

## Supporting Information

# **Tunable Properties Induced by Ion Exchange in Multilayer Interwined CuS Microflowers with Hierarchical Structure**

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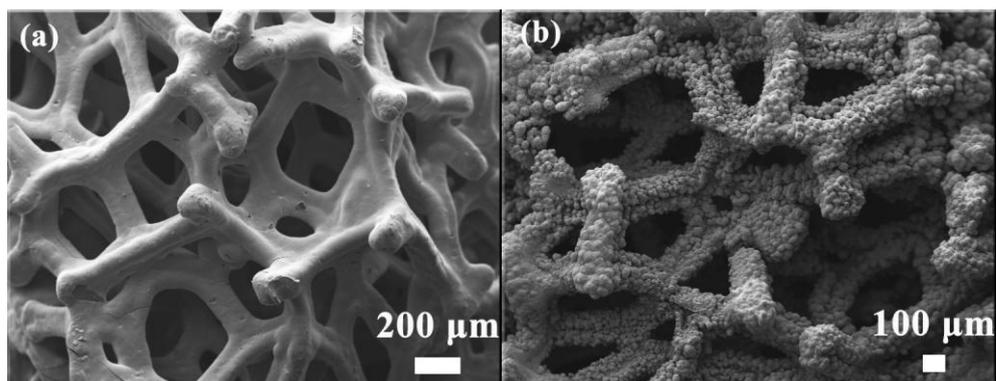


Figure S1 (a) the SEM image of foam copper, (b) the SEM image of Sample 1.

