

Supplementary Material

Figure S1. IR spectra of B1NNp, B2NNp, B3NNp and as-prepared boehmite. **Figure S2.** Steady-state fluorescence emission for B2NNp ($\lambda_{\text{exc}} = 280$ nm) (pH values: 1.46, 1.96, 2.58, 3.07, 3.87, 4.25, 4.63, 5.06, 5.72, 6.30, 7.00, 7.61, 8.23, 8.77, 9.21, 9.61, 10.22, 10.90, 11).

65). **Figure S3.** Steady-state fluorescence emission for B1NNp ($\lambda_{\text{exc}} = 280$ nm) (pH values: 2.00, 2.45, 2.79, 3.71, 4.30, 4.66, 5.08, 5.60, 6.27, 6.81, 7.29, 7.79, 8.21, 8.53, 8.94, 9.37, 9.78, 10.21, 10.70, 11.21, 11.65). **Figure S4.** Fluorescence emission intensity vs. pH curves recorded in water for the systems: A) B2NNp + Cu^{2+} , B) B2NNp + Zn^{2+} .

Figure S5. Left: Variation with pH of the emission spectra of the system B2NNp + ATP. Right: Stern-Volmer plot of the system B2NNp + ATP at pH = 3. **Figure S6.**

Left: Variation with pH of the emission spectra of the system B1NNp + ATP. Right: Stern-Volmer plot of the system B1NNp + ATP at pH = 3. **Figure S7.** Fluorescence emission intensity vs. pH curves recorded

in water for the systems: A) B3NNp + Cd^{2+} . **Figure S8.** Fluorescence emission intensity vs. pH curves recorded in water for the systems: A) B3NNp + Pb^{2+} . **Figure S9.** Fluorescence emission intensity vs. pH curves recorded in water for the systems: A) B3NNp + Co^{2+} .

Figure S10. Fluorescence emission intensity vs. pH curves recorded in water for the system 3NNp + Pb^{2+} . **Figure S11.** Fluorescence emission intensity vs. pH curves recorded in water for the system 3NNp + Cd^{2+} . **Table S1.** Stability constants for the formation of Cu^{2+} , Zn^{2+} , Cd^{2+} and Co^{2+} complexes 3NNp determined in 0.15 M NaCl at 298.1 K.

