Efficient photocurrent generation by SnO_2 electrode modified electrophoretically with composite clusters of porphyrin-modified silica microparticle and fullerene

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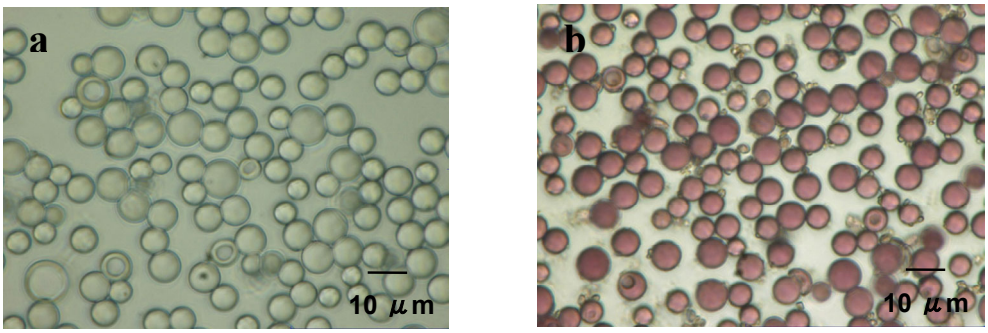
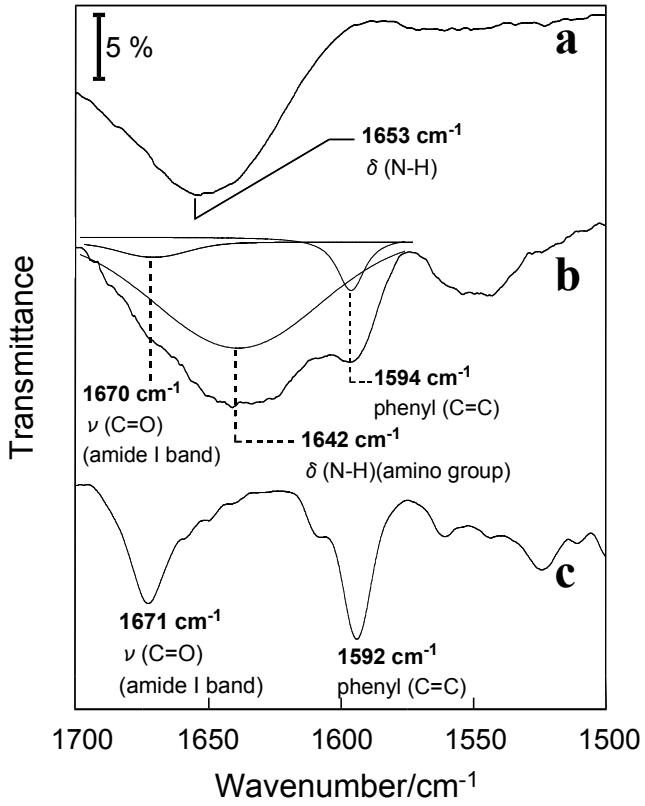
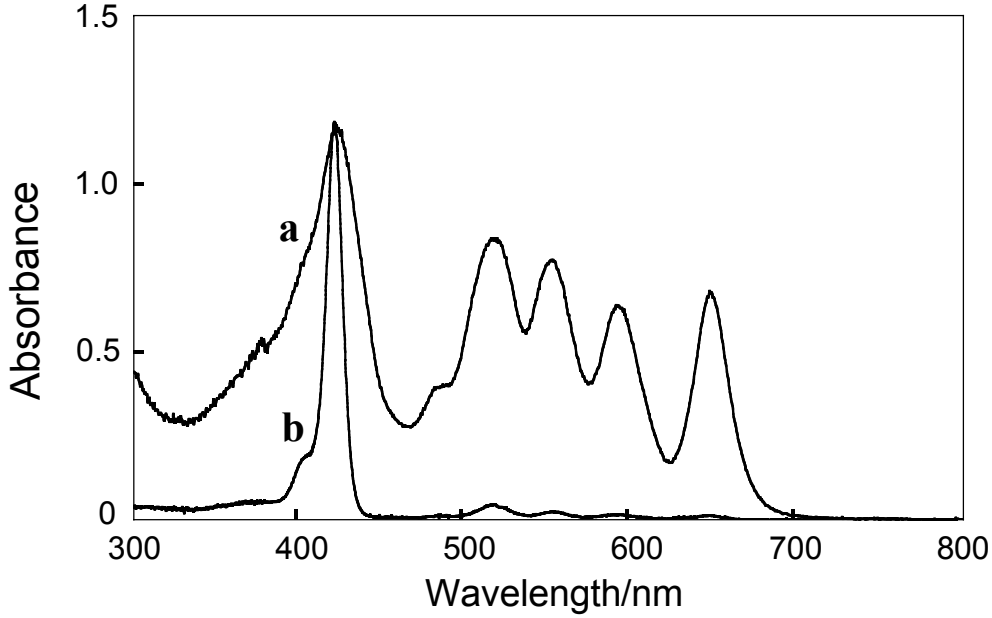
Optical microscopic images of **2** (a) and **3** (b) measured by using VHX-200 (Keyence) (S1):