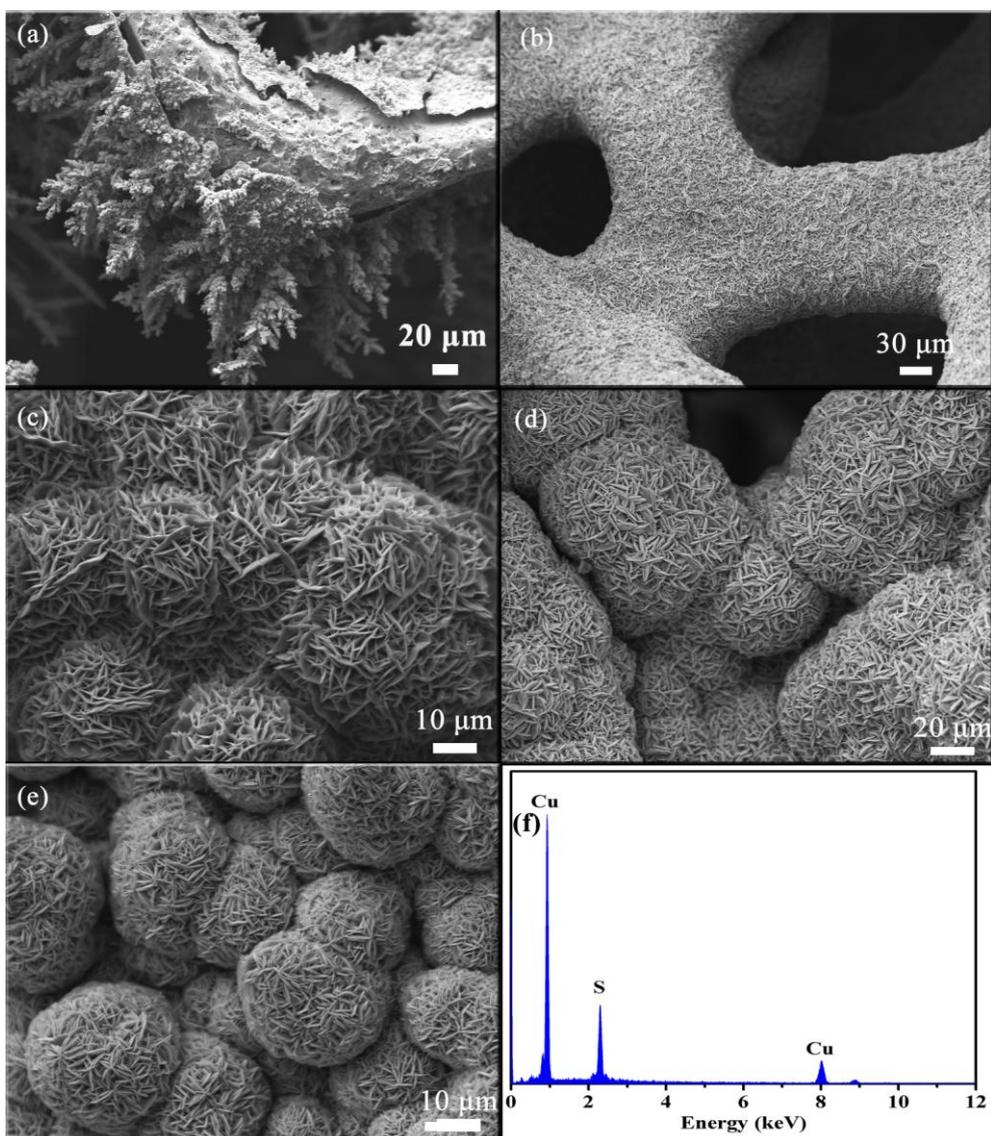


Figure S2 (a-e) the SEM images of Sample 3, 2, 4, 5, and 6. (f) EDS spectra of Sample 2.

