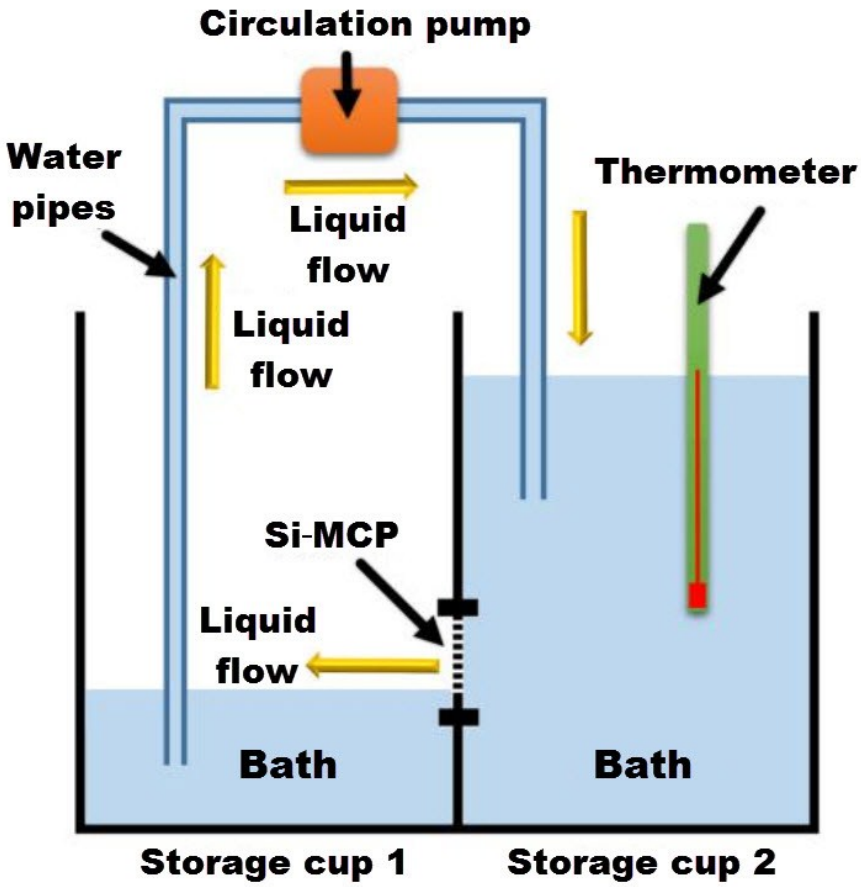



**Fig. S1** The schematic diagram of the device for the liquid flow plating method and the way to deposit a dense nickel layer on the surface and sidewall of Si-MCP. Under the action of gravity and water pump, the deposition fluid flows continuously through the surface and interior of the Si-MCP that obtain the OMEP with a dense and uniform nickel layer.

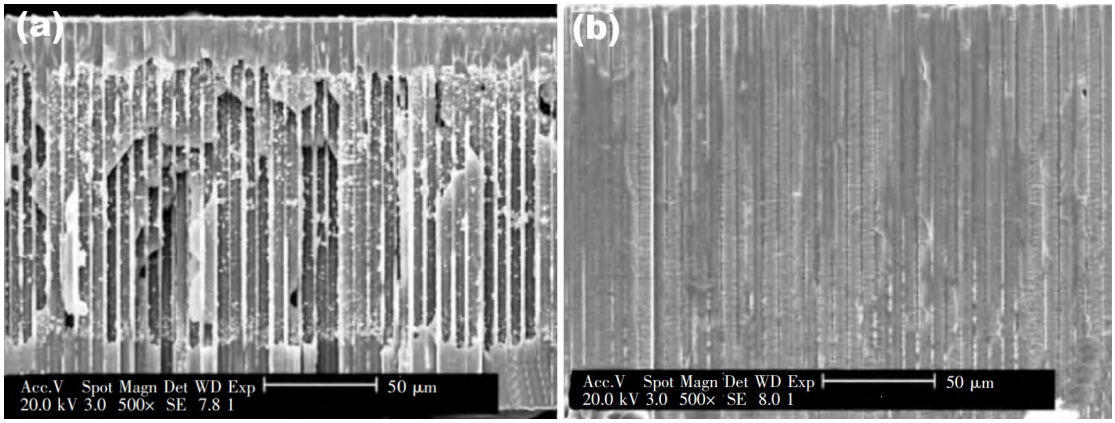



**Fig. S2** (a) The nickel layer fabricated through the traditional electroless plating method; (b) The nickel layer fabricated through the liquid flow plating method.

