Supplementary Materials: A Highly Selective Sensor for Cyanide in Organic Media and on Solid Surfaces

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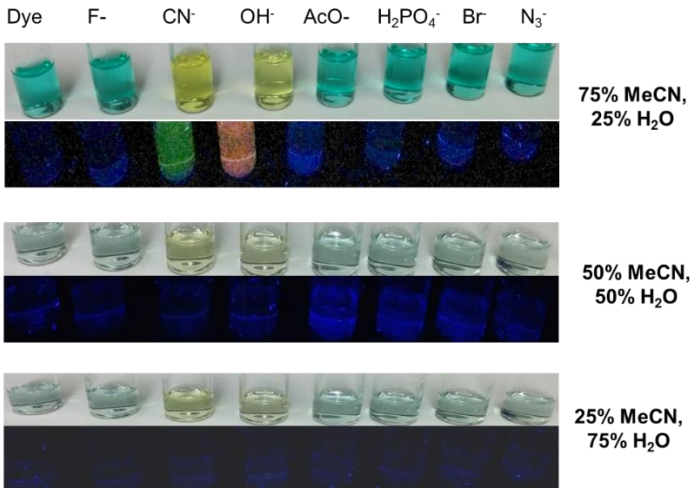

Figure S1. Color changes of IR-786 (50 μM) under normal light and under hand held UV lamp (λ = 365 nm) in MeCN: water mixtures = 75%:25%, 50%:50%, 25%:75% before and after the addition of various anions.

