Nanoscale

Paper

Supporting Information

Rapid, All Dry Procedure Microfabrication of Three-Dimensional Co_3O_4/Pt Nanonetwork for High-Performance Microsupercapacitors

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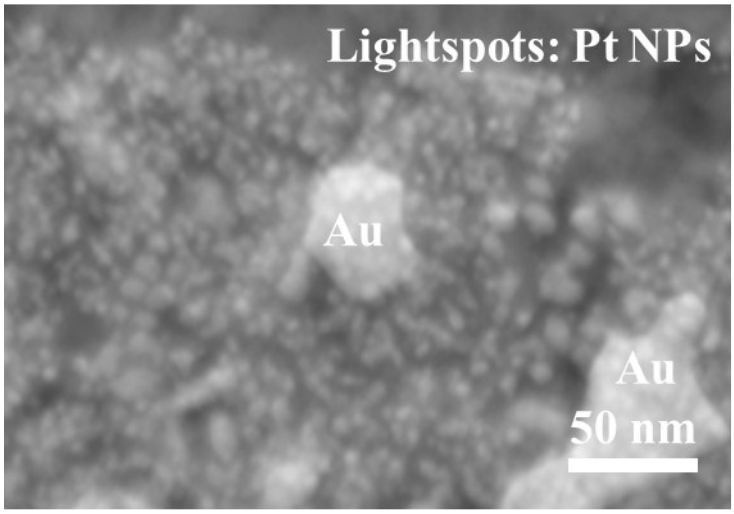

Figure S1 Dark-field TEM image of Co_3O_4/Pt microelectrode.

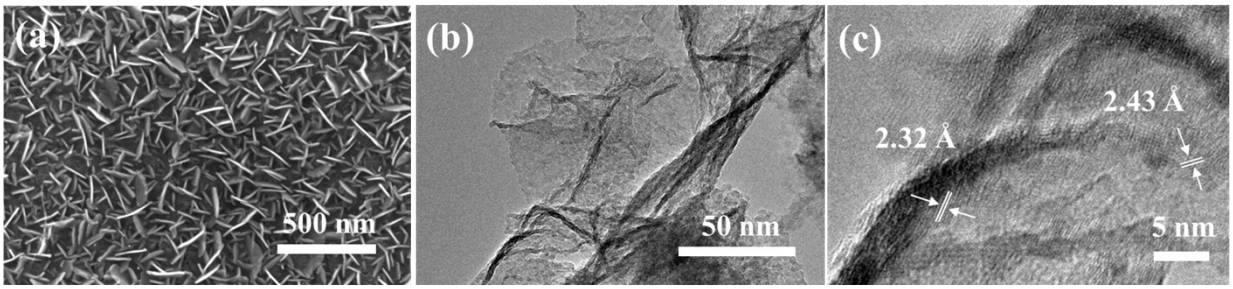

Figure S2 a) FESEM image of Co_3O_4 nanonetwork on the interdigital microelectrode. b-c) TEM and HRTEM images of Co_3O_4 nanonetwork.

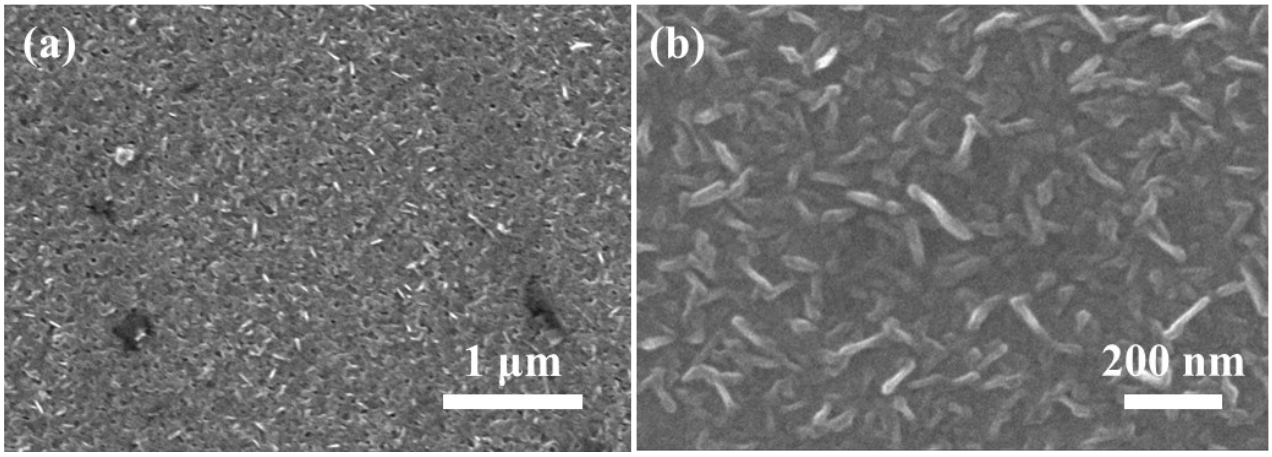

Figure S3 a-b) FESEM images of Co_3O_4/Pt microelectrode after annealing at 450 °C for 5 minutes.