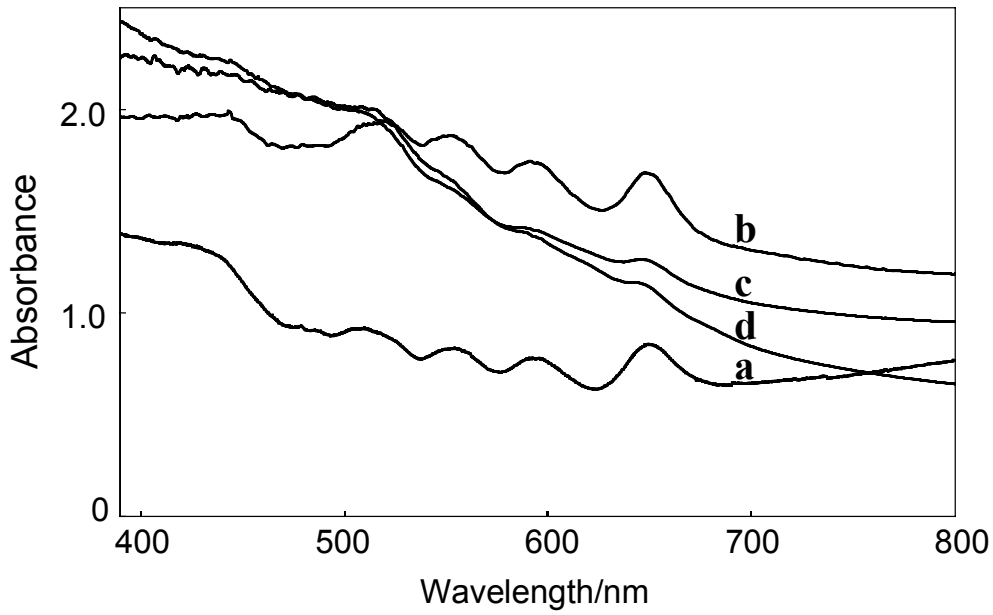
IR spectra of **2** (a), **3** (b), and **4** (c) (1500-1700 cm^{-1}) measured in KBr pellet (The spectrum of **3** in the wavenumber of 1700-1575 cm^{-1} also shows fitted component peaks at 1670, 1642, 1594 cm^{-1} which are assigned to -CONH, $-NH_2$, and phenyl groups.) (S2):



Diffuse reflectance absorption spectrum of **3** (a) and absorption spectrum of **4** (2.55×10^{-6} M) in $CHCl_3$ (b) (The spectrum of **3** is normalized at the Soret band for comparison.) (S3):



Absorption spectra of ITO/SnO_2/(**3**+C_{60})$_m$ ([C_{60}]= 0 mM (a), 0.17 mM (b), 0.33 mM (c), 0.50 mM (d) in acetonitrile/toluene=2/1; [H_2P]=0.17 mM) (The experimental error is within 5%) (S4):



SEM images of ITO/SnO_2/(**3**+C_{60})$_m$ ([C_{60}]= 0 mM (a) and [C_{60}]= 0.50 mM (b) in acetonitrile/toluene=2/1; [H_2P]=0.17 mM) (S5):