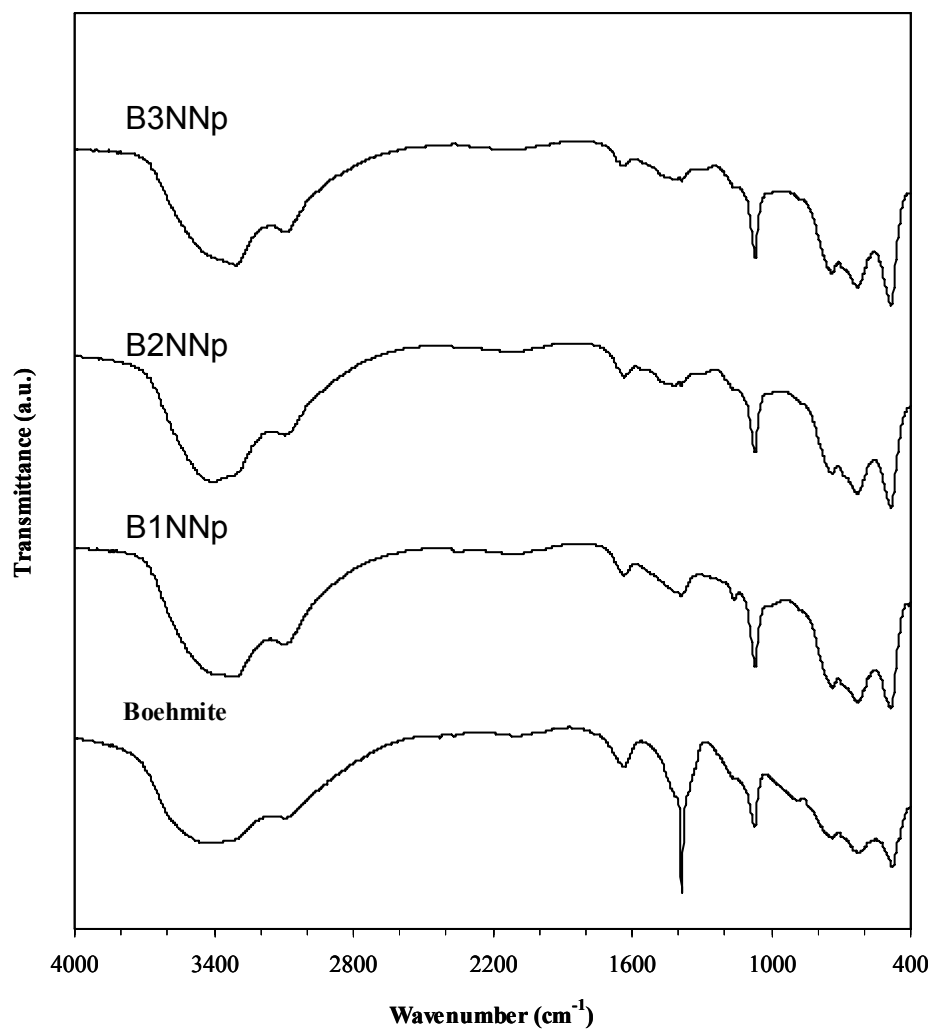


Figure S1. IR spectra of B1NNp, B2NNp, B3NNp and as-prepared boehmite

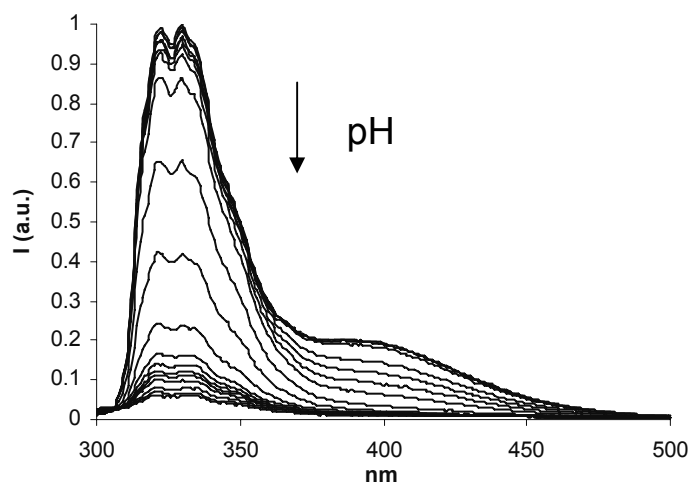


Figure S2. Steady-state fluorescence emission for B2NNp ($\lambda_{\text{exc}} = 280$ nm) (pH values: 1.46, 1.96, 2.58, 3.07, 3.87, 4.25, 4.63, 5.06, 5.72, 6.30, 7.00, 7.61, 8.23, 8.77, 9.21, 9.61, 10.22, 10.90, 11.65).

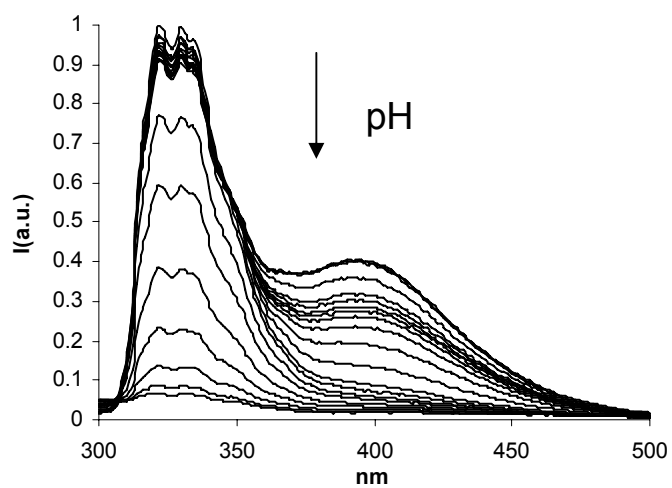


Figure S3. Steady-state fluorescence emission for B1NNp ($\lambda_{\text{exc}} = 280$ nm) (pH values: 2.00, 2.45, 2.79, 3.71, 4.30, 4.66, 5.08, 5.60, 6.27, 6.81, 7.29, 7.79, 8.21, 8.53, 8.94, 9.37, 9.78, 10.21, 10.70, 11.21, 11.65).