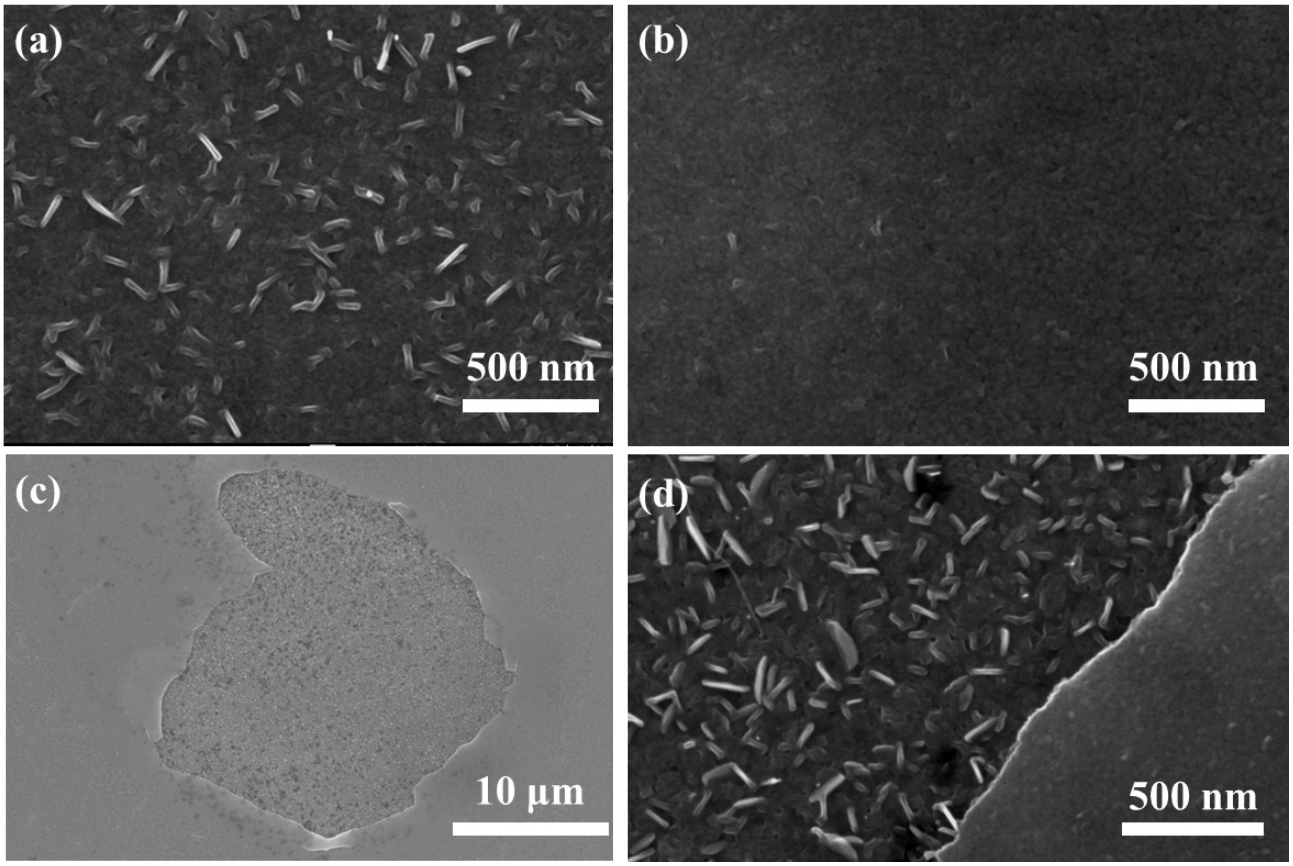

Figure S4 FESEM images of Co_3O_4/Pt microelectrodes with different Pt NPs sputtering time of 160 s (a) and 240 s (b-d).

