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New highly electrodeficient cationic fluorescent tetrazines: A step toward the strongest purely organic photooxidants.

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![Figure 19](image1.png)

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![Figure 20](image2.png)
UV-Vis absorption and fluorescence emission spectra

**Figure 21:** UV-Vis absorption spectra of tetrazines 1-6 in acetonitrile.

Expanded plot of the absorbance between 400 and 600nm (n-\(\pi^*\) transition):
Figure 22: Normalized fluorescence emission spectra of tetrazine 1-4 in acetonitrile (excitation 500 nm for 1-3, 512 nm for 4, 490 nm for 5 and 6).

Fluorescence decays

Figure 23: Fluorescence decay of 3,6-bis(1-N-ethyl-imidazolium)-s-tetrazine tetrafluoroborate 1 in acetonitrile (excitation 355 nm, emission 515 nm)

\( \tau = 108 \text{ ns} \quad \chi^2 = 0.956 \)
**Figure 24:** Fluorescence decay of 3,6-bis(1-N-methyl-benzimidazolium)-s-tetrazine trifluoromethanesulfonate 2 in acetonitrile (excitation 355 nm, emission 541 nm)

\[ \tau = 41 \text{ ns} \quad \chi^2 = 1.03 \]

**Figure 25:** Fluorescence decay of 6-(methoxyadamantan-1-yl)-3-(1-N-methyl-imidazolium)-s-tetrazine trifluoromethanesulfonate 3 in acetonitrile (excitation 355 nm, emission 565 nm)

\[ \tau = 156 \text{ ns} \quad \chi^2 = 0.97 \]
**Figure 26:** fluorescence decay of $6$-(methoxyadamantan-1-yl)-3-(1-N-methylbenzimidazolium)-s-tetrazine trifluoromethanesulfonate 4 in acetonitrile (excitation 355 nm, emission 555 nm)

\[ \tau = 125 \text{ ns} \ \chi^2 = 1.05 \]

**Figure 27:** fluorescence decay of $6$-(methoxyadamantan-1-yl)-3-(1-(2-nonyl)-N-methylbenzimidazolium)-s-tetrazine trifluoromethanesulfonate 5 in dichloromethane (excitation 355 nm, emission 575 nm)

\[ \tau = 122 \text{ ns} \ \chi^2 = 1.08 \]
**Figure 28:** fluorescence decay of 6-(methoxyadamantan-1-yl)-3-(1-(5-chloro)benzimidazolium)-s-tetrazine trifluoromethanesulfonate 6 in dichloromethane (excitation 355 nm, emission 565 nm)

\[ \tau = 110 \text{ ns} \quad \chi^2 = 1.08 \]

**Time-resolved quenching experiments**

**Figure 29:** Fluorescence decays of tetrazine 1 (4.0 \times 10^{-4} \text{ M} in acetonitrile) in the presence of increasing amounts of benzene (excitation 532 nm, emission 560 nm)
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Fluorescence on the solid state

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