Fluorescence spectra of 1, 2, 3, 4, 5, 7 and TMB in CH$_3$CN at 20ºC. $\lambda_{\text{exc}}=300$ nm (1, 2, 3), $\lambda_{\text{exc}}=278$ nm (4), $\lambda_{\text{exc}}=340$ nm (5, 7), and $\lambda_{\text{exc}}=310$ nm (TMB).

Fluorescence spectra of TMB under different acid-base conditions at 20ºC, $\lambda_{\text{exc}}=310$ nm. Initial concentration of ligand was 6.51x10$^{-7}$ M in CH$_3$CN. **TMB**: TMB in pure CH$_3$CN. **TMB + TFAA**: TMB in a large excess of trifluoroacetic acid in CH$_3$CN.
Fluorescence spectra of 7 under different acid-base conditions at 20°C, $\lambda_{\text{exc}}=340$ nm and initial concentration of ligand of $4.42 \times 10^{-6}$M in CH$_3$CN. 7: ligand in pure CH$_3$CN or in 1.54x10$^{-4}$ M of Tetramethylammonium hydroxide in CH$_3$CN. 7 + citric acid: ligand in 1.21x10$^{-4}$ M of citric acid in CH$_3$CN. 7 + TFAA: ligand in a large excess of trifluoroacetic acid in CH$_3$CN.

Fluorescence spectra of 1 under different acid-base conditions at 20°C, $\lambda_{\text{exc}}=300$ nm and initial concentration of ligand of $5.88 \times 10^{-6}$M in CH$_3$CN. 1: ligand in pure CH$_3$CN or in 1.31x10$^{-4}$ M of Tetramethylammonium hydroxide in CH$_3$CN. 1 + citric acid: ligand in
3.27x10^-4 M of citric acid in CH$_3$CN. \textbf{1 + TFAA}: ligand in a large excess of trifluoroacetic acid in CH$_3$CN.

Fluorescence spectra of \textbf{2} under different acid-base conditions at 20°C, $\lambda_{\text{exc}}$=300 nm and initial concentration of ligand of 7.34x10^-6 M in CH$_3$CN. \textbf{2}: ligand in pure CH$_3$CN or in 3.85x10^-4 M of Tetramethylammonium hydroxide in CH$_3$CN. \textbf{2 + citric acid}: ligand in 1.66x10^-4 M of citric acid in CH$_3$CN. \textbf{2 + TFAA}: ligand in a large excess of trifluoroacetic acid in CH$_3$CN.

Fluorescence spectra of \textbf{3} under different acid-base conditions at 20°C, $\lambda_{\text{exc}}$=300 nm and initial concentration of ligand of 7.34x10^-6 M in CH$_3$CN. \textbf{3}: ligand in pure CH$_3$CN or in 3.85x10^-4 M of Tetramethylammonium hydroxide in CH$_3$CN. \textbf{3 + citric acid}: ligand in 1.66x10^-4 M of citric acid in CH$_3$CN. \textbf{3 + TFAA}: ligand in a large excess of trifluoroacetic acid in CH$_3$CN.
Fluorescence spectra of 3 under different acid-base conditions at 20°C, $\lambda_{\text{exc}}=300$ nm and initial concentration of ligand of $5.13 \times 10^{-6}$M in CH$_3$CN. 3: ligand in pure CH$_3$CN or in $5.49 \times 10^{-4}$M of Tetramethylammonium hydroxide in CH$_3$CN. 3 + citric acid: ligand in $1.87 \times 10^{-4}$ M of citric acid in CH$_3$CN. 3 + TFAA: ligand in a large excess of trifluoroacetic acid in CH$_3$CN.

Fluorescence spectra of 1 after addition of ca. 4.5 equivalents of Ni$^{2+}$, Cd$^{2+}$ and Pb$^{2+}$ at 20°C, $\lambda_{\text{exc}}=300$ nm. Initial concentration of ligand was ca. $5.6 \times 10^{-6}$M in CH$_3$CN.

