Supporting Information

Fabrication of calcium oxalate with novel hierarchical structures mediated by amphiphilic phosphoproteins and its adsorptive removal of congo red from aqueous solution

Yan Liu,* Xifang Liu, Huiyuan Mao, Rong Guo*

College of Chemistry and Chemical Engineering, Yangzhou University, Yangzhou, 225002, P. R. China

*To whom correspondence should be addressed. Tel：+86-514-87971802, Fax：+86-514-87311374, Email: yanliu@yzu.edu.cn, guorong@yzu.edu.cn.

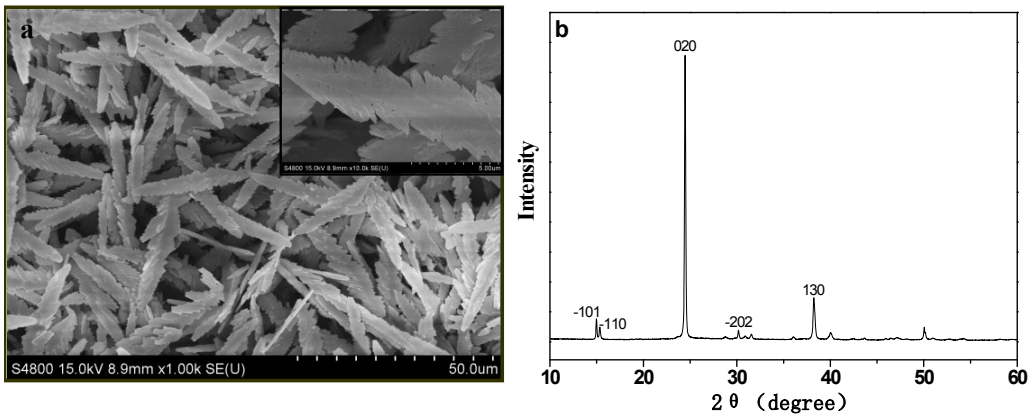

Fig. S1. SEM image (a) and XRD pattern (b) of CaOx obtained in the absence of casein at 25 ± 1 °C, [$CaCl_2$] = 5 mM.

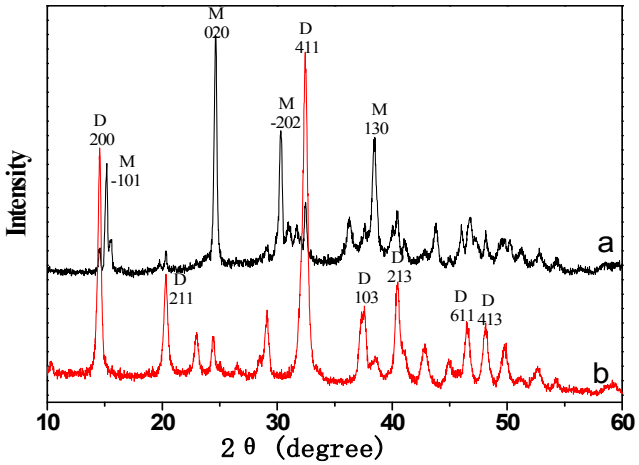

Fig. S2. XRD of CaOx samples obtained in the presence of casein with different concentrations, [$CaCl_2$] = 5 mM, [casein] = 0.2 g L^{-1} (a) and 6 g L^{-1} (b).

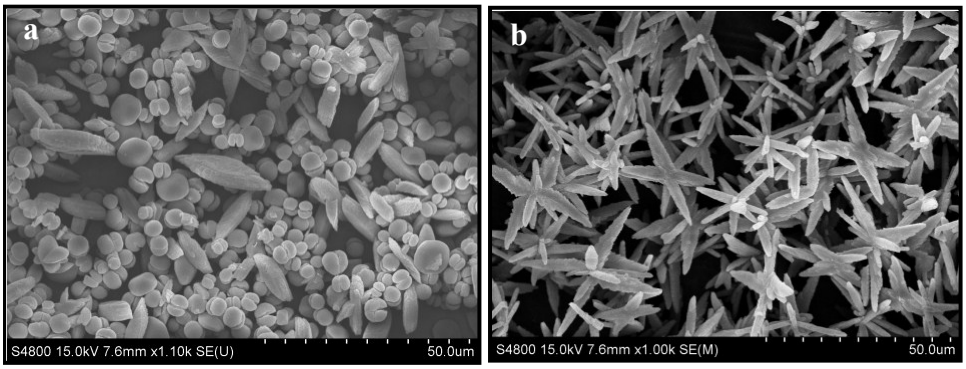

Fig. S3. SEM images of CaOx samples obtained in the presence of 4.0 g L^{-1} casein at (a) pH 10.5 and (b) pH 3.5, [$CaCl_2$] =5 mM.

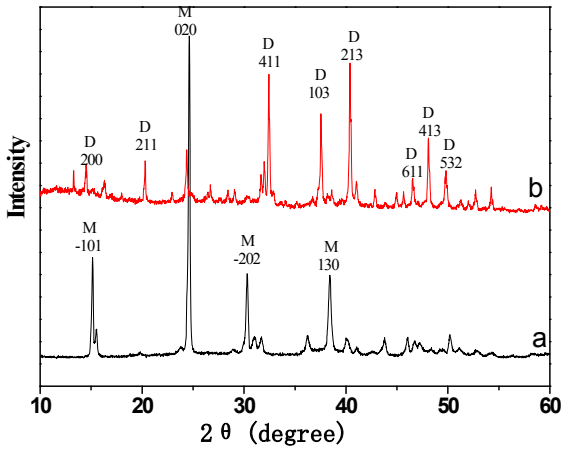

Fig. S4. XRD pattern of CaOx samples obtained in the presence of 4.0 g L^{-1} casein at (a) pH 3.5 and (b) pH 10.5, [$CaCl_2$] = 5 mM.

