9-Vinylanthracene Based Fluorogens: Synthesis, Structure-Property Relationships and Applications

Supplementary Information

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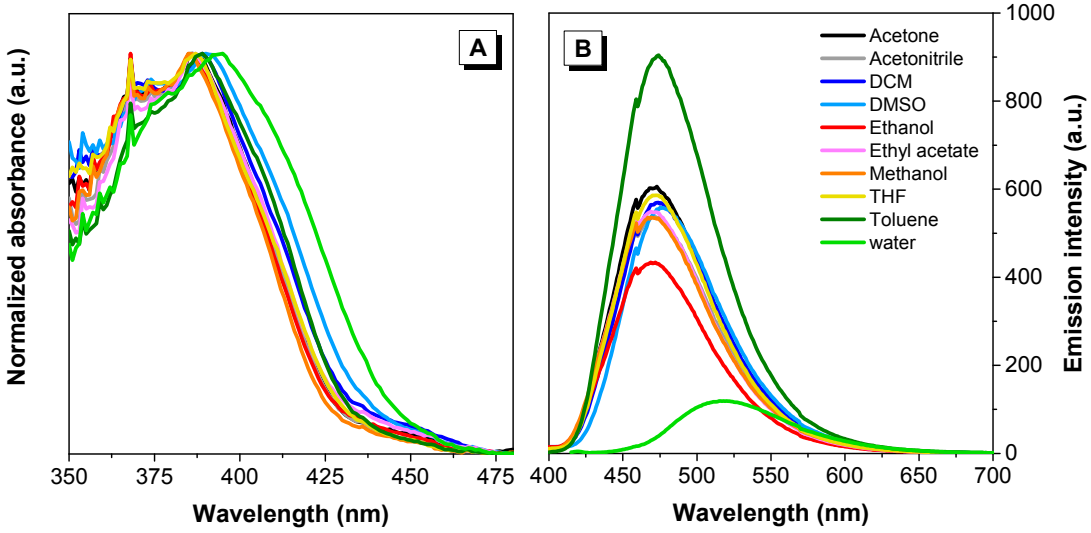


Figure S1. (**A**) normalized absorption spectra of dye **1** in different solvents; (**B**) emission spectra of dye **1** in different solvents. Concentration = 10 μM; λ_{ex}: 385 - 395 nm.

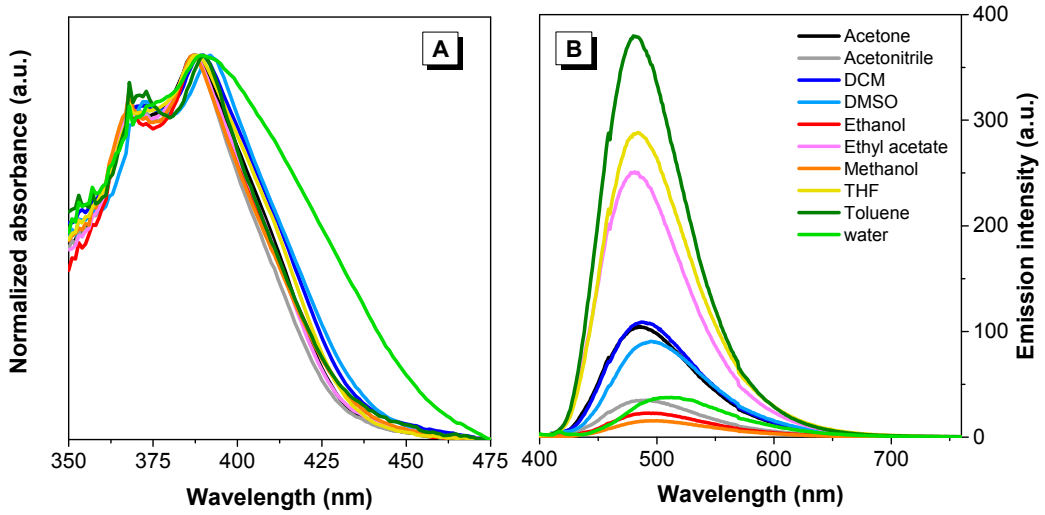


Figure S2. (**A**) normalized absorption spectra of dye **2** in different solvents; (**B**) emission spectra of dye **2** in different solvents. Concentration = 10 μM; λ_{ex}: 387 - 392 nm.