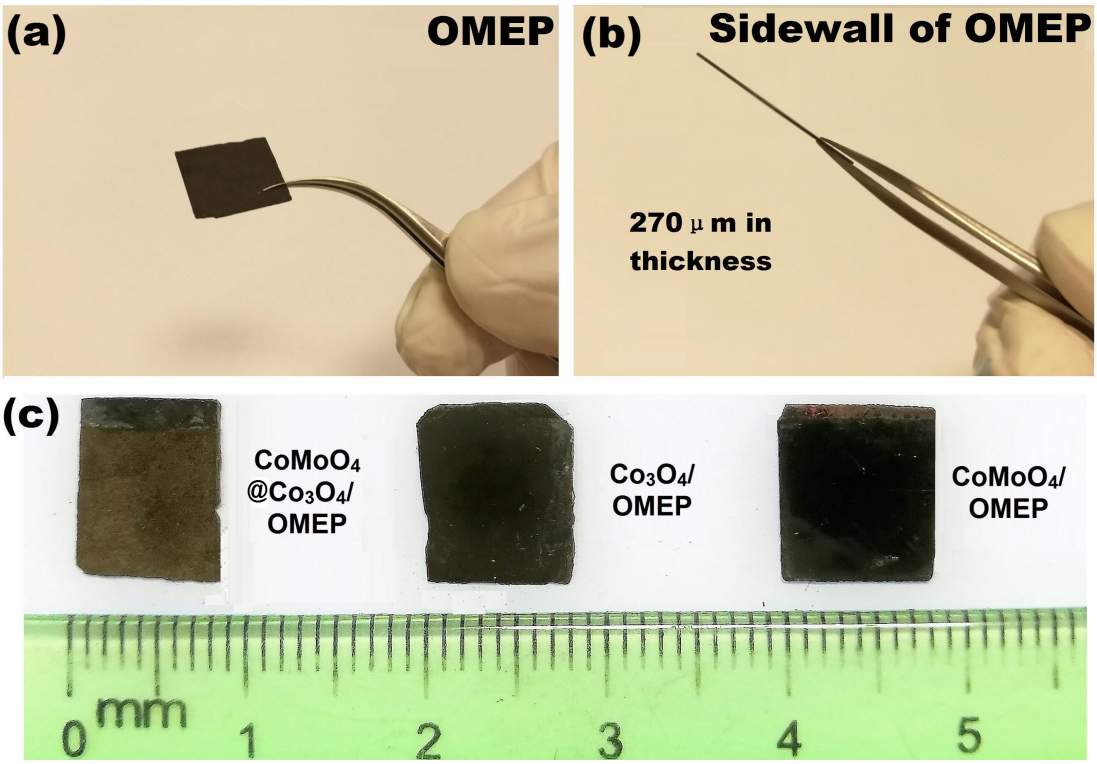
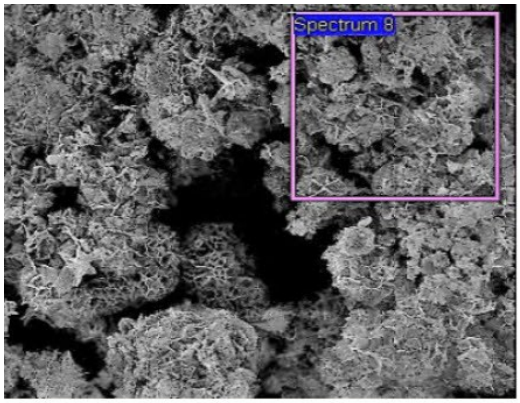



**Fig. S3** (a) Front view of OMEP; (b) Sectional view of OMEP; (c) Samples based on OMEP after the electrochemistry tests (from left to right: $CoMoO_4$@$Co_3O_4$/OMEP, $Co_3O_4$/OMEP, and $CoMoO_4$/OMEP).




| Element | Weight% | Atomic% |
|---|---|---|
| O K | 20.65 | 50.77 |
| Co K | 52.52 | 3.06 |
| Ni K | 12.19 | 8.17 |
| Mo L | 14.65 | 6.01 |
| Totals | 100.00 | |

