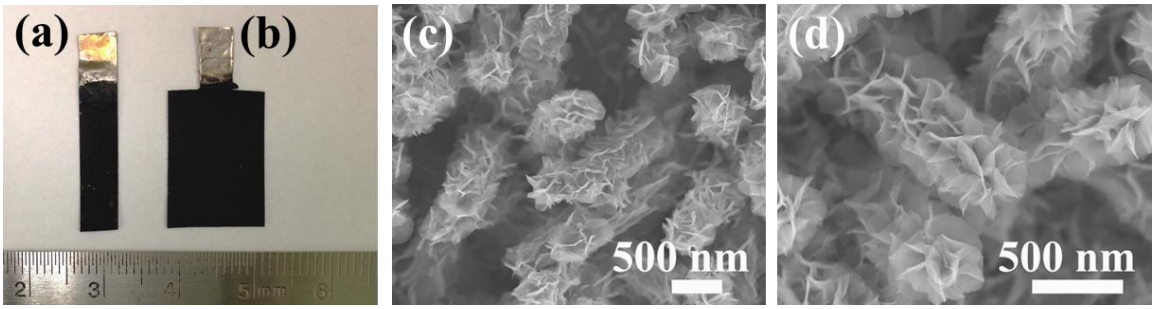

Fig. S1. Photographs and SEM images of Ni/Co_3O_4 CBAs grown on different substrates. (a, c) Ti foil and (b, d) stainless steel foil substrates.

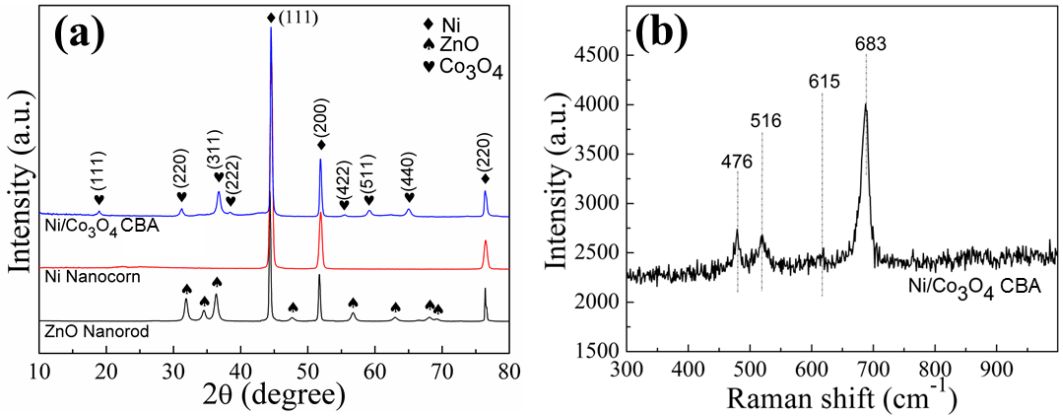

Fig. S2. (a) XRD patterns of the ZnO nanorod, hollow Ni Nanocorn and Ni/Co_3O_4 CBAs on nickel foam. (b) Raman spectra of Ni/Co_3O_4 CBAs.

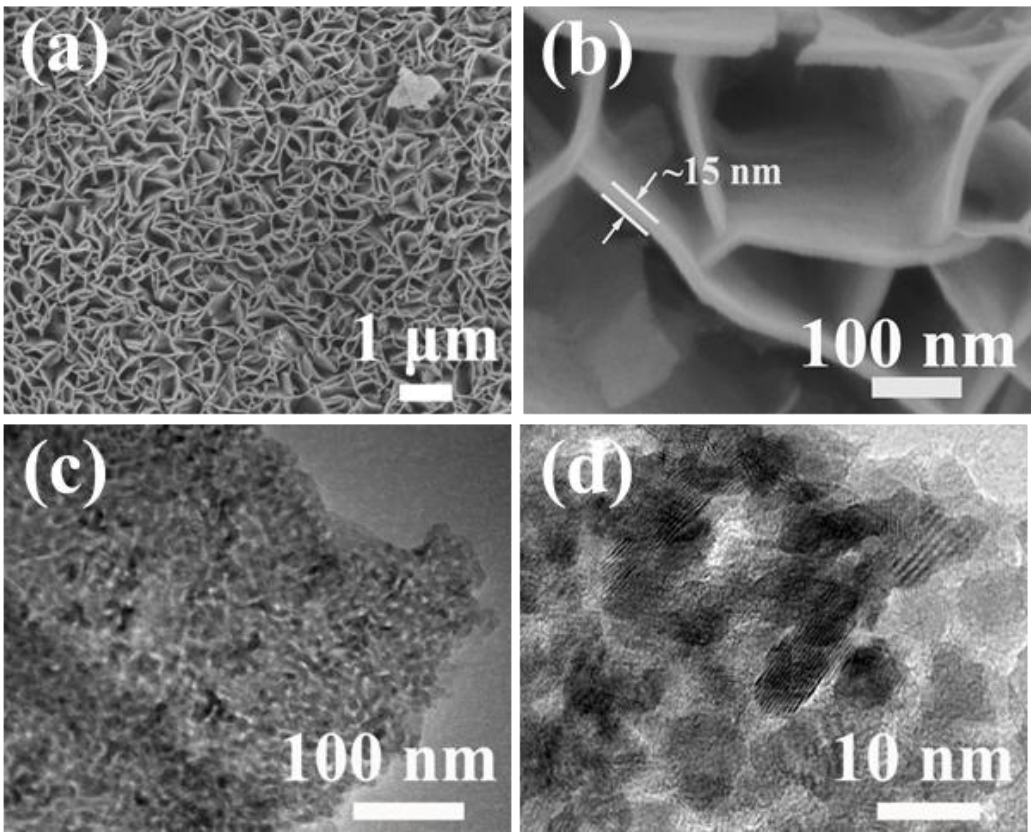

Fig. S3. SEM (a, b) and TEM (c, d) images of the Co_3O_4 nanosheets growing directly on Ni foam for comparison.