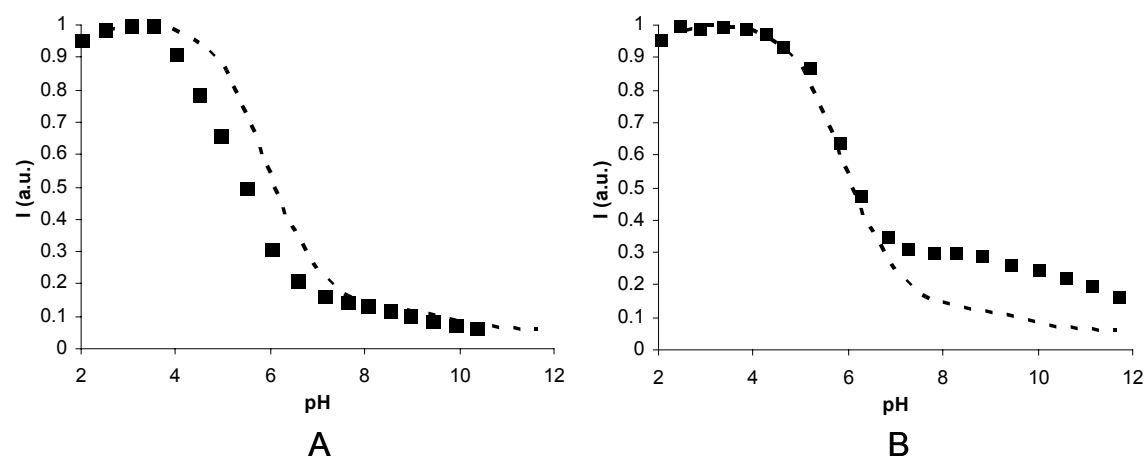


Figure S4. Fluorescence emission intensity vs. pH curves recorded in water for the systems: A) B2NNp + Cu^{2+} , B) B2NNp + Zn^{2+} .

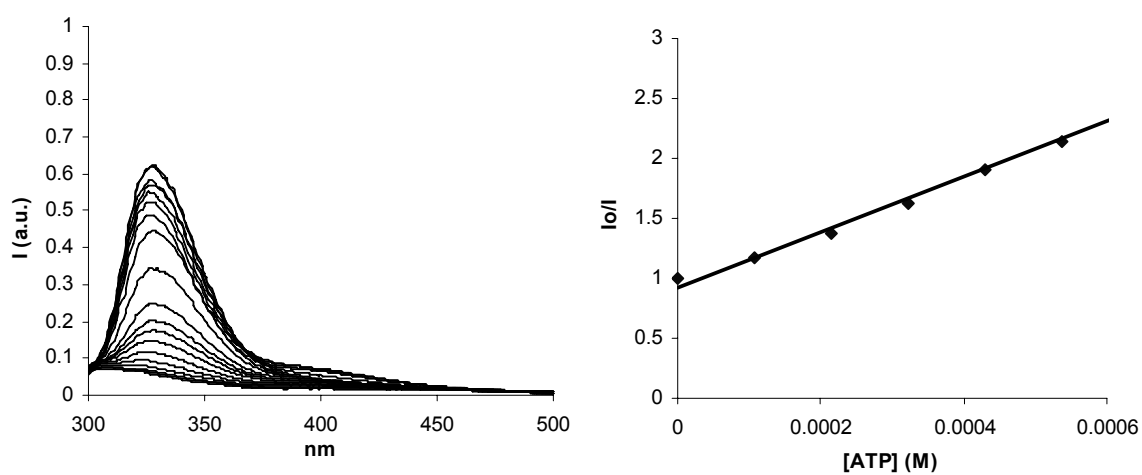


Figure S5. Left: Variation with pH of the emission spectra of the system B2NNp + ATP. Right: Stern-Volmer plot of the system B2NNp + ATP at pH = 3.