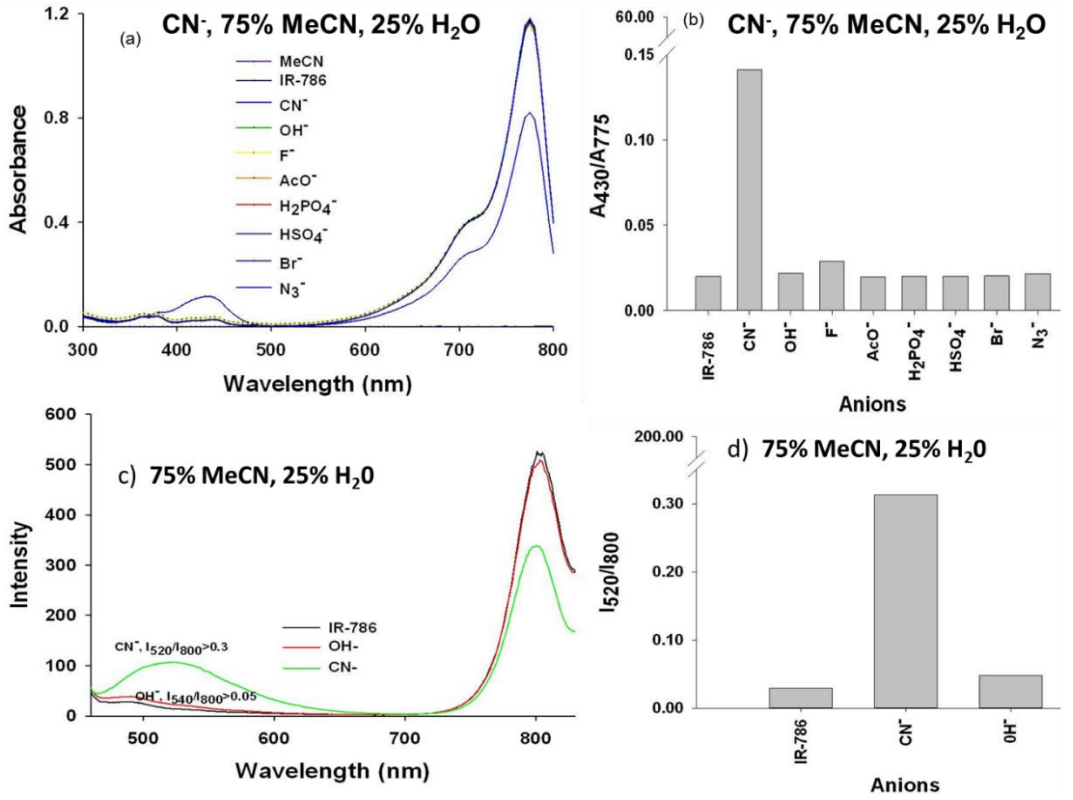

Figure S2. (**a**) UV-vis absorption spectra and (**b**) absorbance ratiometric values (absorbance value at 430 divided by absorbance value at 775 nm) before and after the addition of 1.0 equivalence of various anions to IR-786 in 75%:25% MeCN:water mixture (50 μM) and (**c**) emission spectra and (**d**) emission ratiometric values (intensity value at 520 nm divided by intensity value at 800 nm) obtained from (**a**).

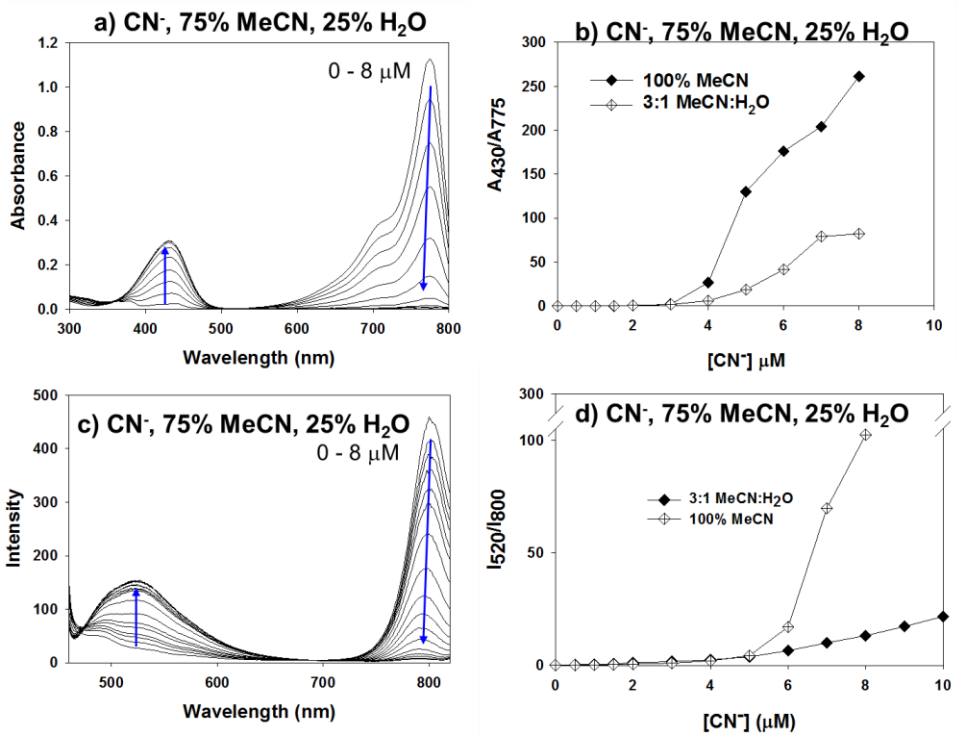

Figure S3. (**a**) UV-vis absorption spectra of IR-786 in 75%:25% MeCN:water mixture (50 μM) before and after the addition of CN^- (up to 8.0 μM) and (**b**) absorbance ratiometric values (absorbance value at 430 divided by absorbance value at 775 nm) obtained from (**c**) Fluorescence emission spectra (λ_{ex} = 430 nm, excitation slit = 20 nm, emission slit = 20 nm), for IR-786 (5.0 μM) 75%:25% MeCN:water mixture before and after the addition of OH^- (up to 10 μM) and (**d**) fluorescence emission ratiometric values (intensity value at 520 nm divided by intensity value at 800 nm) obtained from (**c**). Arrows show the direction of increased amount of anions.