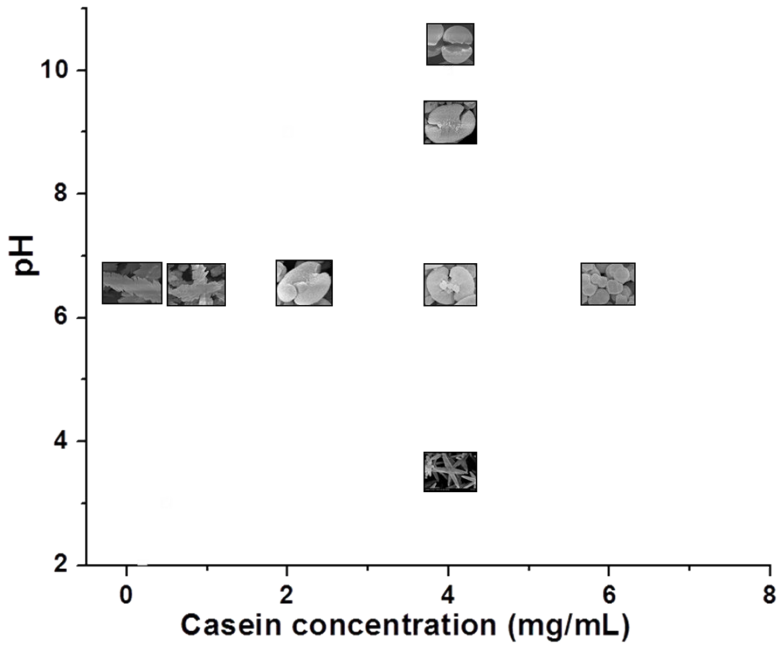

Fig. S5. The morphology diagram with respect to the concentration of casein and pH.

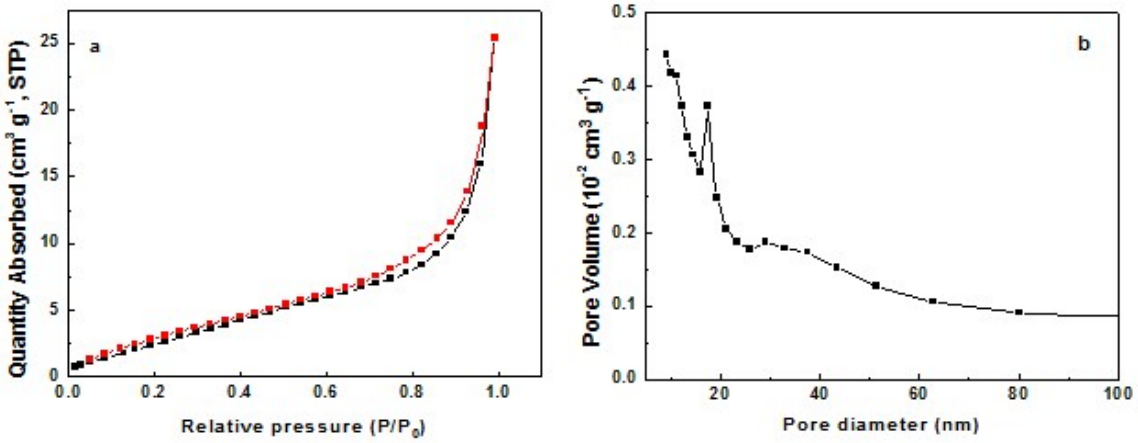

Fig. S6. Nitrogen adsorption-desorption isotherms (A) and Pore-size distribution curves of the double cashew-shaped CaOx.

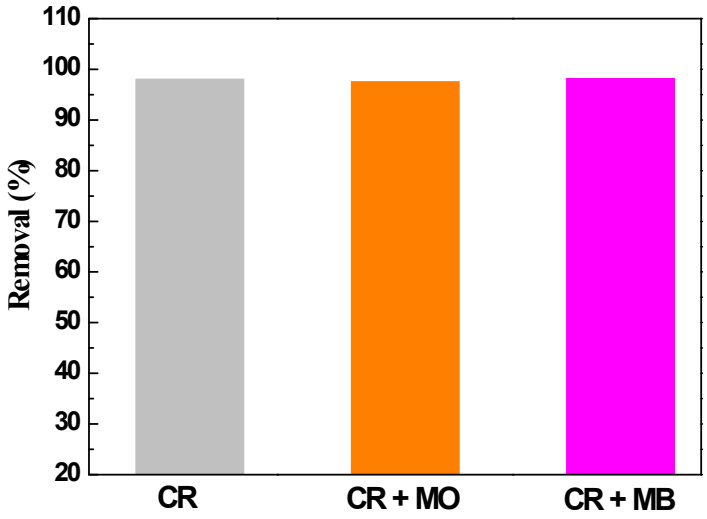

Fig. S7. Removal efficiency of porous double cashew-like CaOx for CR in the absence of and the presence of other dyes;

Table 1. ACDLogP of the studied dyes

Dye	CR	MO	MB
ACDLogP	4.22 ± 0.52	3.14 ± 0.36	4.37 ± 1.04