Enhancement photocatalytic activity of the heterojunction of two-dimensional hybrid semiconductors ZnO/V_2O_5

Juan Aliaga[1], Nasla Cifuentes[1], Guillermo González[3,4,*] Clivia Sotomayor-Torres[5,6] and Eglantina Benavente[1,2,*]

Figures.

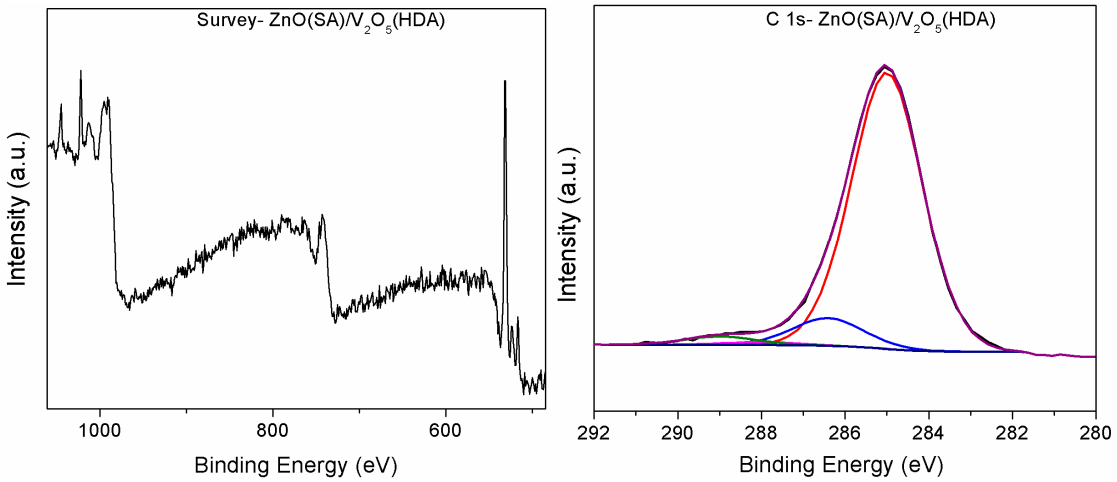

Figure S1. XPS survey spectra.

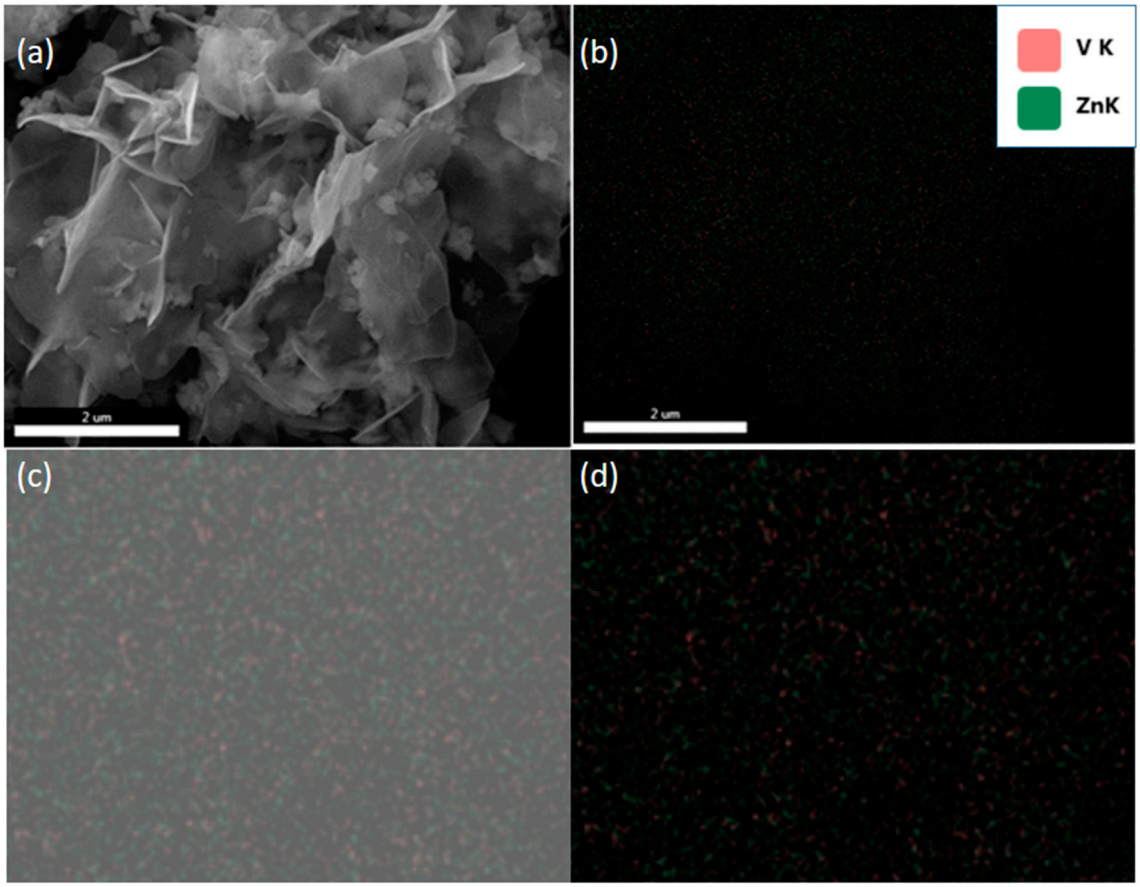

Figure S2 (**a**) Images SEM of ZnO(SA)/V_2O_5(HDA), (**b**) Element mappings Zn and V, (**c**) and (**d**) Element mappings Zn and V (x5).

