Electronic Supplementary Material (ESI) for RSC Advances.

Supporting Information.

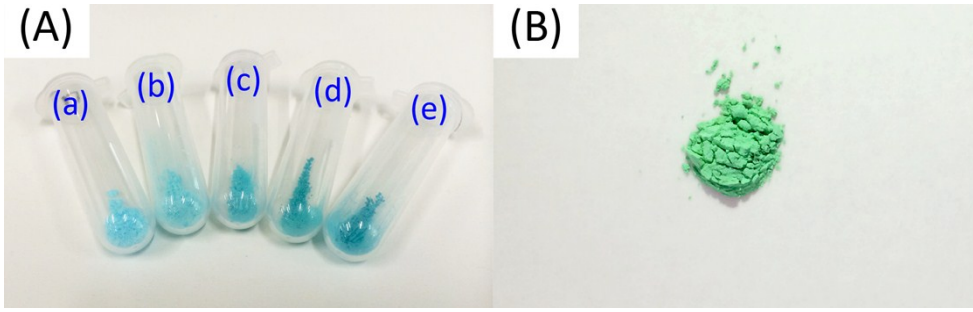

Figure S1. (A) Photograph of $Cu_3(PO_4)_2 \cdot 3H_2O$ and different concentration of hybrid nanoflowers: (a) $Cu_3(PO_4)_2 \cdot 3H_2O$; (b) 0.25 mg/ml; (c) 0.5 mg/mL; (d) 1.0 mg/mL; (e) 2.0 mg/mL.(B) Photograph of hybrid nanoflowers after 700°C calcination.

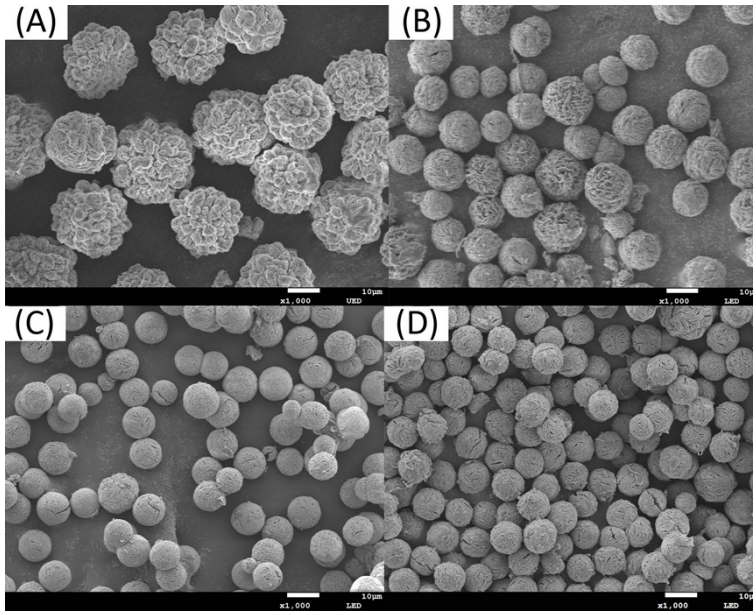

Figure S2. Dispersity of hybrid nanoflowers: (A) 0.25 mg/mL; (B) 0.5 mg/mL; (C) 1.0 mg/mL; (D) 2.0 mg/mL.