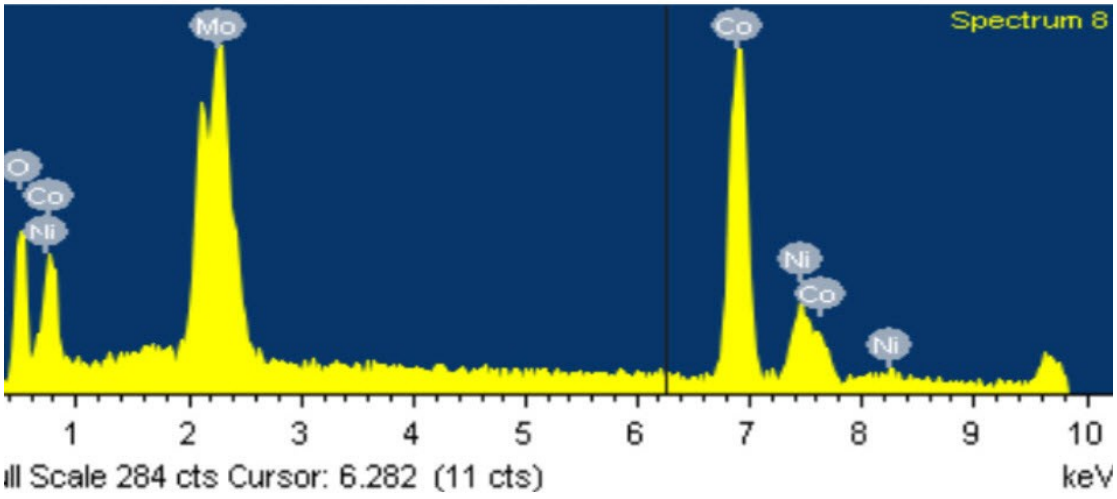



**Fig. S4** EDS spectrum of the $CoMoO_4$@$Co_3O_4$/OMEP electrode.

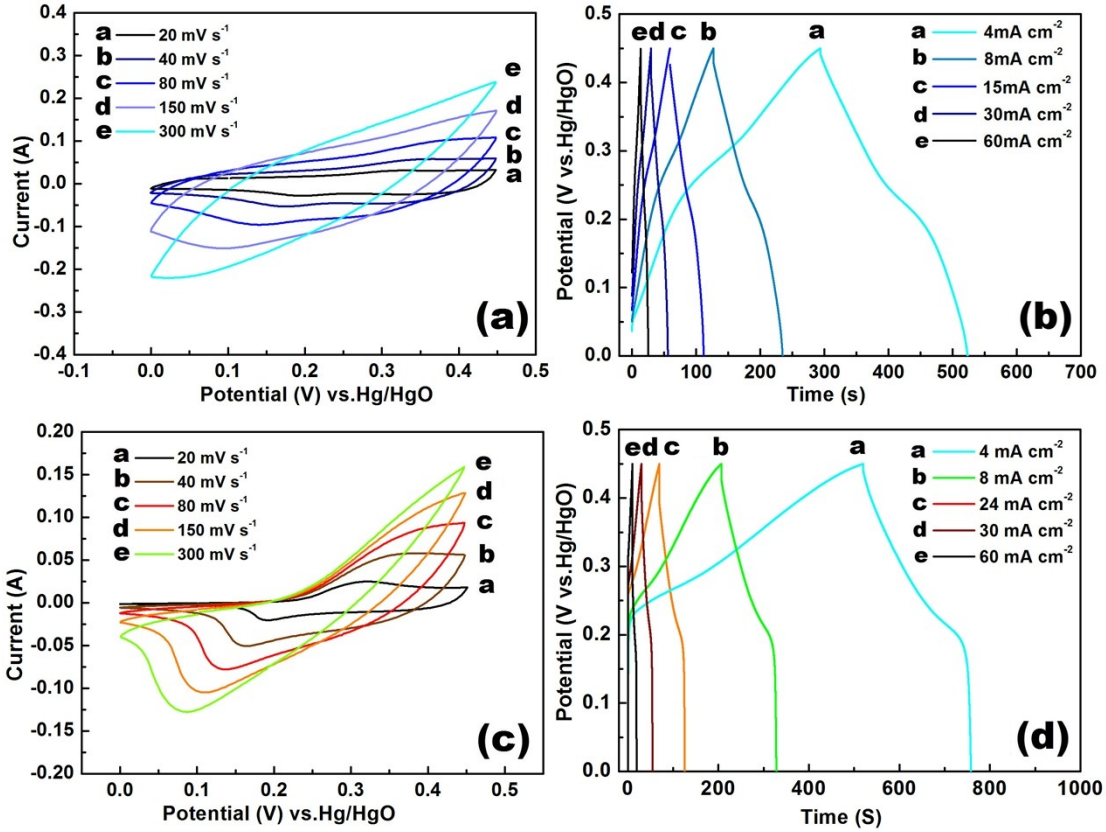



**Fig. S5** (a) CV curves of $CoMoO_4$/OMEP at different scanning rate; (b) First discharge curves of $CoMoO_4$/OMEP at different current density; (c) CV curves of $Co_3O_4$/OMEP at different scanning rates; (d) First discharge curves of $Co_3O_4$/OMEP at different current densities.

