Electronic Supplementary Information

Fig. S1. FTIR spectra of the original wing, the activated wing, the Cd$^{2+}$-wing and the product CdS/wing. To clarify the evolution of 1728 cm$^{-1}$ band and 1415 cm$^{-1}$ band, the curves are shifted vertically.

Fig. S2. (a) Low and (b) high magnification FESEM images of the sample prepared with only Step II. The comparison of the samples prepared with (Fig. 7f) and without (Fig. S2) EDTA/DMF activation (both skip Step I) again proves the efficiency of the additional COO$^-$ active sites. (P. S.: The wing of male butterflies *Euploea mulciber* is corresponded.)