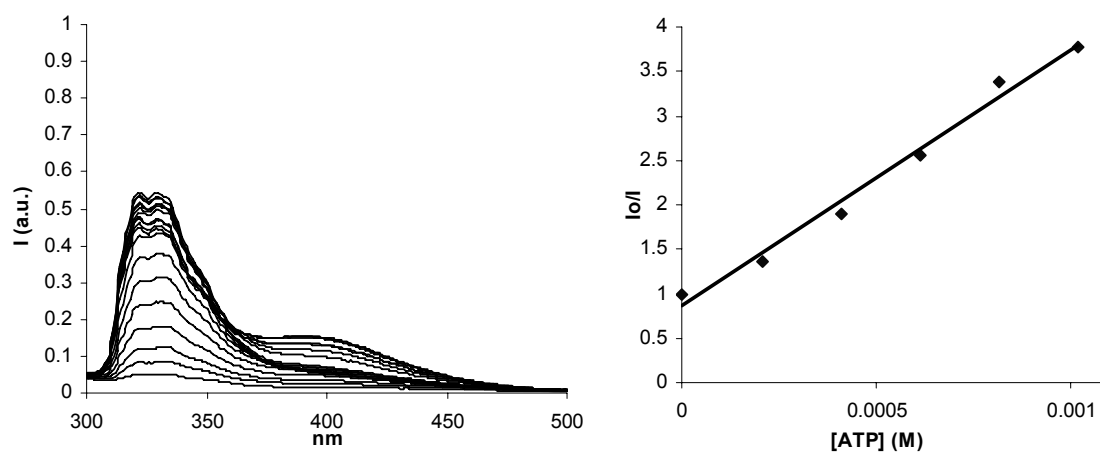


Figure S6. Left: Variation with pH of the emission spectra of the system B1NNp + ATP. Right: Stern-Volmer plot of the system B1NNp + ATP at pH = 3.

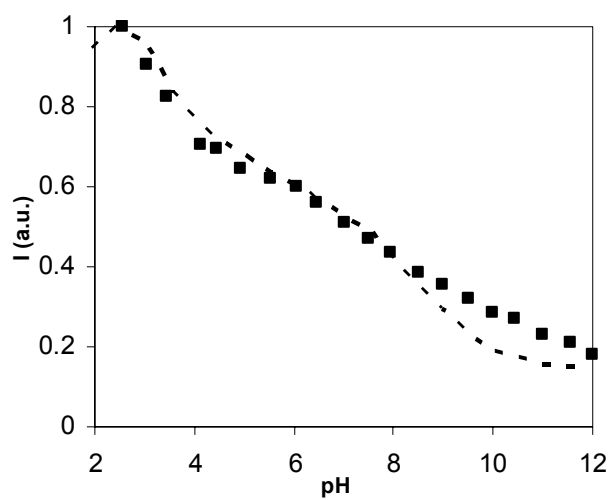


Figure S7. Fluorescence emission intensity vs. pH curves recorded in water for the systems: A) B3NNp + Cd^{2+} .

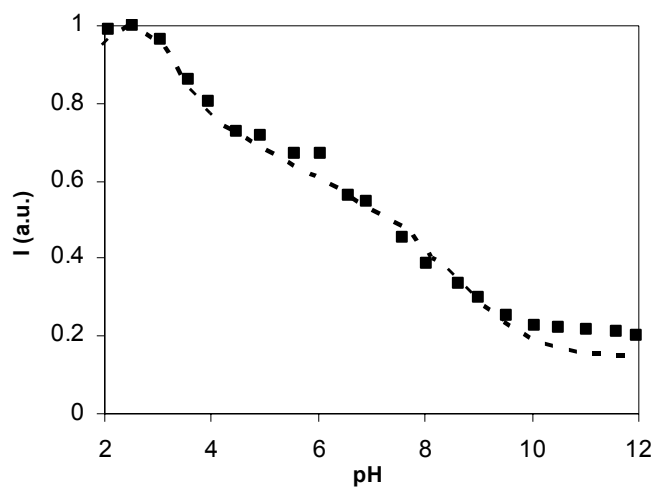


Figure S8. Fluorescence emission intensity vs. pH curves recorded in water for the systems: A) B3NNp + Pb^{2+} .