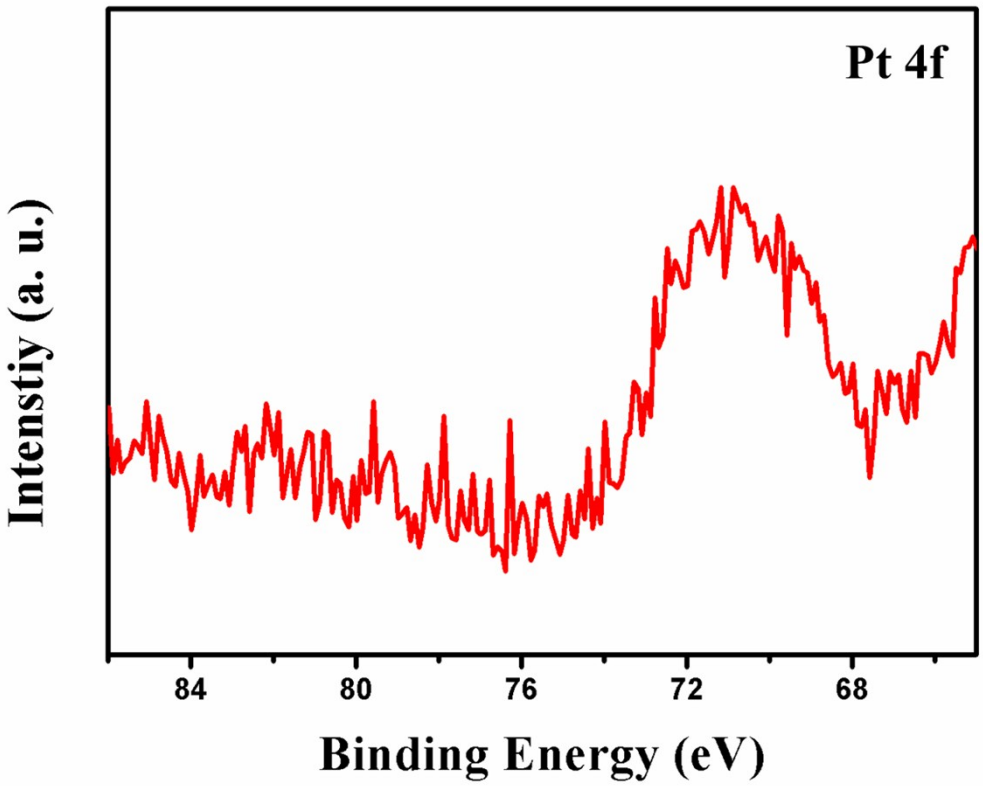

Figure S5 XPS spectrum of the Pt 4f binding energy region of Co_3O_4/Pt microelectrode

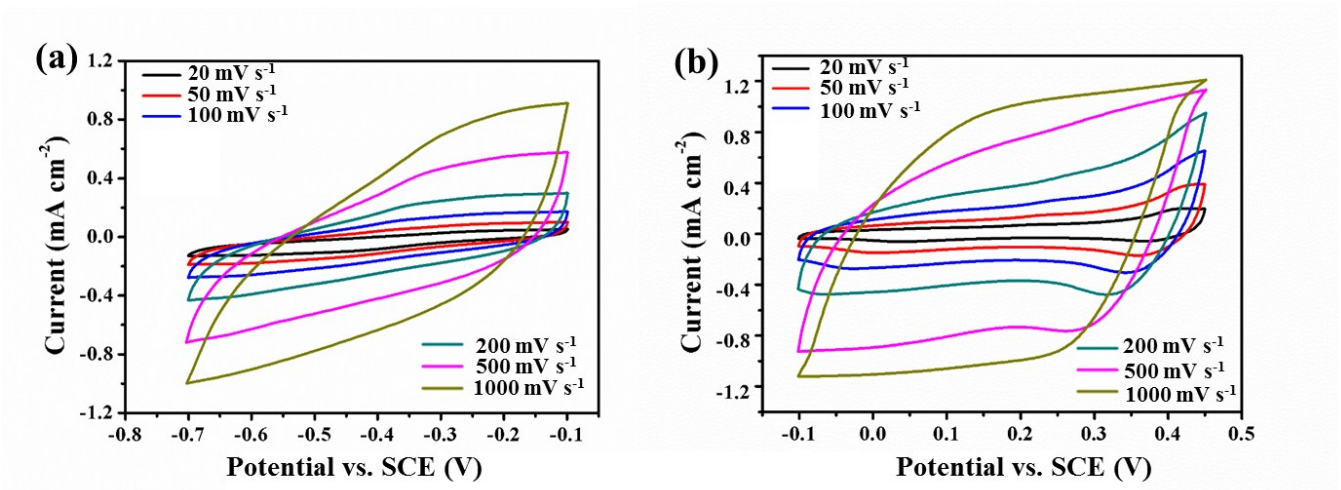

Figure S6 CV curves of Co_3O_4/Pt MSC with potential window from a) -0.7 to -0.1 V *vs.* SCE and b) -0.1 to 0.45 V *vs.* SCE.