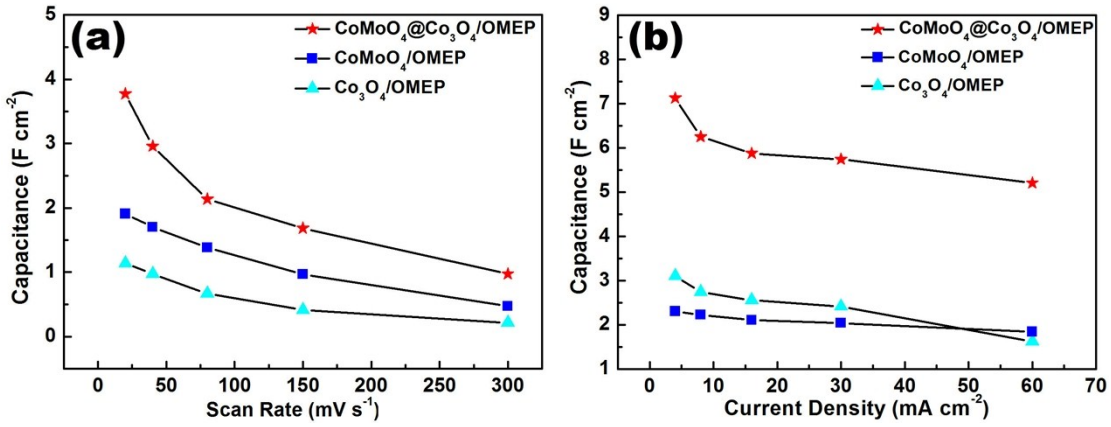



**Fig. S6** (a) Variation of the interfacial capacitances of the $CoMoO_4$@$Co_3O_4$/OMEP, $CoMoO_4$/OMEP, $Co_3O_4$/OMEP electrodes at different scanning rates; (b) Variation of the interfacial capacitances of the $CoMoO_4$@$Co_3O_4$/OMEP, $CoMoO_4$/OMEP, $Co_3O_4$/OMEP electrodes at different current densities.

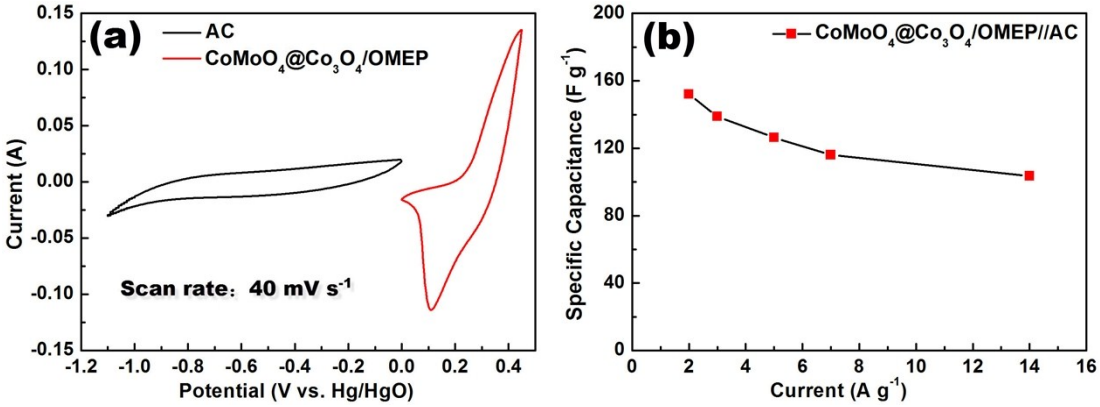



**Fig. S7** (a) CV curves of the composite $CoMoO_4@Co_3O_4$/OMEP (0 to 0.45 V) and AC (-1.1 to 0 V) at a scanning rate of 40 mV $s^{-1}$; (b) Specific capacitance values of the $CoMoO_4@Co_3O_4$/OMEP//AC asymmetrical supercapacitor as a function of current density.