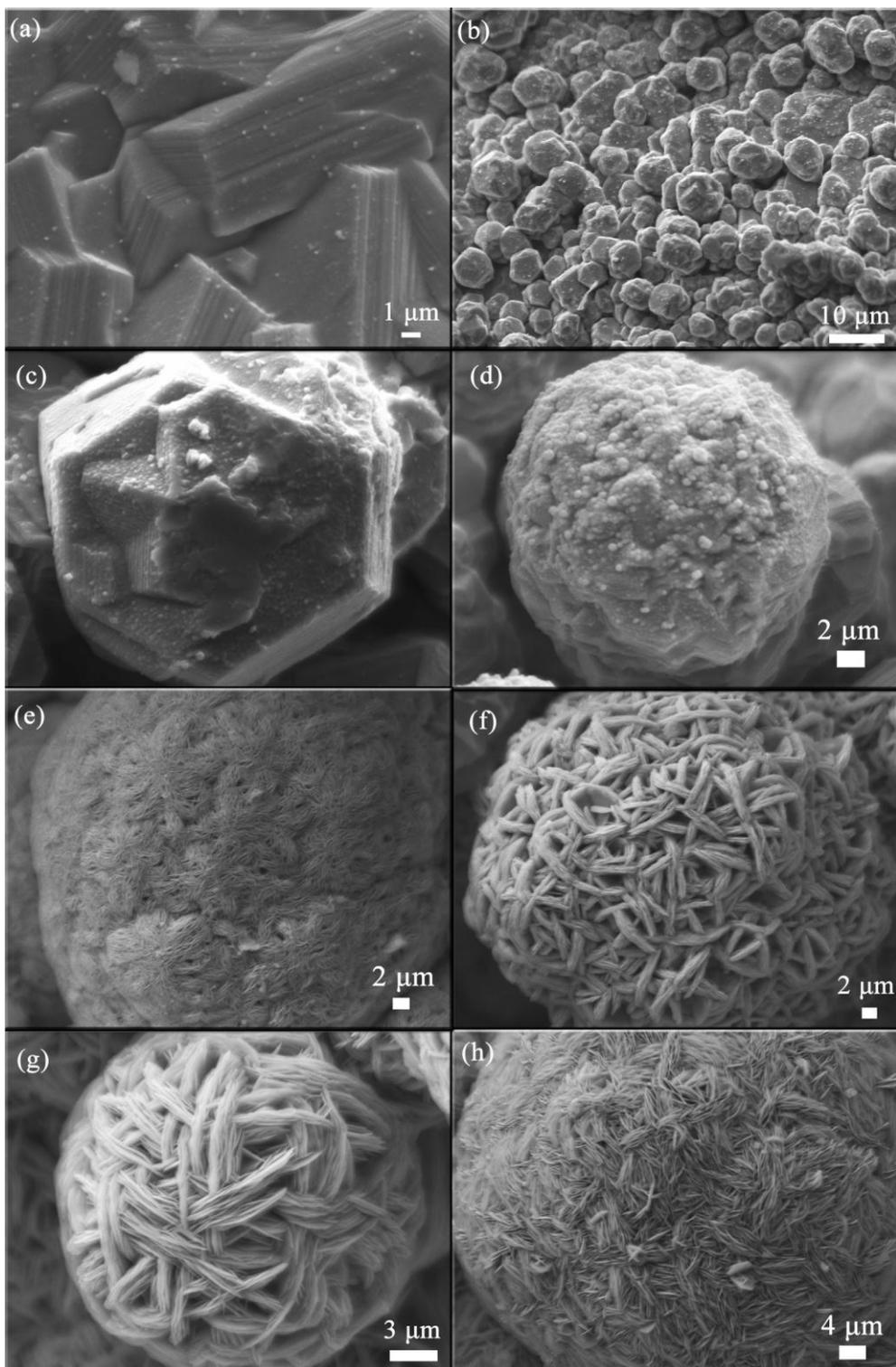
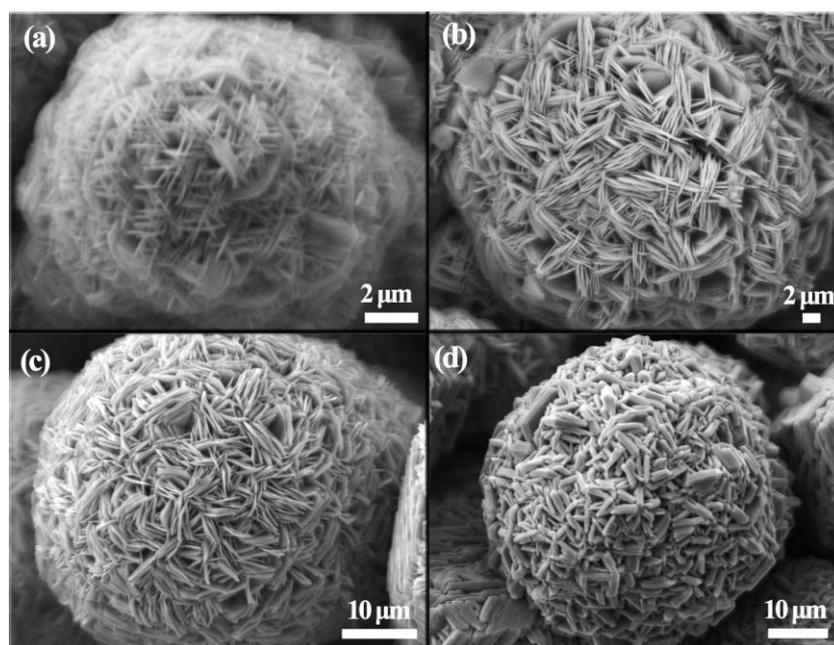
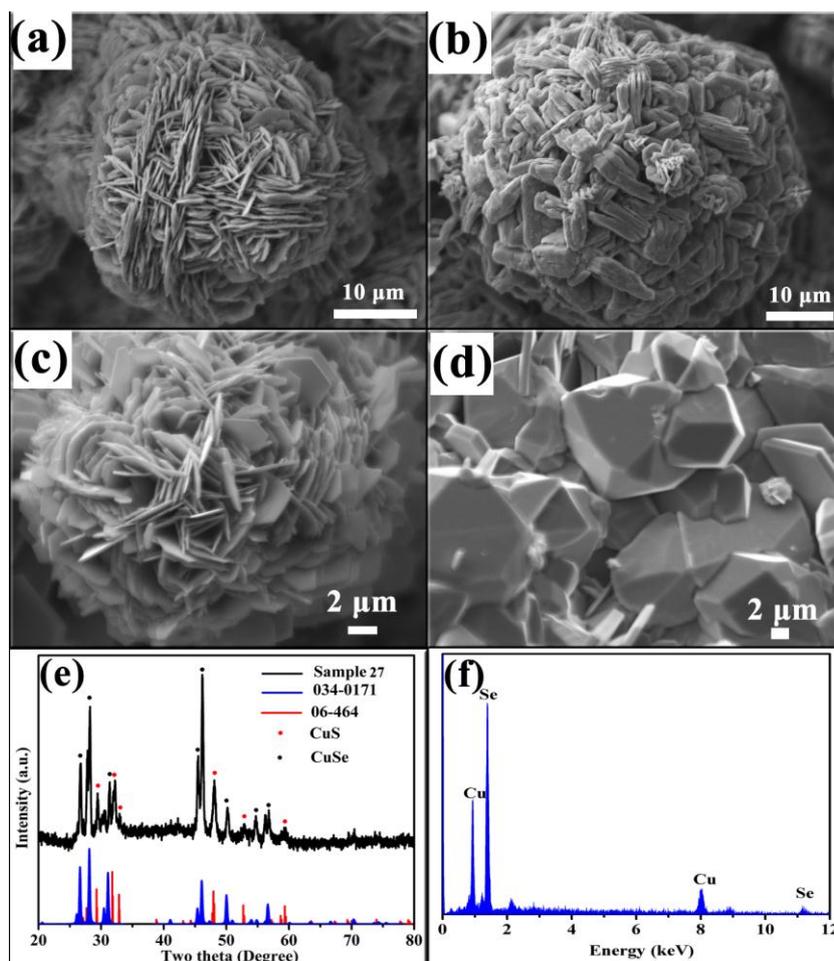