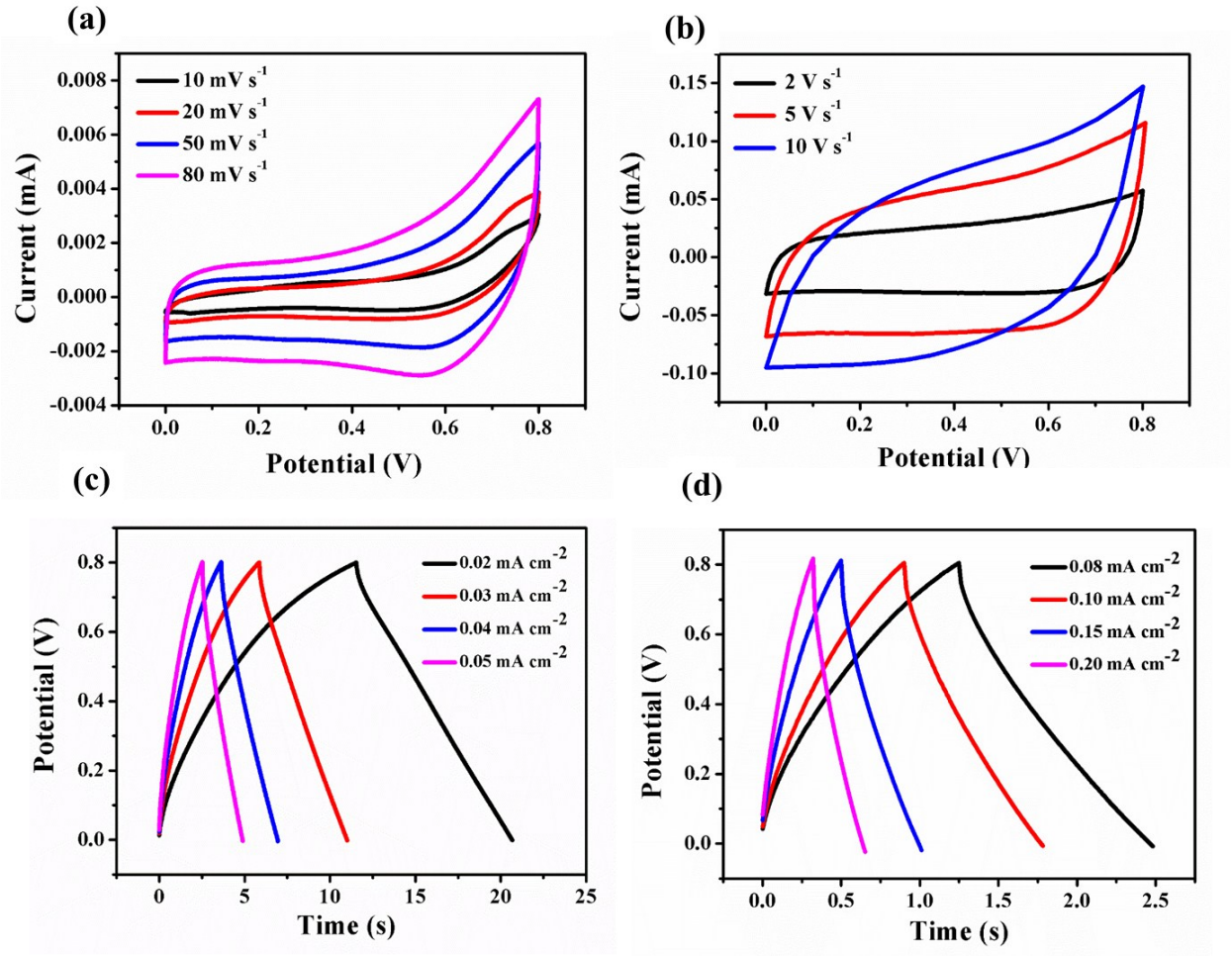

Figure S7 a-b) CV curves of Co_3O_4 MSC at different scan rates in 1 M KOH with potential window from 0 to 0.8 V. c-d) Galvanostatic charge/discharge curves of Co_3O_4 MSC at various current densities.