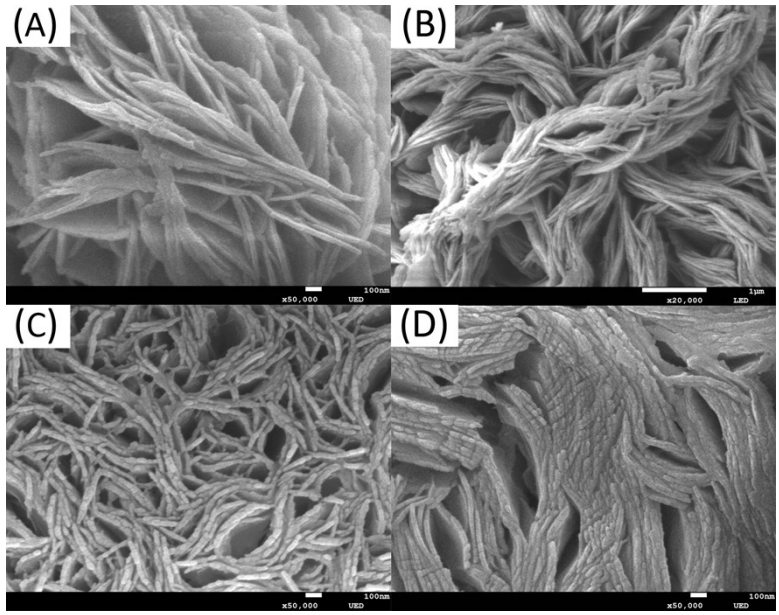

Figure S3. High-resolution SEM images of different papain concentrations on the morphologies of the hybrid nanoflowers' petals: (A) 0.25 mg/mL; (B) 0.5 mg/mL; (C) 1.0 mg/mL; (D) 2.0 mg/mL.

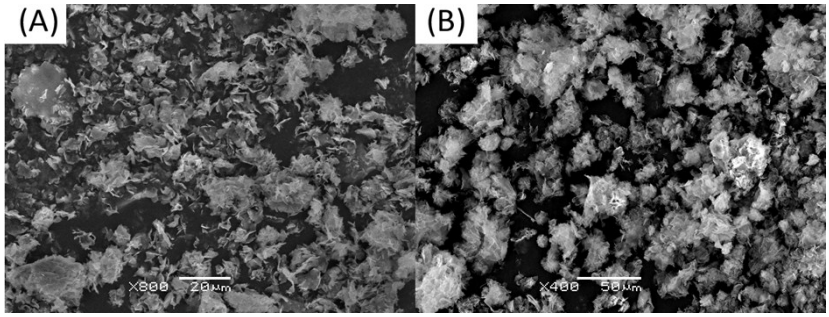

Figure S4. (A) Photograph of crystal of $Cu_3(PO_4)_2 \cdot 3H_2O$ in the absent of papain; (B) Photograph of irregular papain-Cu^{2+} crystals petals (0.125 mg/mL)

