

Figure S1. TEM images of ZnO.

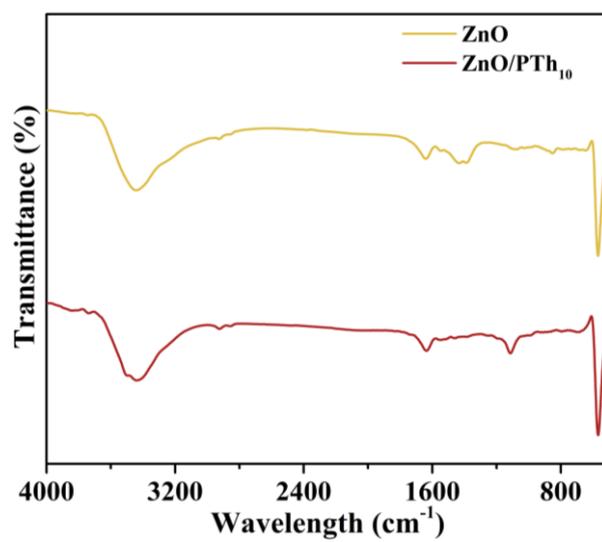
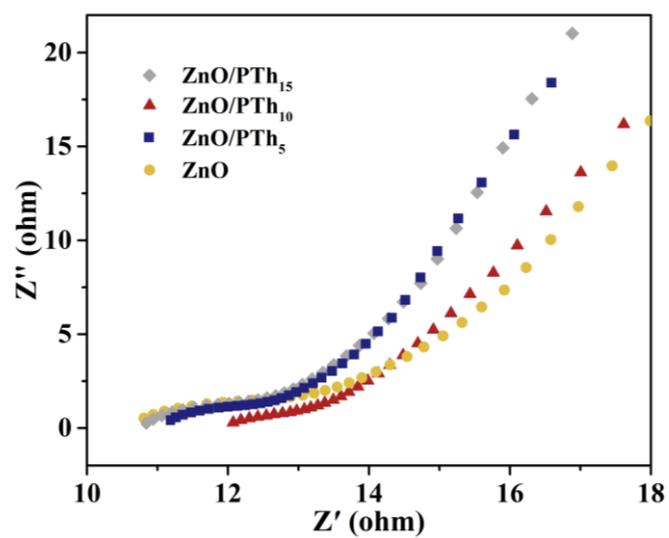
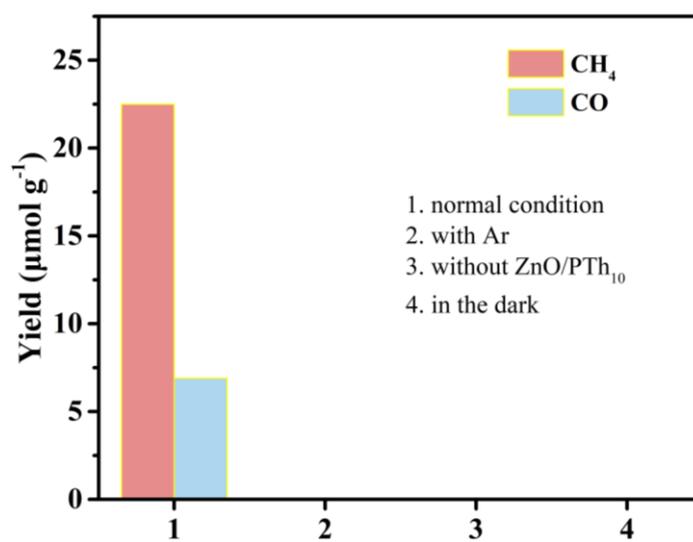


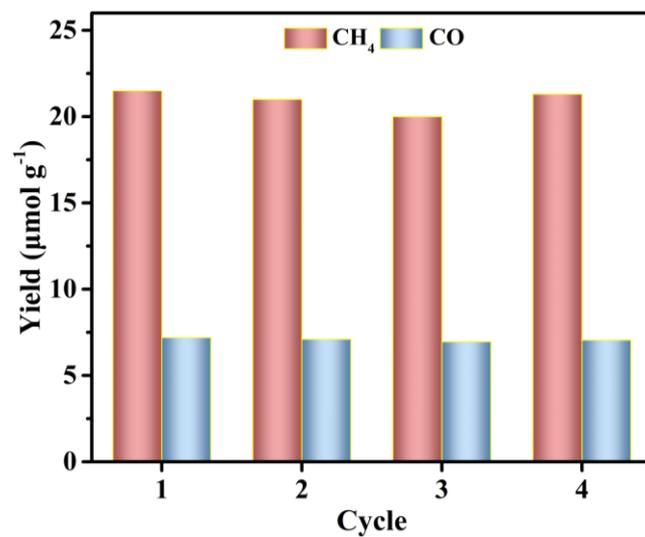
Figure S2. Infrared spectra of ZnO and ZnO/PTh<sub>10</sub>.



**Figure S3.** Nyquist plots of ZnO and ZnO/PTh<sub>x</sub>.



**Figure S4.** Effect of different reaction conditions on the photocatalytic activity of ZnO/PTh<sub>10</sub>.



**Figure S5.** Cycle test for ZnO/PTh<sub>10</sub>.