Fluorescence spectra of 2 after addition of ca. 4.5 equivalents of Ni$^{2+}$, Cd$^{2+}$ and Pb$^{2+}$ at 20°C, $\lambda_{\text{exc}}=300$ nm. Initial concentration of ligand was ca. $6.1 \times 10^{-6}$M in CH$_3$CN.
Fluorescence spectra of 3 after addition of ca. 5.5 equivalents of Ni$^{2+}$, Cd$^{2+}$ and Pb$^{2+}$ at 20°C, $\lambda_{\text{exc}}$=300 nm. Initial concentration of ligand was ca. 5.8x10$^{-6}$M in CH$_3$CN.

**Fig.4** Fluorescence spectra of 1 after addition of Cu$^{2+}$ at 20°C, $\lambda_{\text{exc}}$=300 nm. Initial concentration of ligand was 5.71x10$^{-6}$M in CH$_3$CN. Spectra correspond to additions of 0, 0.70, 1.40 and 2.10 eq. of Cu$^{2+}$ respectively.
Fluorescence spectra of 1 after addition of Zn\textsuperscript{2+} at 20°C, \(\lambda_{\text{exc}}=300\) nm. Initial concentration of ligand was 5.65\(\times\)10\textsuperscript{-6}M in CH\textsubscript{3}CN. Spectra correspond to additions of 0, 0.71, 1.42, 2.12, 5.66, 9.20, 12.74, 16.27 and 23.22 eq. of Zn\textsuperscript{2+} respectively.

Fluorescence spectra of 2 after addition of Cu\textsuperscript{2+} at 20°C, \(\lambda_{\text{exc}}=300\) nm. Initial concentration of ligand was 5.46\(\times\)10\textsuperscript{-6}M in CH\textsubscript{3}CN. Spectra correspond to additions of 0, 0.73, 1.46 and 2.93 eq. of Cu\textsuperscript{2+} respectively.
Fluorescence spectra of 2 after addition of Zn$^{2+}$ at 20°C, $\lambda_{\text{exc}}=300$ nm. Initial concentration of ligand was 5.25x10^{-6}M in CH$_3$CN. Spectra correspond to additions of 0, 0.76, 1.52, 3.04, 6.85, 10.65, 14.45, 18.25 and 22.05 eq. of Zn$^{2+}$ respectively.

Fluorescence spectra of 3 after addition of Cu$^{2+}$ at 20°C, $\lambda_{\text{exc}}=300$ nm. Initial concentration of ligand was 5.74x10^{-6}M in CH$_3$CN. Spectra correspond to additions of 0, 0.70, 1.39 and 2.09 eq. of Cu$^{2+}$ respectively.
Fluorescence spectra of 3 after addition of Zn^{2+} at 20°C, \( \lambda_{\text{exc}} = 300 \) nm. Initial concentration of ligand was 5.52x10^{-6}M in CH3CN. Spectra correspond to additions of 0, 0.68, 1.37, 2.05, 5.47, 15.72 and 22.55 eq. of Zn^{2+} respectively.

Fluorescence spectra of 1 at different pH at 20°C, \( \lambda_{\text{exc}} = 278 \) nm. Concentration of ligand was ca. 1 x 10^{-5} M in water. a) pH = 9.45. b) pH = 7.66.
$^1$H NMR of ligand 1, in CD$_3$CN, after addition of excess K$_2$CO$_3$.

$^{13}$C NMR of ligand 1, in CD$_3$CN, after addition of excess K$_2$CO$_3$. 
$^1$H NMR of ligand 1, in CD$_3$CN, after addition of excess citric acid.

$^{13}$C NMR of ligand 1, in CD$_3$CN, after addition of excess citric acid.
$^1$H NMR of ligand 1, in CD$_3$CN, after addition of excess TFAA.

$^{13}$C NMR of ligand 1, in CD$_3$CN, after addition of excess TFAA.