

Supporting Information

Efficient Multicolor and White Light Emission From Zr-Based MOF Composites: Spectral and Dynamical Properties

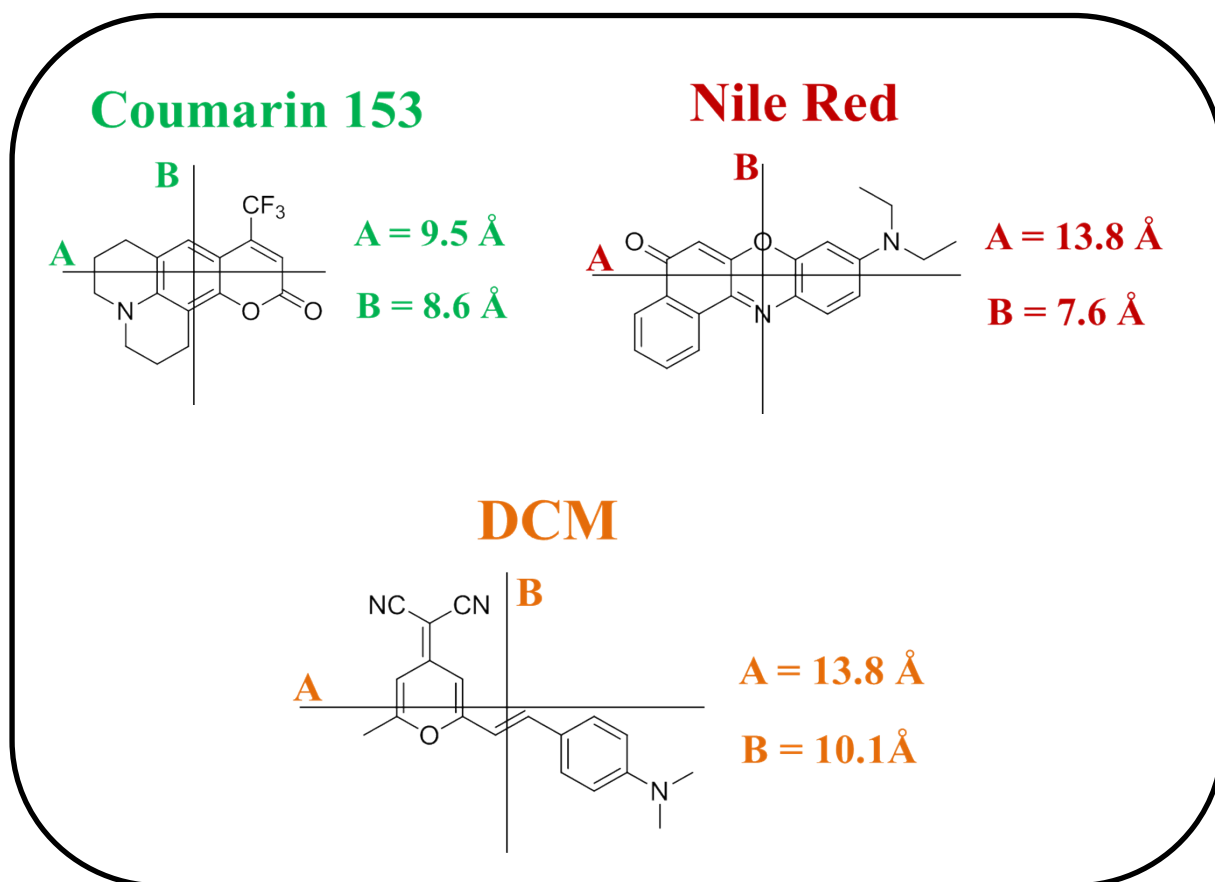
Mario Gutiérrez,¹ Félix Sánchez² and Abderrazzak Douhal^{1*}

¹Departamento de Química Física, Facultad de Ciencias Ambientales y Bioquímica, and INAMOL, Universidad de Castilla-La Mancha, Avenida Carlos III, S.N., 45071 Toledo, Spain.

²Instituto de Química Orgánica, CSIC, Juan de la Cierva, 3, 28006 Madrid, Spain.

*Corresponding author at Universidad de Castilla-La Mancha.

Tel.: +34 925 265 717; E-mail address: abderrazzak.douhal@uclm.es



Scheme S1. Molecular structures of Coumarin 153 (C153), Nile Red (NR) and dye 4-(dicyanomethylene)-2-methyl-6-(4-dimethylaminostyryl)-4H-pyran (DCM) used in making the dye@Zr-NDC composited. The size of the molecules (in length and width) is presented as A and B axis.