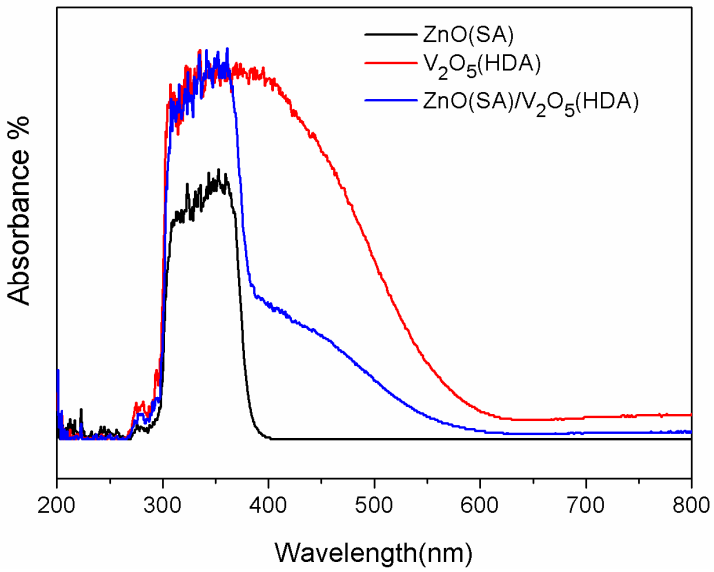

Figure S3. The UV–visible diffuse reflectance was measured for ZnO(SA), V_2O_5(HDA) and ZnO(SA)/V_2O_5(HDA).

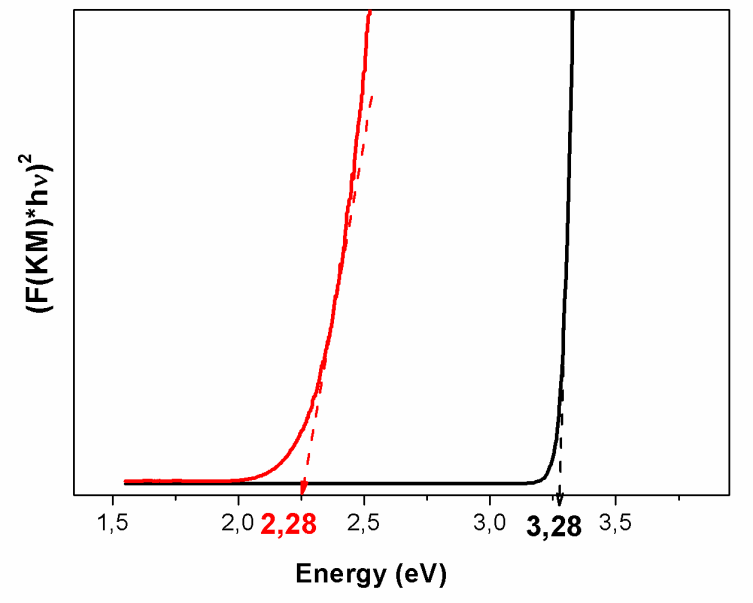

Figure S4. Band gap of samples for ZnO(SA) and V_2O_5(HDA).

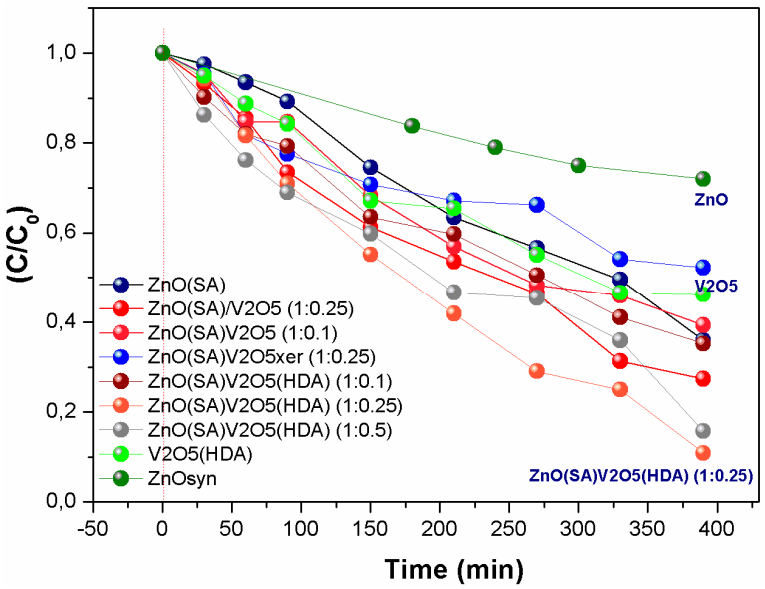

Figure S5. Photocatalytic performance of the samples for the degradation of MB solution.