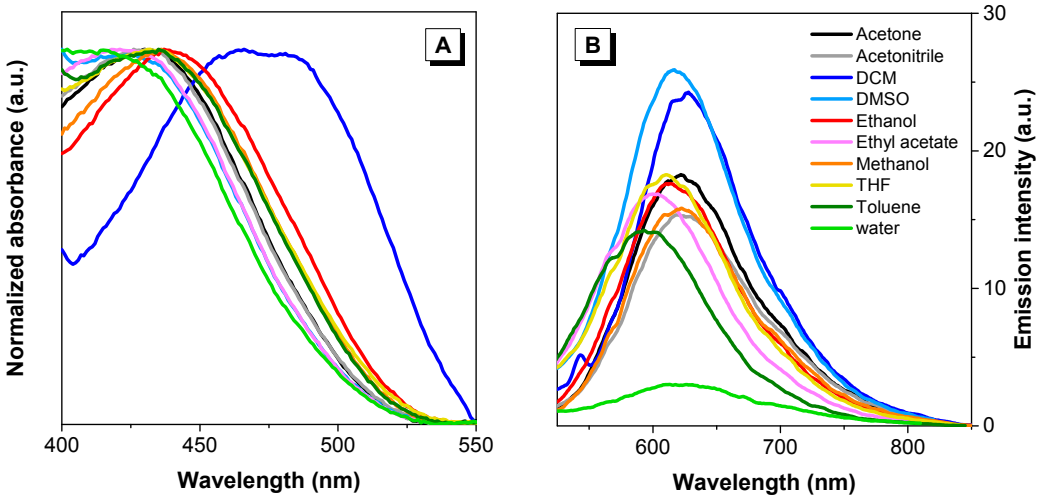


Figure S3. (**A**) normalized absorption spectra of dye **3** in different solvents; (**B**) emission spectra of dye **3** in different solvents. Concentration = 10 μM; λ_{ex}: 415 - 466 nm.

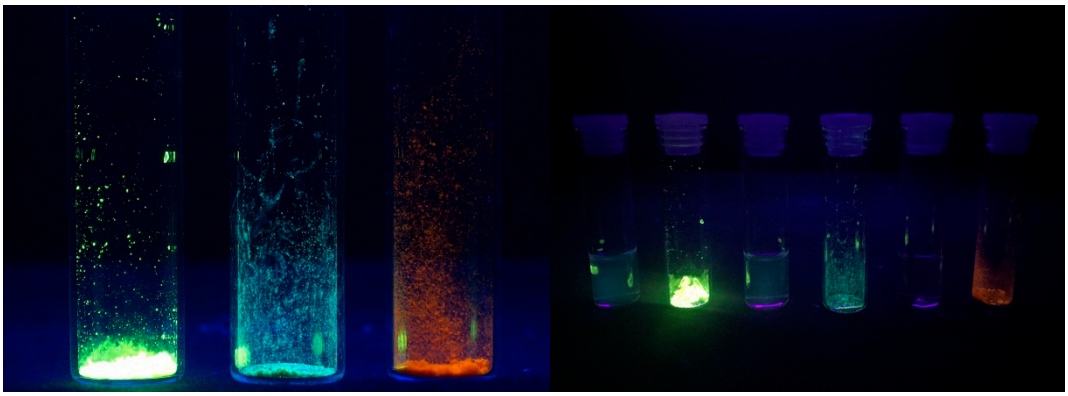


Figure S4. Photographs of dyes **1-3** taken under UV radiation (366 nm) from a hand-held UV lamp. Left: dyes **1-3** in solid state; right: dyes **1-3** dissolved in acetone compared to their solid state.

