Figure S1. UV spectra of L at selected pH values ([L = 5 \times 10^{-5} \text{ M}, T = 298 \text{ K}, 0.1 \text{ M NMe}_4\text{Cl})
Figure S2. Crystal packing of [H$_5$L]Br$_5$·2H$_2$O, displaying the two different π-π interactions between terpyridine units of symmetry related cations (1: symmetry operation 1+x, y, z, interplanar distance: 3.6 Å; 2: symmetry operation  -x, -y,-z, interplanar distance 3.7 Å).
Figure S3.  (a) Crystal packing of the complex a, displaying the two different π-π interactions, (1) and (2), between terpyridine units of symmetry related complexes [(1): symmetry operation -x, -y, 1-z, interplanar distance: 3.6 Å; (2): symmetry operation -x, 1-y, 1-z, , interplanar distance 3.8 Å]. (b) Side view of the crystal packing of complex b, displaying the two different π-π interactions, (1) and (2), between symmetry related complexes [(1): symmetry operation 0.5-x, 0.5+y,-z, interplanar distance: 3.6 Å; (2): symmetry operation -x, -y,-z, interplanar distance 3.6 Å]. (c) Top view of the crystal packing of b. In all cases the perchlorate anions have been omitted for clarity.
**Figure S4.** ε values at 320 nm (■) and 344 nm (●) measured on solutions with different concentrations of the Cu(II) complex with L (Cu(II) and L in equimolecular ratio) at pH 6 as a function of the percentage of the dimeric species ([Cu₂L₂]^{4+}) calculated on the basis of the potentiometric results.
Figure S5. Fluorescence emission spectra recorded on aqueous solutions containing L and Zn(II) in 1:1 molar ratio at different pH values ([L] = 5.0 \cdot 10^{-5} M, 0.1 M NMe₄Cl, 298.1 K)
Figure S6. UV-Vis spectra recorded on aqueous solutions at pH 8 containing L and Cu^{2+} at different molar ratio: (1) 1:1, (2) 1:1.25, (3) 1:1.5, (4) 1:1.75, (5) 1:2, (6) 1:2.25, (7) 1:2.5 (0.1 mol dm^{-3} NMe_{4}Cl, T = 298.1 K).