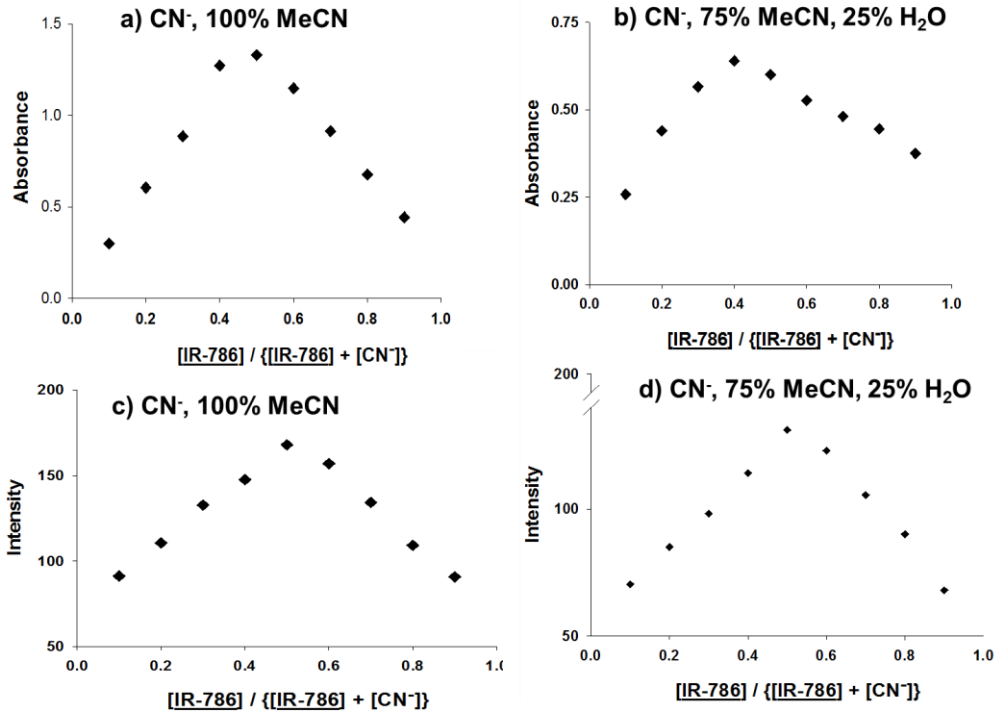

Figure S4. Job's plots for the determination of the binding stoichiometry between IR-786 (5.0 μM) and CN^- in (**a**) 100% MeCN (**b**) 75%:25% MeCN:H_2O mixture based on absorbance at λ_{max} = 430 nm

and (**c**) 100% MeCN (**d**) 75%:25% MeCN:H_2O mixture based on fluorescence emission at λ_{max} = 520 nm.

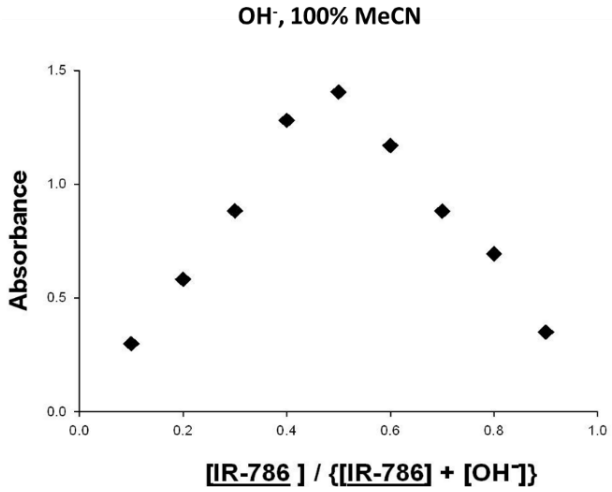

Figure S5. Job's plot for the determination of the binding stoichiometry between IR-786 (5.0 μM) and OH^- in 100% MeCN based on absorbance at λ_{max} = 430 nm.