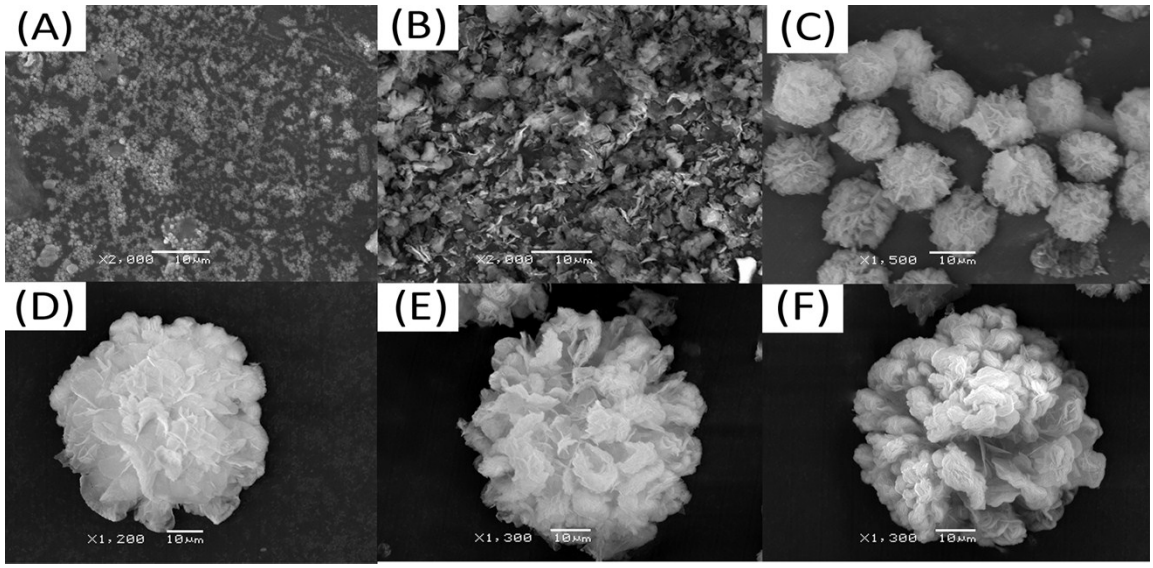

Figure S5. Effect of different incubation time on the morphologies of the hybrid nanoflowers (0.25 mg/mL), (A) 0.5 h; (B) 3 h; (C) 6 h; (D) 12 h; (E) 24 h; (F) 48 h.

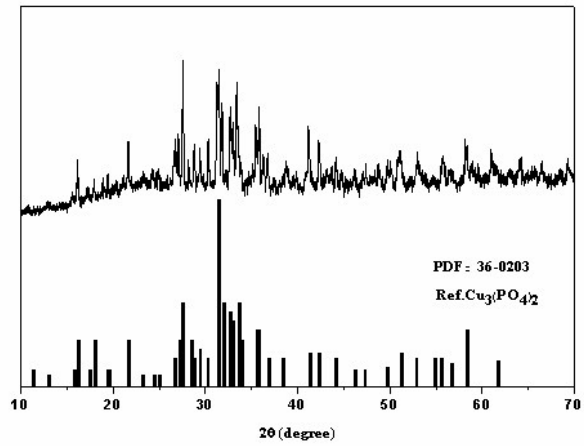

Figure S6. XRD patterns of of hybrid nanoflowers after 700 °C calcination and JCPD Card No. 36-0203.

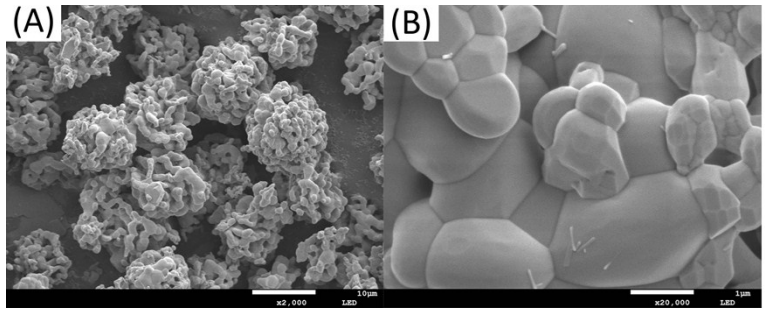

Figure S7. Low-resolution SEM image (A) and high-resolution SEM image (B) of hybrid nanoflowers after 700 °C calcination.

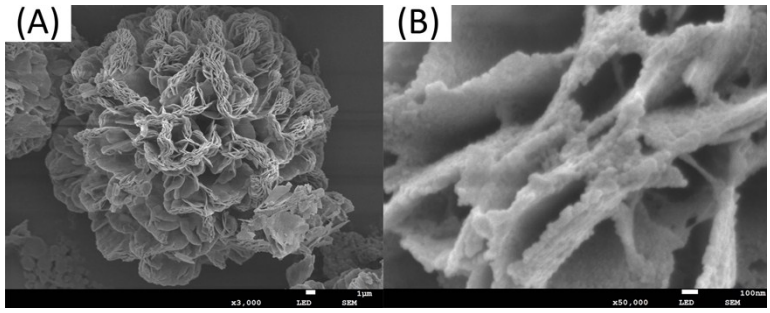

Figure S8. Low-resolution SEM image (A) and high-resolution SEM image (B) of hybrid nanoflowers (0.25 mg/mL) after reacting with BAEE.

Table S1. The enzymatic activity of nanoflowers in recycle

Run Recycles	Enzyme activity (U/mg)	Relatively activity (%)
1	8247±348	100.00±4.23
2	5592±257	67.82±3.12
3	3177±201	38.52±2.44
4	2559±397	31.03±1.36
5	2383±398	28.90±4.82
6	1366±78	16.56±0.95