Supplementary Materials: AgCl-ZnAl Layered Double Hydroxides as Catalysts with Enhanced Photodegradation and Antibacterial Activities

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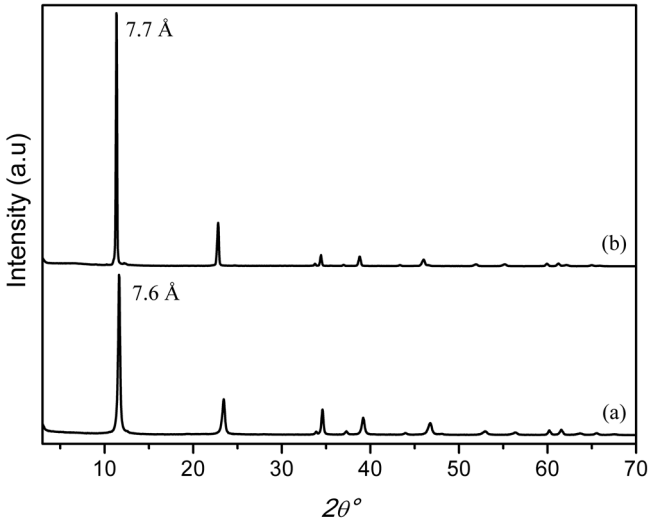

Figure S1. XRD of ZnAl-CO_3 (a) and ZnAl-Cl (b).

The photocatalytic activity of AgCl, of the LDH in chloride and carbonate form and of LDH/AgCl physical mixtures was studied, in the same condition of the composites, in order to evaluate the contribution of the single components of the composites to the RhB photodegradation (Table S1). Figure S2 shows that the $ZnAlCO_3$, ZnAlCl and of the physical mixtures ZnAlCl/AgCl and $ZnAlCO_3$/AgCl have a negligible catalytic activity.

Table S1. Amount of catalyst and silver per mL of RhB 10^{-5} M.

Sample	Ag (*w*/*w* %)	mg sample/mL RhB	mg Ag/mL RhB
ZnAlCl	-	2.48	-
$ZnAlCO_3$	-	3.06	-
ZnAlCl/AgCl phys. mix.	12.1	1.24	0.15
$ZnAlCO_3$/AgCl phys. mix	4.9	3.06	0.15

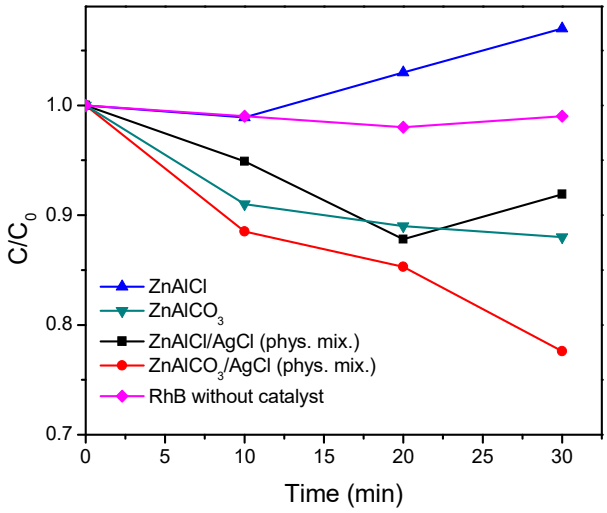

Figure S2. Degradation kinetics of RhB without catalysts and in the presence of the indicated sample, the amount of catalyst used in the experiments is reported in Table S1.

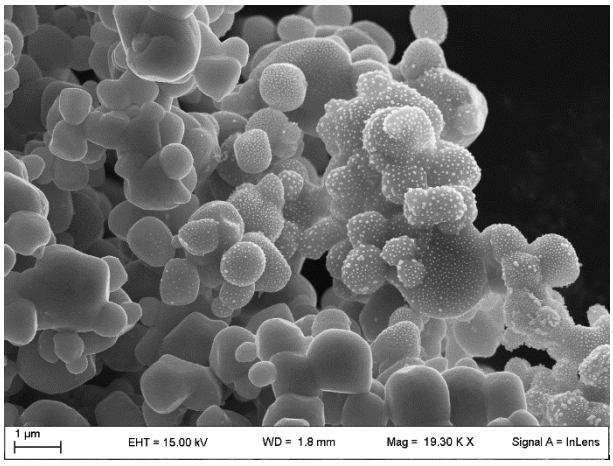

Figure S3. SEM images of pure AgCl.

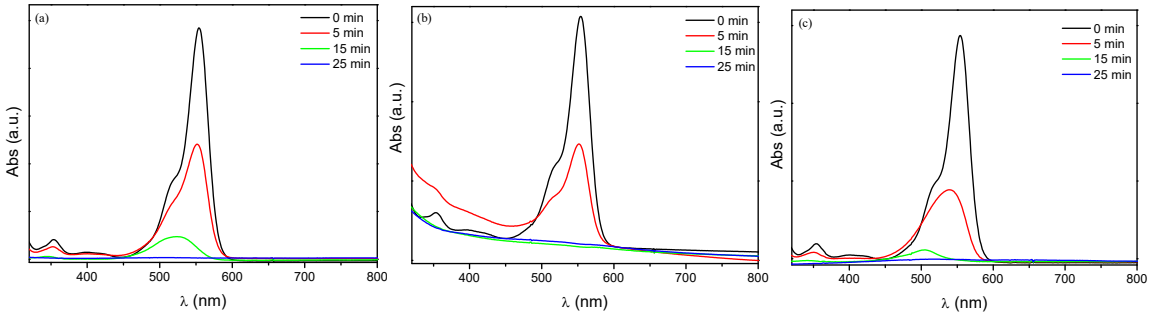

Figure S4. Photodegradation of 10^{-5} M RhB solution by LDH1 catalyst (mg Ag/ml RhB = 0.30). Temporal evolution of UV–Vis spectra during the first run (**a**), second run (**b**) and third run (**c**).

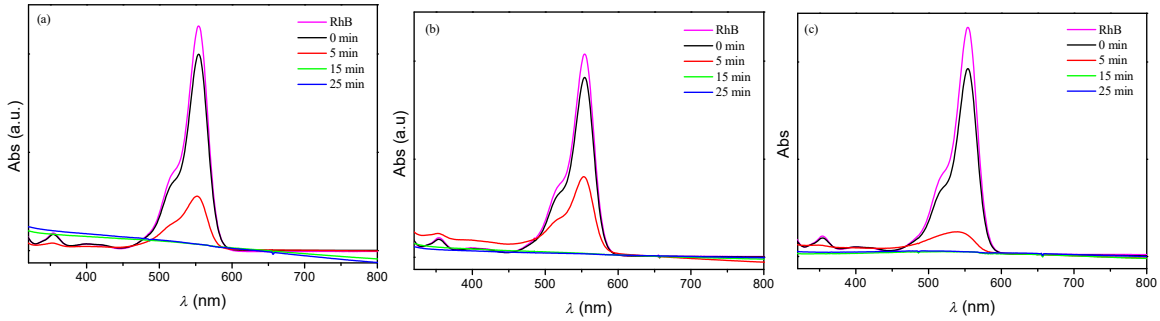

Figure S5. Photodegradation of 10^{-5} M RhB solution by LDH3 catalyst (mg Ag/ml RhB = 0.15). Temporal evolution of UV–Vis spectra during the first run (**a**), second run (**b**) and third run (**c**).