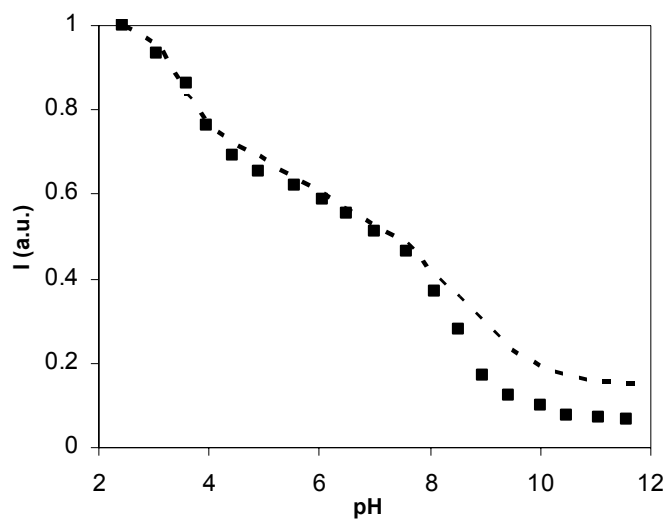


Figure S9. Fluorescence emission intensity vs. pH curves recorded in water for the systems: A) B3NNp + Co^{2+} .

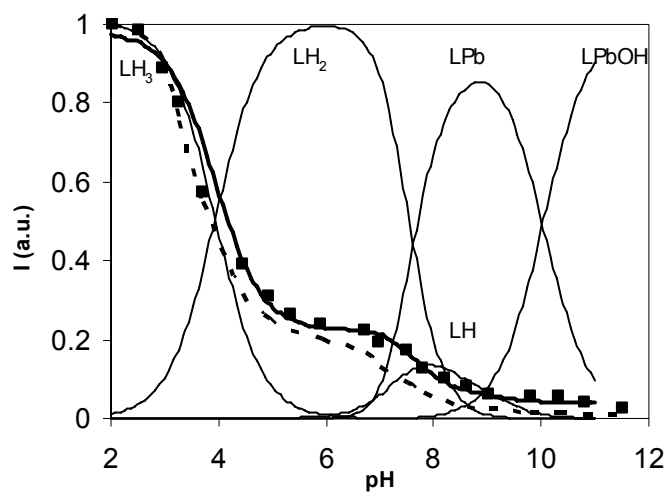


Figure S10. Fluorescence emission intensity vs. pH curves recorded in water for the system 3NNp + Pb^{2+} .

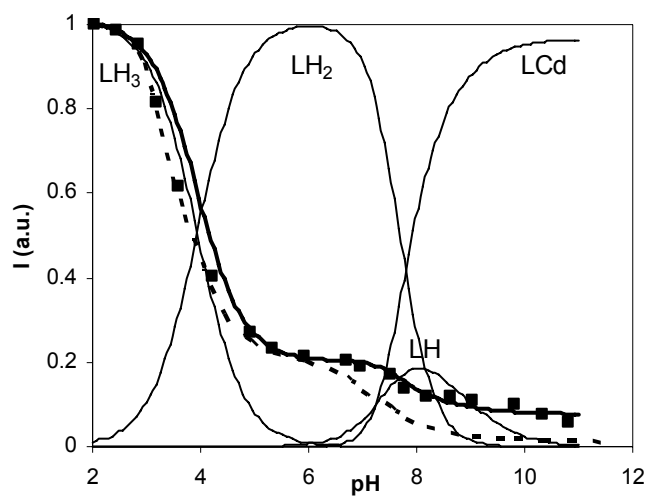


Figure S11. Fluorescence emission intensity vs. pH curves recorded in water for the system 3NNp + Cd^{2+} .

Table S1. Stability constants for the formation of Cu^{2+} , Zn^{2+} , Cd^{2+} and Co^{2+} complexes 3NNp determined in 0.15 M NaCl at 298.1 K.

Reaction ^a	Cu^{2+}	Zn^{2+}	Cd^{2+}	Co^{2+}	Pb^{2+}
$\text{M} + \text{L} \rightleftharpoons \text{ML}$	14.79(1) ^{b,c}	7.60(2) ^c	6.67(5)	6.89(5)	7.04(3)
$\text{M} + \text{L} + \text{H}_2\text{O} \rightleftharpoons \text{ML}(\text{OH}) + \text{H}$	4.98(3)	-1.79(3)		-2.85(8)	-2.99(4)

a) Charges omitted. b) Figures in parentheses are standard deviation in the last significant figures. c)

Taken from ref. 18