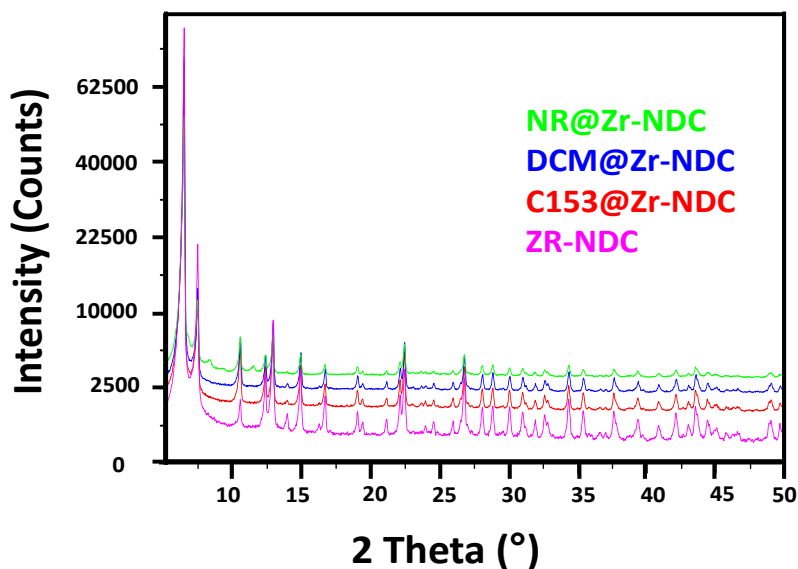


Figure S1. Powders X-rays diffraction patterns of Zr-NDC, C153@Zr-NDC, DCM@Zr-NDC and NR@Zr-NDC.

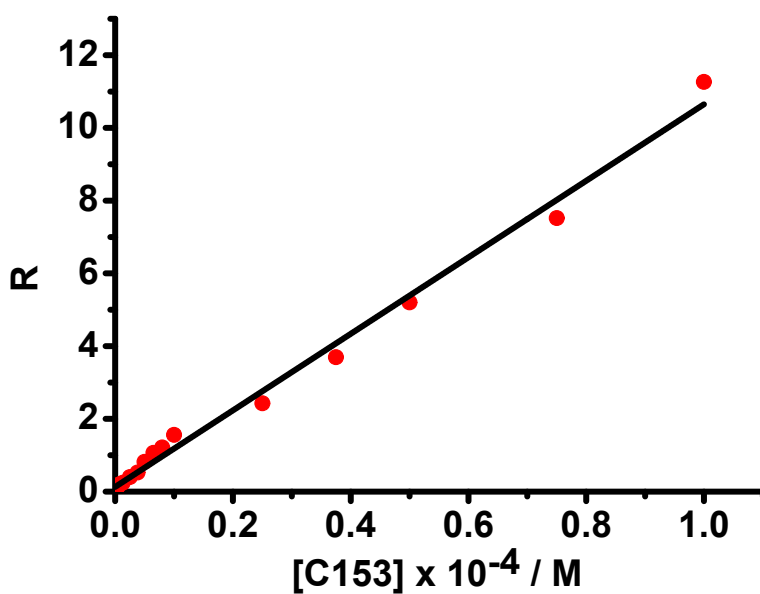


Figure S2. Representation of the relative emission intensities, $R = \frac{\text{emission intensity of C153 at } 505 \text{ nm}}{\text{emission intensity of MOF at } 390 \text{ nm}}$, versus the concentration of added C153.