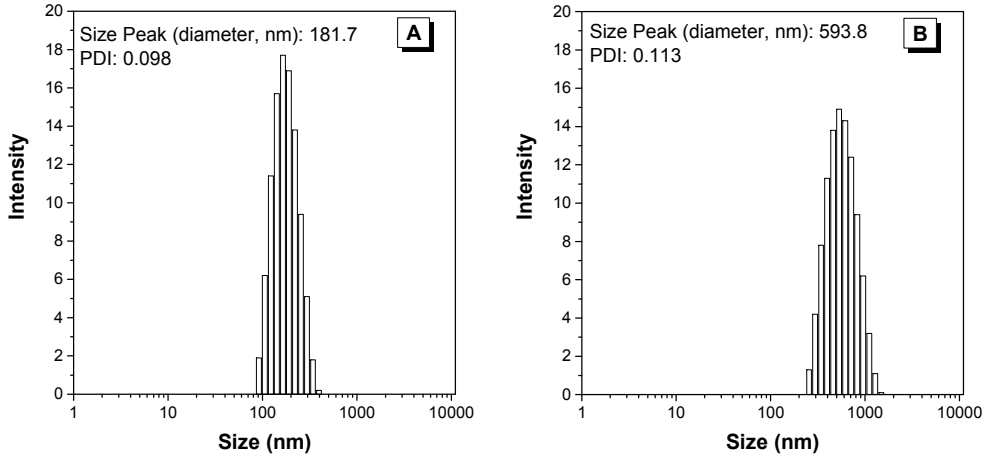


Figure S5. Dynamic Light Scattering analysis of (A) dye **1** and (B) dye **2** particles via the Zetasizer Ver 7.01 program.

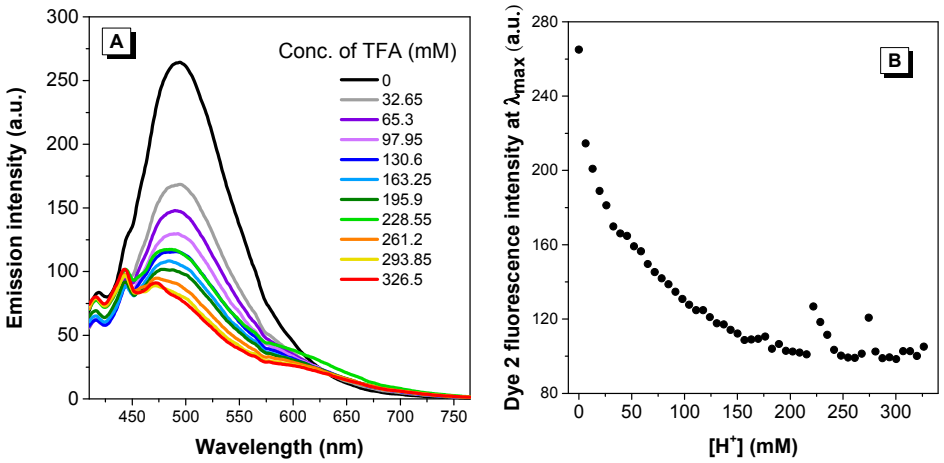
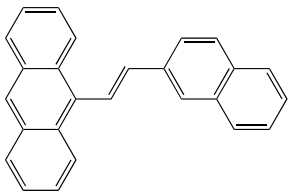
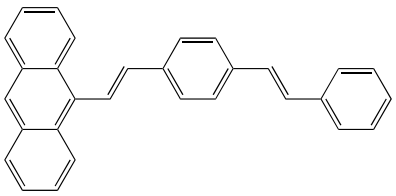


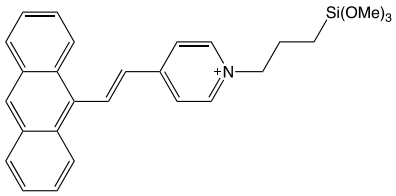
Figure S6. (**A**) emission spectra of dye 2 in water with increasing concentration of TFA. Concentration = 20 μM; λ_{ex}: 392 nm; (**B**) emission intensity of dye **2** at 488 nm vs. proton concentration.