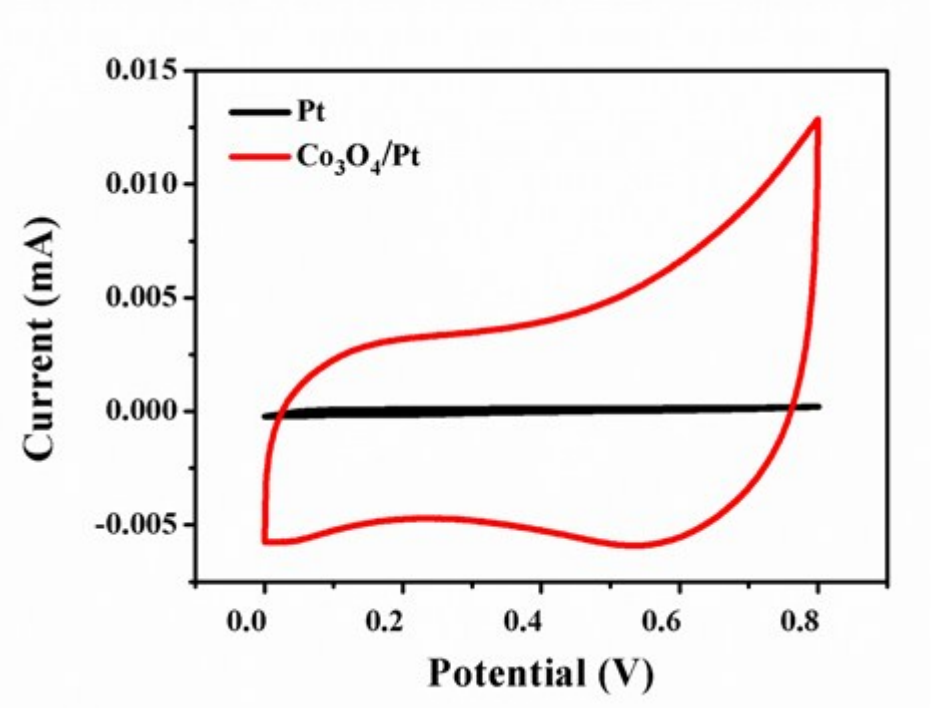

Figure S8 CV curves of Pt and Co_3O_4 MSCs.

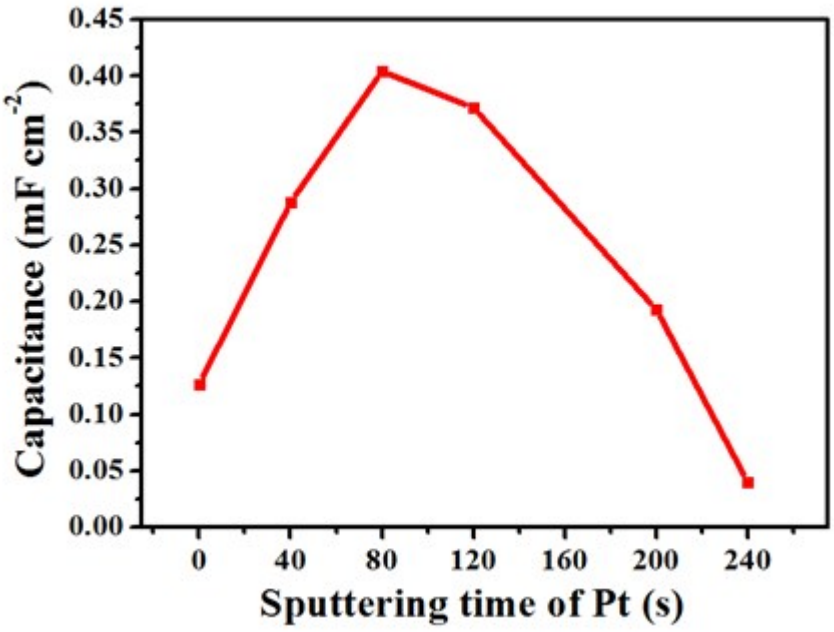

Figure S9 The areal capacitances of Co_3O_4/Pt MSCs with different sputtering time of Pt NPs.