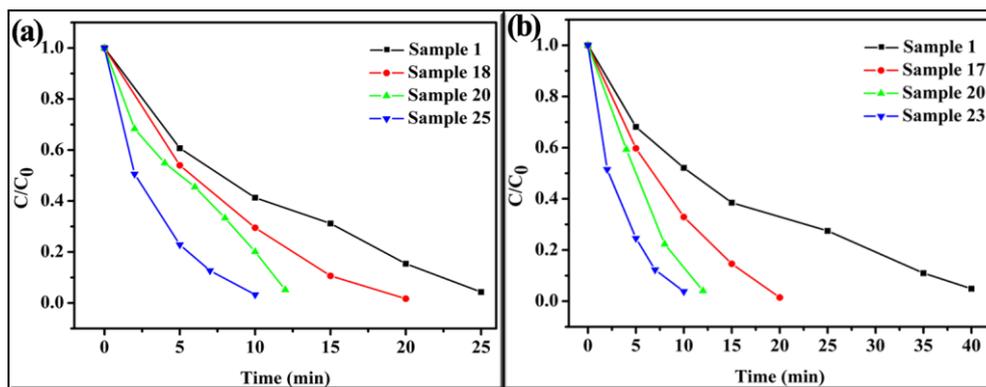
Figure S3 (a) the SEM image of Sample 8, (b-c) the SEM image of Sample 9, (d) the SEM image of Sample 10, (e) the SEM image of Sample 11, (f) the SEM image of Sample 12, (g) the SEM image of Sample 13, (h) the SEM image of Sample 14.



**Figure 4S** (a-d) the SEM images of CuS microspheres obtained under 40 °C, 80 °C, 100 °C and 120 °C.



**Figure S5** (a) SEM image of Sample **15**, (b) SEM image of Sample **26**, (c) SEM image of Sample **27**, (d) SEM image of Sample **28**, (e) XRD pattern of Sample **27**, (f) EDS spectra of Sample **28**.



**Figure S6** Comparison of the photodegradation of (a) MB and (b) RB over the synthesized samples under UV irradiation.