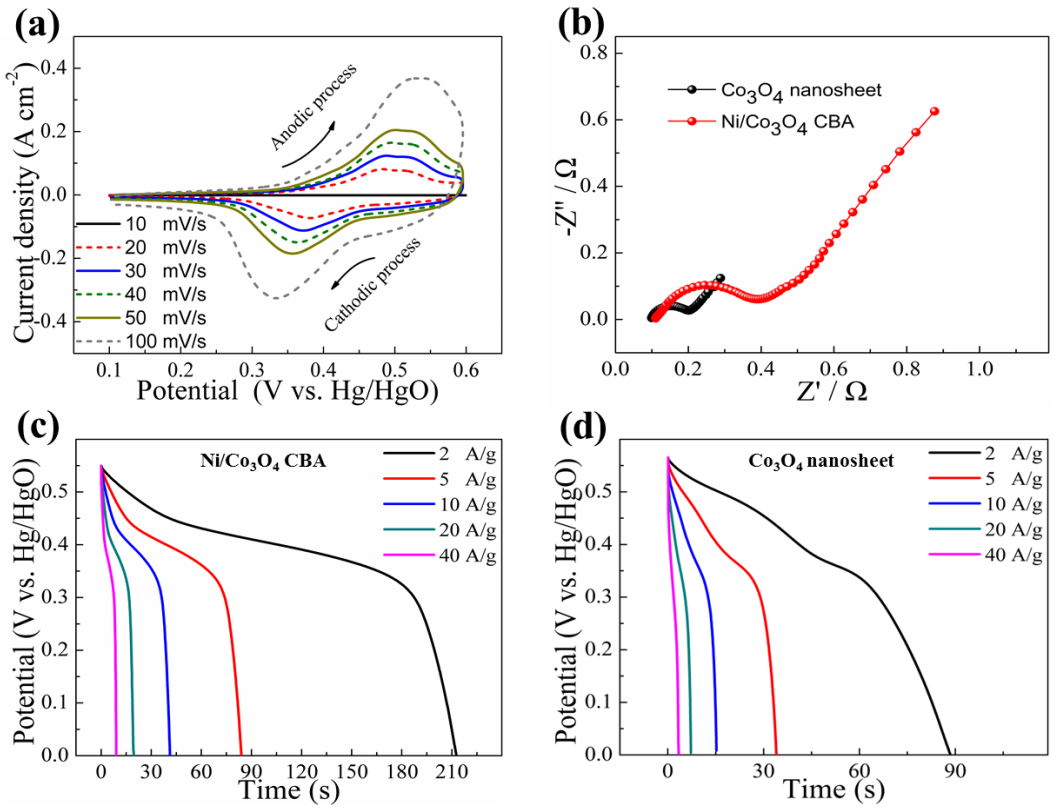

Fig. S4. Electrochemical performances of Co_3O_4 nanosheets and Ni/Co_3O_4 CBAs. (a) CV curves of Ni/Co_3O_4 CBAs at different scanning rates; (b) Nyquist plots of supercapacitors based on Co_3O_4 nanosheet and Ni/Co_3O_4 CBAs electrodes with 100 % depth of discharge; (c) discharge curves of Ni/Co_3O_4 CBAs at different discharge current densities; (d) discharge curves of Co_3O_4 nanosheets at different discharge current densities.

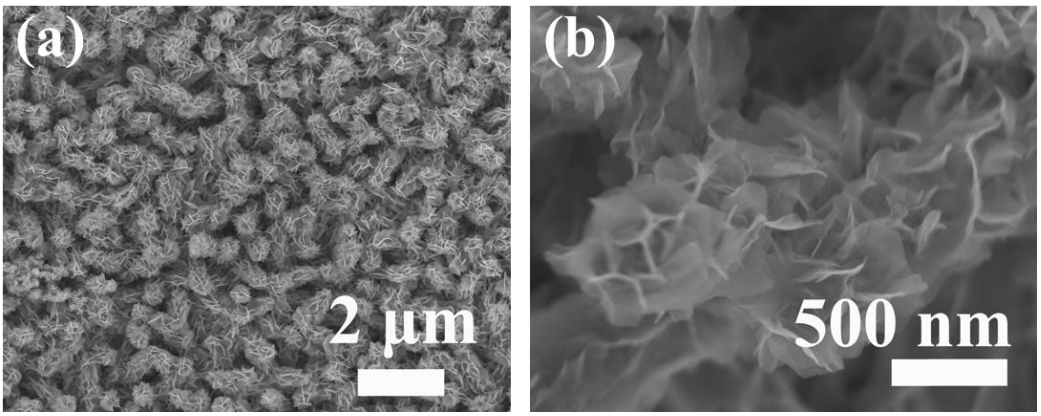

Fig. S5. SEM images of the Ni/Co_3O_4 CBAs after cycling for 10000 cycles.