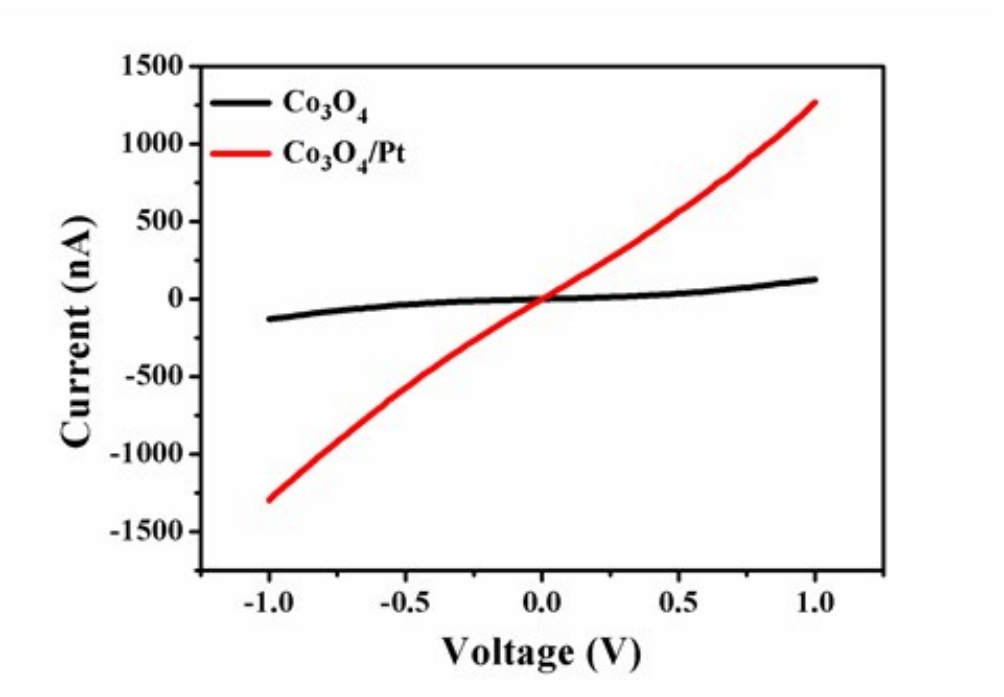

Figure S10 I-V curves of Co_3O_4 and Co_3O_4/Pt microelectrodes.