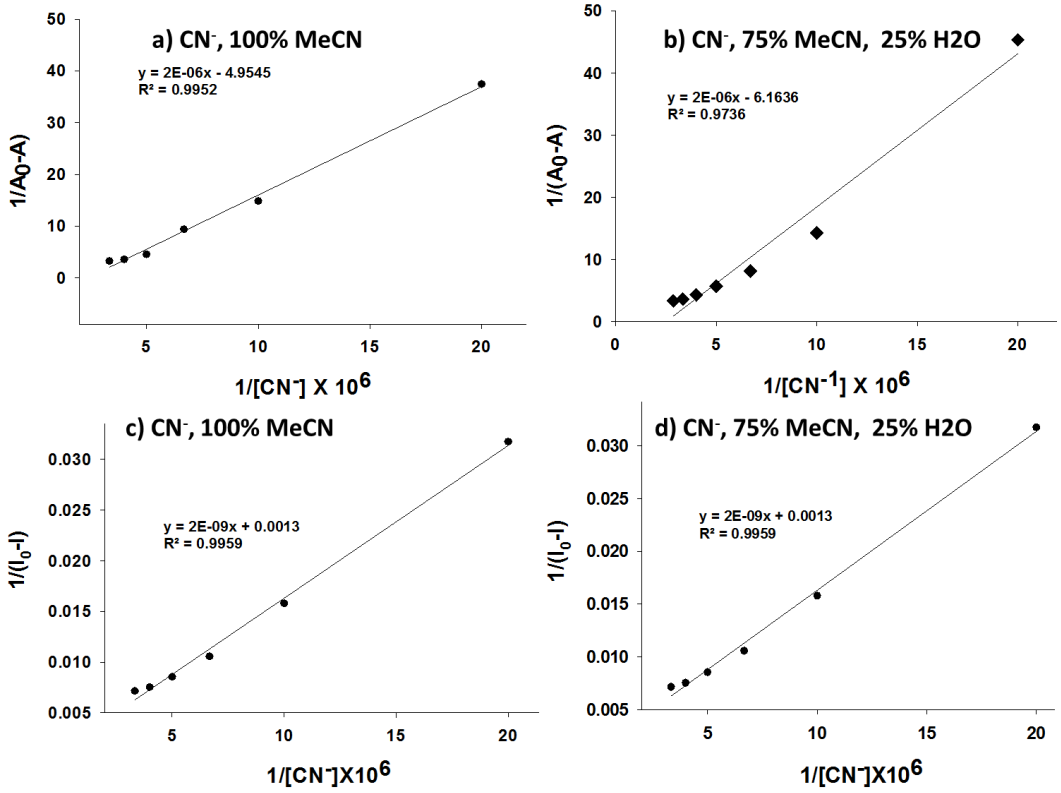

Figure S6. Plots for the determination of the binding constants between IR-786 (50 μM) and CN^- in (**a**) 100% MeCN (**b**) 75%:25% MeCN:H_2O mixture based on absorbance at λ_{max} = 430 nm and (**c**) 100% MeCN (**d**) 75%:25% MeCN:H_2O mixture based on fluorescence emission at λ_{max} = 520 nm.

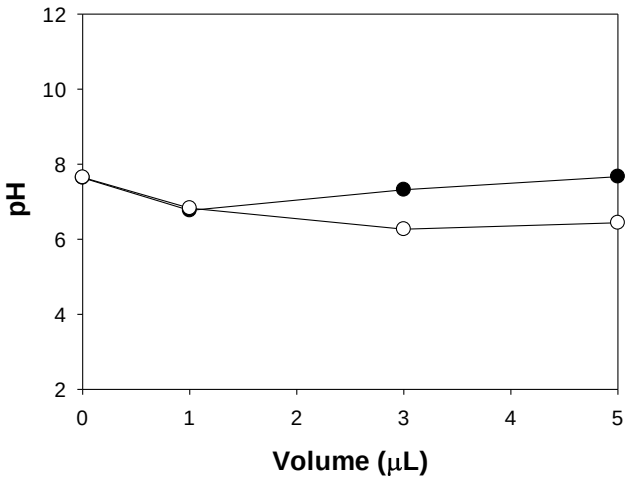

Figure S7. Change in pH of IR-786 solution in MeCN during the titration of stock solution of CN^- and OH^- in buffer as described in the experimental section. Volume of anions correspond to 0–20 μM.