

Supporting Information of

One-pot Construction of Three Dimensional CoMoO₄/Co₃O₄ Hybrid Nanostructures and Their Application in Supercapacitors

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The molar ratio between cobalt and molybdenum salts in the precursor solution was tuned to achieve the morphology and structure evolution of the products, as shown in Figure S1. When the ratio of cobalt and molybdenum salts was 2:1, the XRD pattern in Figure S1d presents two sets of crystalline peaks of CoMoO_4 and Co_3O_4 . However, the proportion of Co_3O_4 content changes from 23% to 31% as the molar ratio rises from 1:1 to 2:1, which were calculated by means of qualitative RIR method. It is worth noting that besides the 3D flower-like structure, some sea-urchin structures were observed in the product. These sea-urchin structures are considered to be Co_3O_4 since the mapping images of the products shows the lacking of molybdenum in the sea-urchin structure. Furthermore, these sea-urchin structures of Co_3O_4 have been widely reported in many papers. [1-3] As the ratio of cobalt and molybdenum salts was 1:2, the XRD pattern in Figure S1e reveals the additional peaks attributed to $\text{NaCo}_{2.31}(\text{MoO}_4)_3$ (JCPDS no.17-0925), besides to CoMoO_4 and Co_3O_4 duo to the increase of molybdenum. Noting that some collapsed $\text{CoMoO}_4/\text{Co}_3\text{O}_4$ hybrid structures are observed in this sample, as shown in Figure S1b, which should be ascribed to the insufficiency of cobalt salt in the solution.

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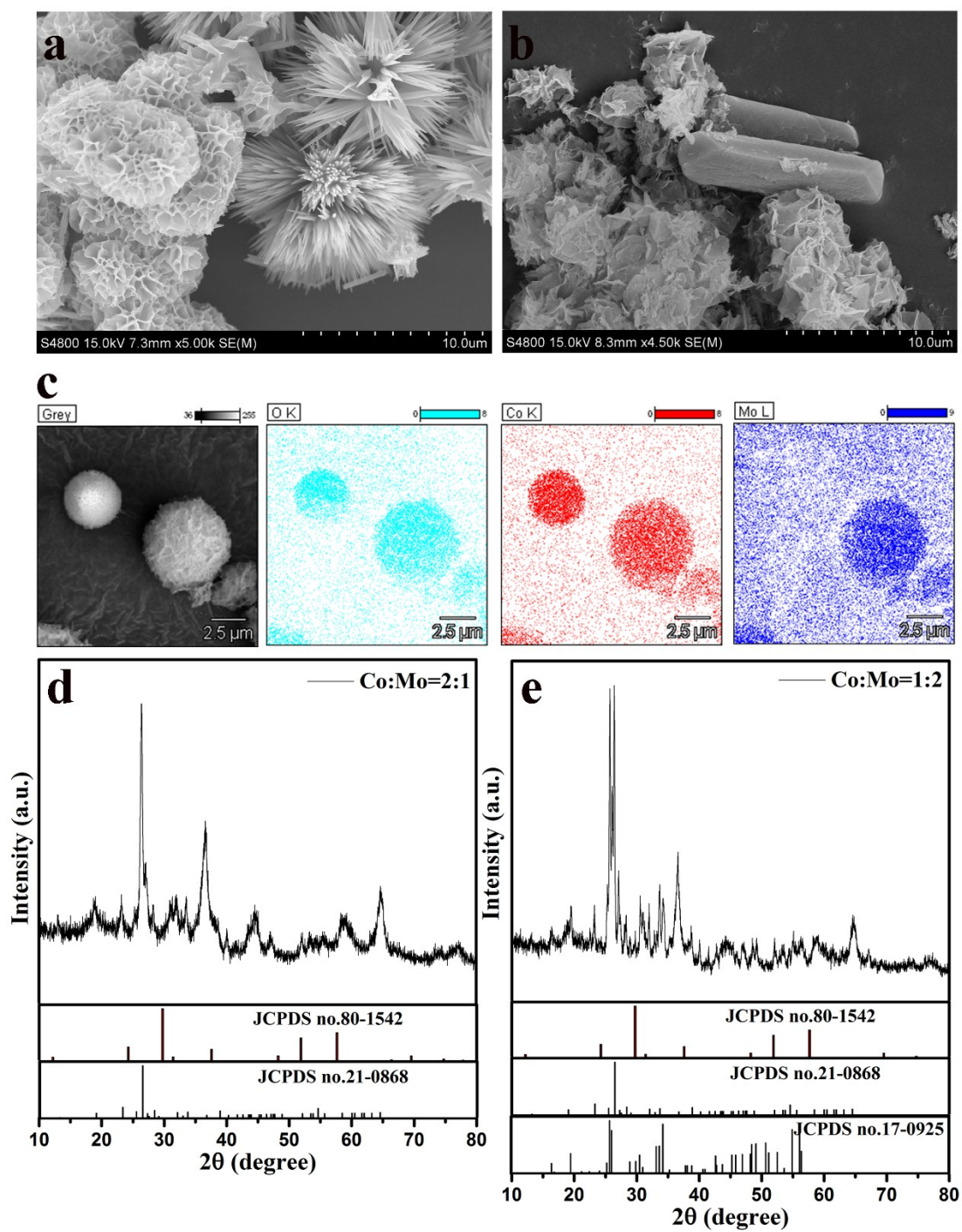


Figure S1. The contrast experiment by adjusting the ratio between cobalt and molybdenum salts. The SEM images of sample S21 (a) and sample S12 (b), the mapping of the sample S21 (c), and the XRD patterns of sample S21 (d) and sample S12 (e).