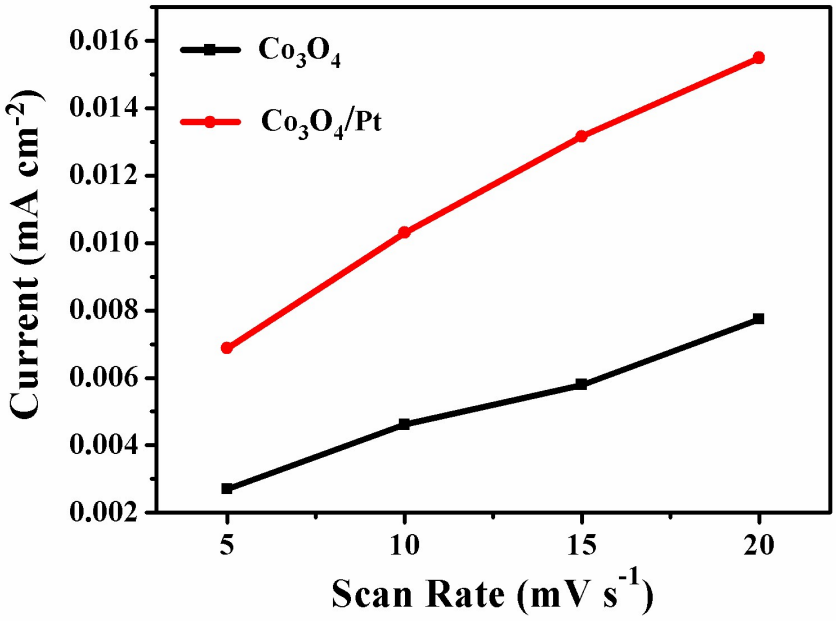

Figure S11 EDLC currents of Co_3O_4 and Co_3O_4/Pt MSCs

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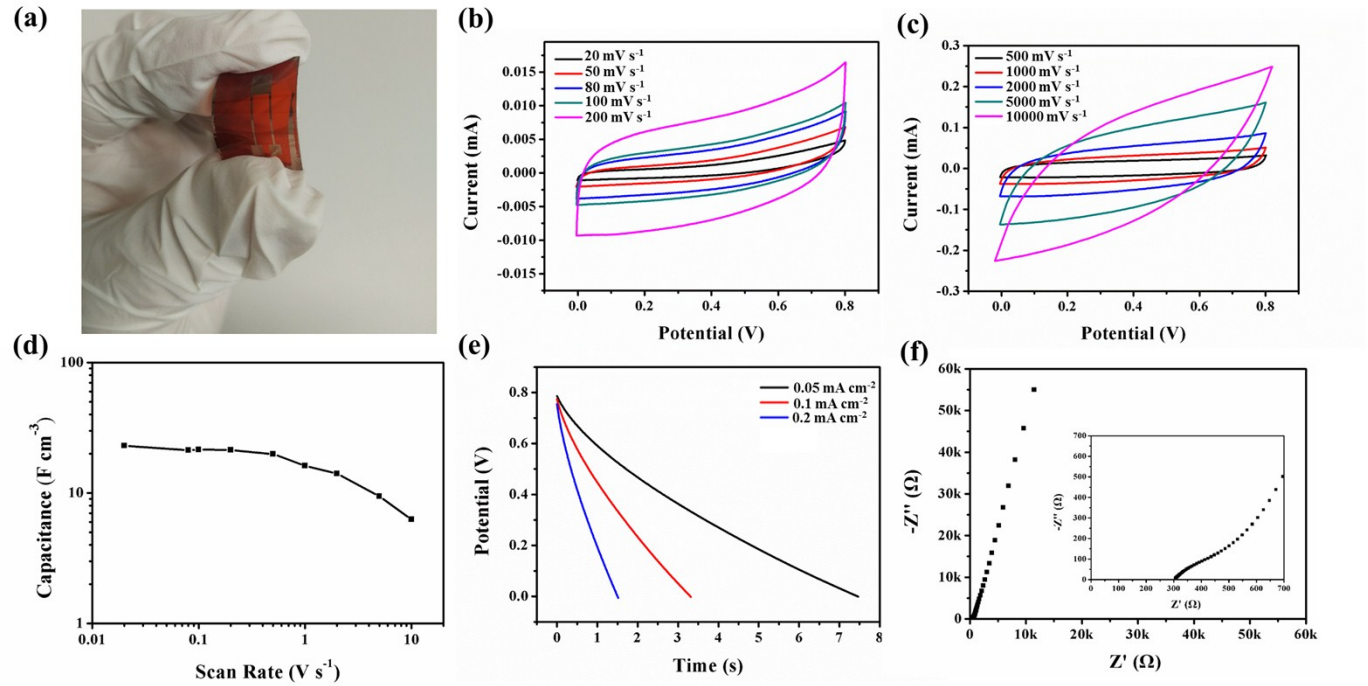

Figure S12 a) Digital image of a flexible Co_3O_4/Pt MSC. b-c) CV curves of flexible Co_3O_4/Pt MSC at different scan rates with potential window from 0 to 0.8 V. d) The volume capacitance of Co_3O_4/Pt MSC at different scan rates. e) Galvanostatic charge/discharge curves of Co_3O_4/Pt MSC at various current densities. f) Nyquist plots of Co_3O_4/Pt and Co_3O_4 MSCs. The inset shows the high-frequency region.