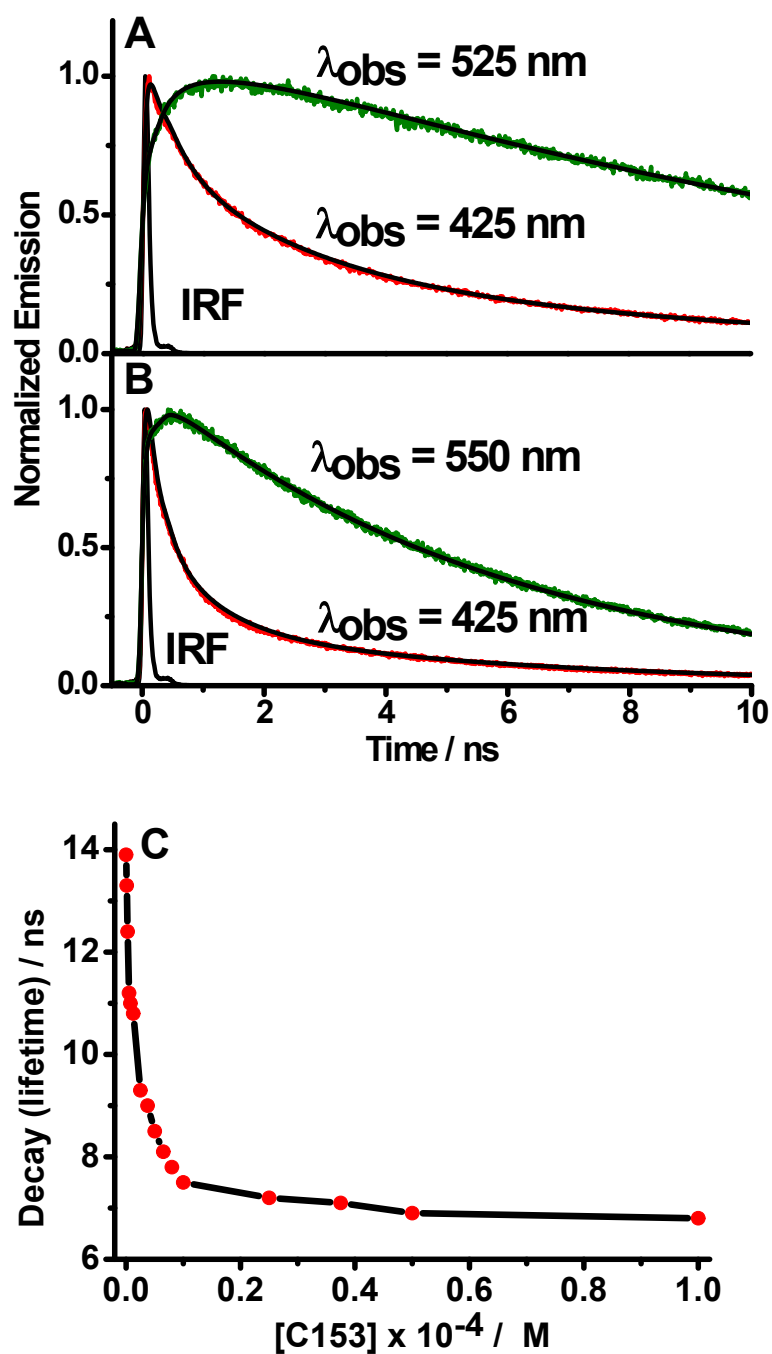


Figure S3. Emission decays of (A) Zr-NDC and (B) C153@Zr-NDC in DE suspensions. The observation wavelength is indicated as inset and the excitation was 371 nm. The solid lines are from the best-fit using a multiexponential function and the IRF is the instrumental response function. (C) Variation of the excimers emission lifetime with the amount of added C153 to a DE suspension of Zr-NDC.

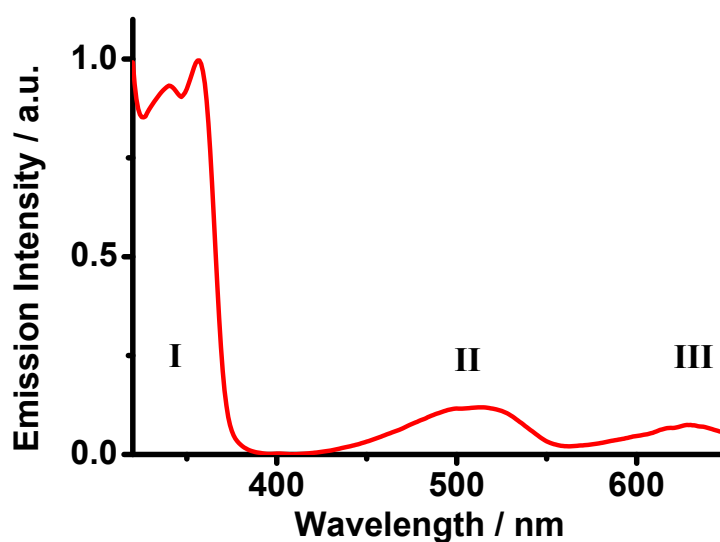


Figure S4. Excitation spectrum of NR@Zr-NDC in a DE suspension, recorded at 675 nm. Region I corresponds to the Zr-NDC absorption, while region II and III are those of absorption of the free and complexed NR, respectively.