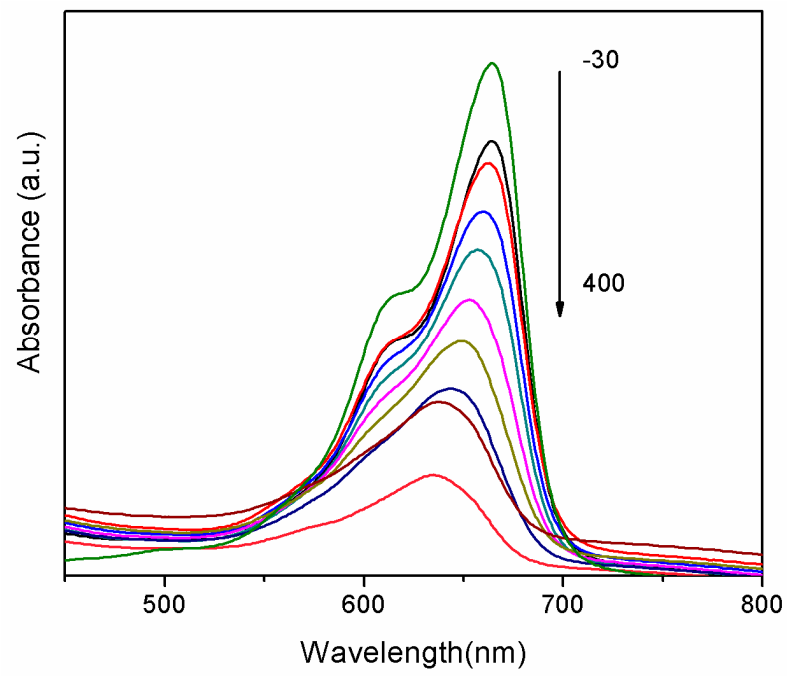

Figure S6. Absorption spectra with time of visible light exposure sample ZnO(SA)/V_2O_5(HDA) (1:0.1).

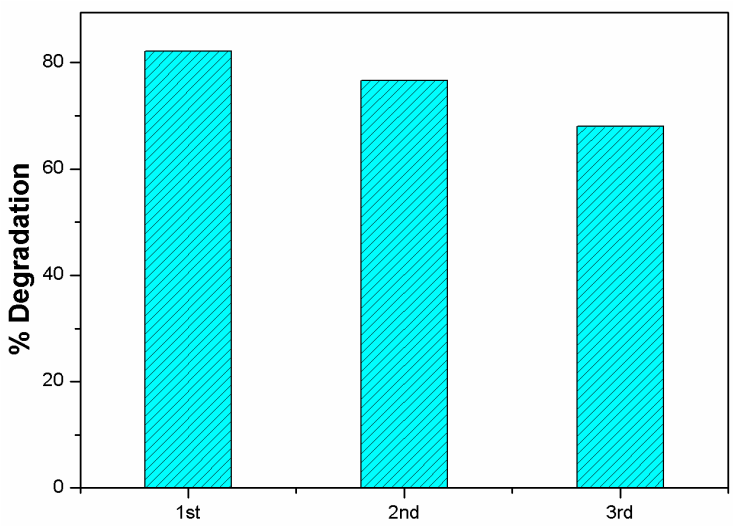

Figure S7. Recycling test of MB photodegradation under visible light of ZnO(SA)/ V_2O_5(HDA) (1:0.25).

Tabla S1. Molar composition of samples prepared and degradation of MB.

Samples	**ZnO-SA**	**V_2O_5 orthorhombic**	**V_2O_5 xerogel**	**V_2O_5-HDA**	**% degradation**
ZnO(SA)	1	-	-	-	64,1
ZnO(SA)/V_2O_5	1	0,1	-	-	60,1
ZnO(SA)/V_2O_5	1	0,25	-	-	72,6
ZnO(SA)/V_2O_5	1	-	0,25	-	47,8
ZnO(SA)/V_2O_5	1	-	-	0,1	64,8
ZnO(SA)/V_2O_5	**1**	**-**	**-**	**0,25**	**90,0**
ZnO(SA)/V_2O_5	1	-	-	0,5	83,3
V2O5(HDA)	1	-	-	-	53,9
ZnO syn	1	-	-	-	28,0

Vis 300 W Xe arc lamp (Newport) with a UVIR-CUT filter at $\lambda \geq 400$ nm.
The luminance of the light source 0.5 W/cm^2.