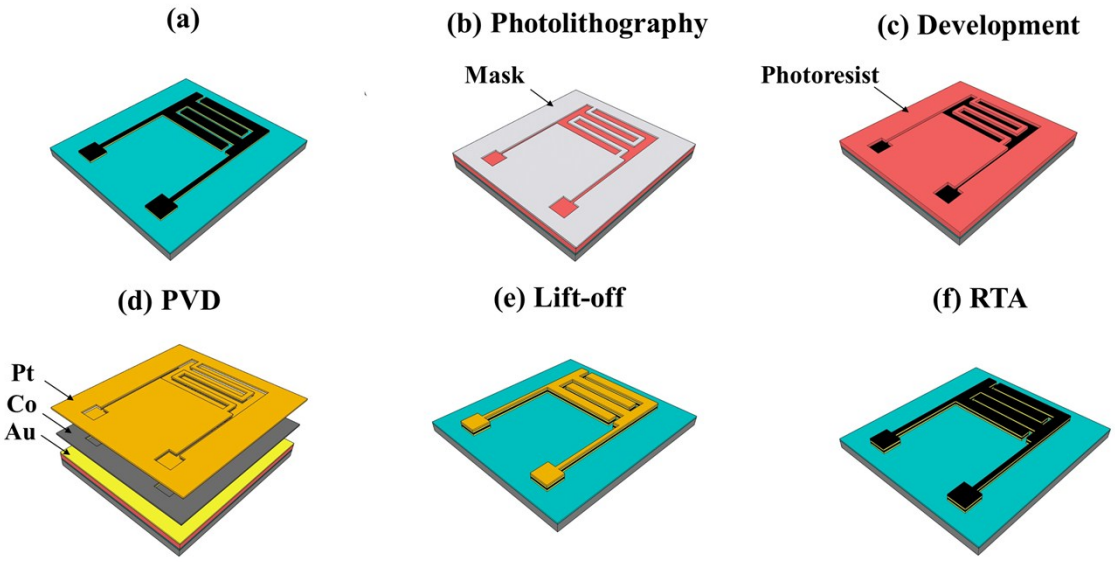

Figure S13 a-f) Schematic illustration of the microfabrication process of on-chip DMSC

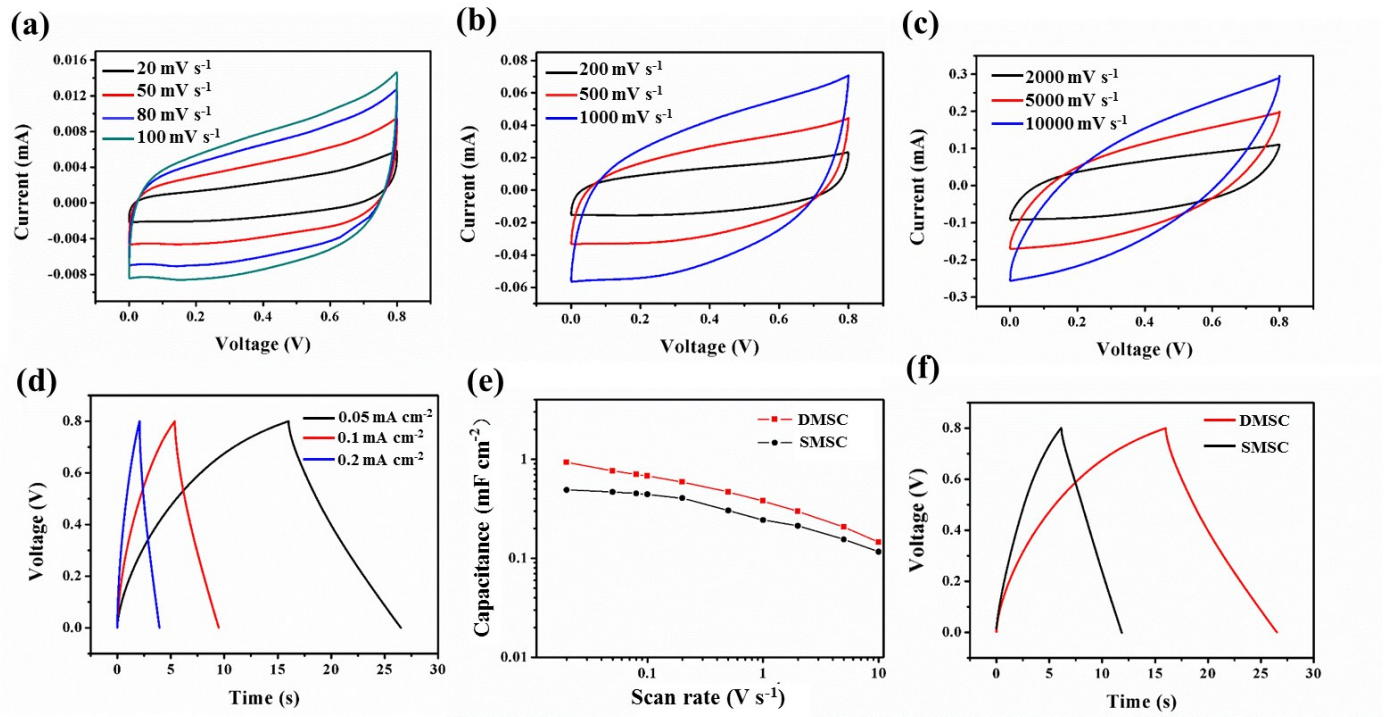

Figure S14 a-c) CV curves of DMSC at different scan rates with potential window from 0 to 0.8 V. d) Galvanostatic charge/discharge curves of DMSC at various current densities e) Evolution of the area capacitance of DMSC and SMSC at different scan rates. f) Galvanostatic charge/discharge curves of DMSC and SMSC at a current density of 0.05mA cm^{-2}.