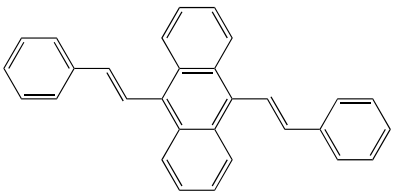
t-2-ANE



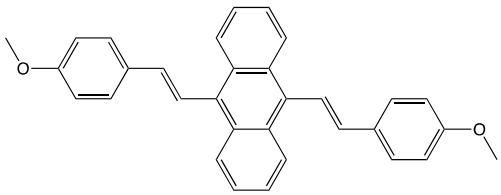
1,4-ASB



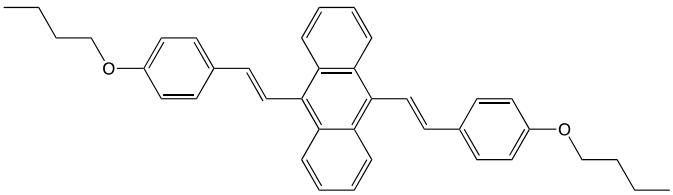
"Chromophore 9"



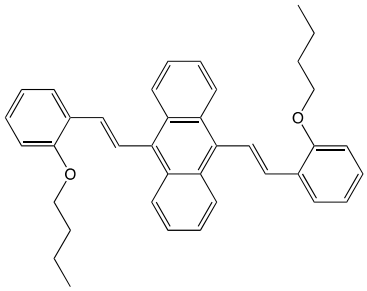
DSA



BMOSA



B-4-BOSA



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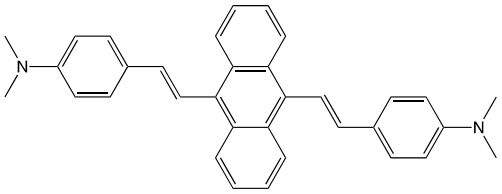
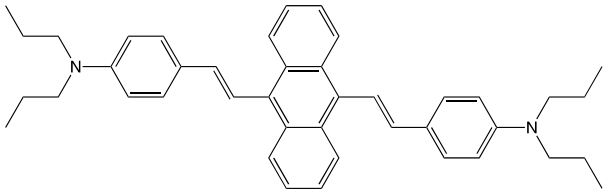


9,10-MADSA



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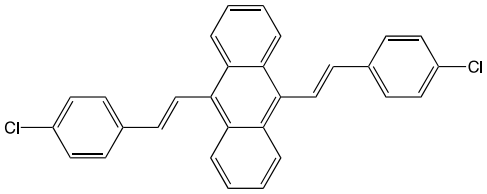
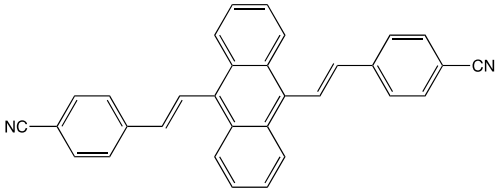
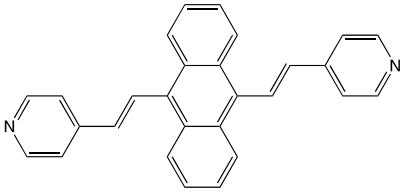


BCSA



CNDSA



BP4VA

Figure S7. Structures of anthracene analogs listed in Table 1.

Table S1. Fluorescence decay parameters of dye **1**.

Species[a]	A_1[b]	A_2[b]	A_3[b]	τ_1 [ns][b]	τ_2 [ns][b]	τ_3 [ns][b]
Dye **1**/DMSO	100			3.690		
Dye **1**/H_2O	61.5	28.4	10.1	4.849	2.230	1.068

[a] [**1**] = 10μM. [b] Determined from Equation 1, where A and τ are the fractional amount and fluorescence lifetime of different species, respectively.

$$I = A_1 e^{-\frac{t}{\tau 1}} + A_2 e^{-\frac{t}{\tau 2}} + A_3 e^{-\frac{t}{\tau 3}} \quad \text{eq.1}$$