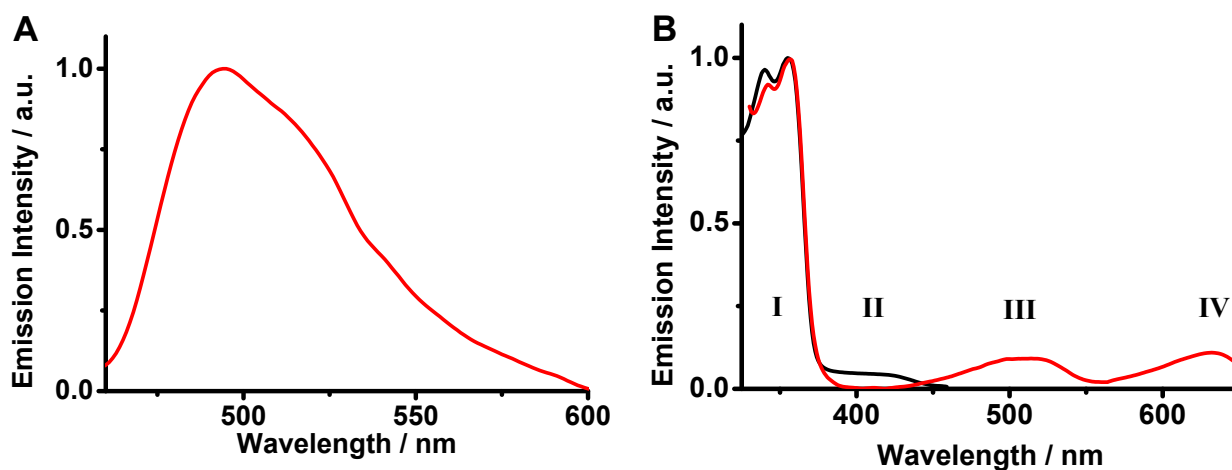


Figure S5. (A) Fluorescence spectrum of NR/C153@Zr-NDC in a DE suspension, upon excitation at 410 nm (C153 absorption region). (B) Normalized (to the maximum intensity) excitation spectra of NR/C153@Zr-NDC in a DE suspension. The observation wavelengths were 500 (black line) and 675 (red line) nm. Region I corresponds to the Zr-NDC absorption, Region II to the absorption of the interacting C153 and, region III and IV are those of free and complexed NR, respectively.

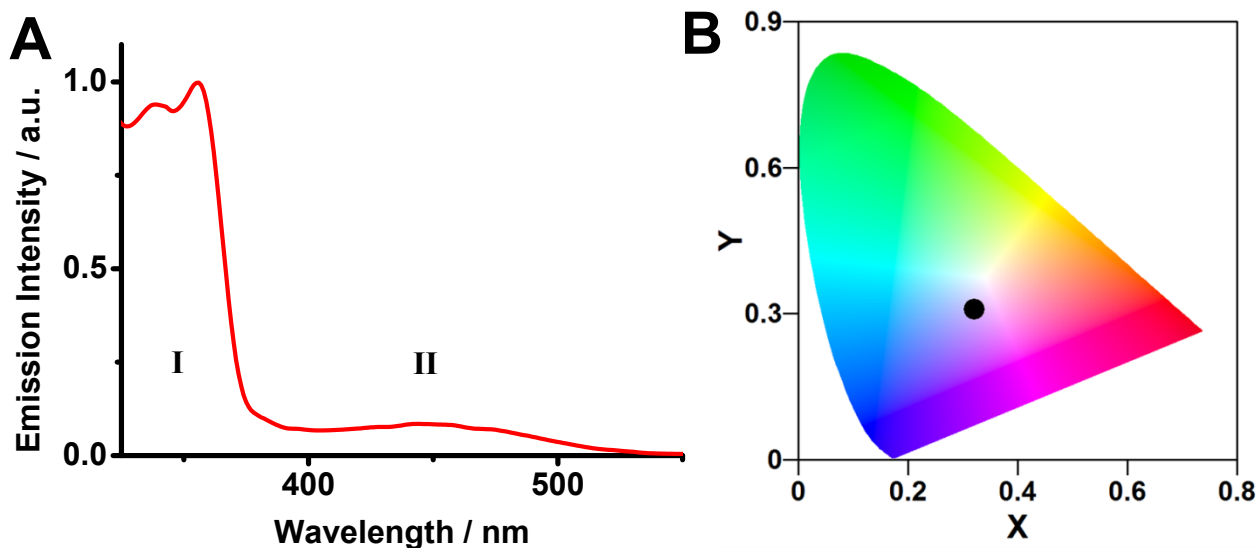


Figure S6. (A) Excitation spectrum of DCM@Zr-NDC in a DE suspension, gated at 625 nm. Region I corresponds to the Zr-NDC absorption, while region II is due to the absorption of DCM interacting with Zr-NDC. (B) CIE coordinates of DCM@Zr-NDC material in DE.

Acknowledgments

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