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SUPPLEMENTARY INFORMATION

Phase Transition Thermochromism Based on C-H Acidity of 4-Alkylflavylium Compounds in Pluronic® F-127

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1. Crystal packing of the flavylim salt 5b and the C−H···O hydrogen bounds S2

2. UV-Vis spectra of ethylenic bases S3

6a (Fig. S2) S3
6b (Fig. S2) S3

3. ^{1}H NMR spectra of 5a and 5b in $CDCl_3$ and in D_2O/CD_3OD (1:1) at pH≈4 and of **6b** in $CDCl_3$. S4

5a (Fig. S3 and S4) S4
5b (Fig. S5 and S6) S5
6b (Fig. S7) S6

4. Titration of compounds **1** and **5a** in aqueous 20% (w/v) Pluronic® F127 S7

1 (Fig. S8) S7
5a (Fig. S9) S7

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1. Crystal packing of the flavylim salt 5b and the C–H···O hydrogen bounds

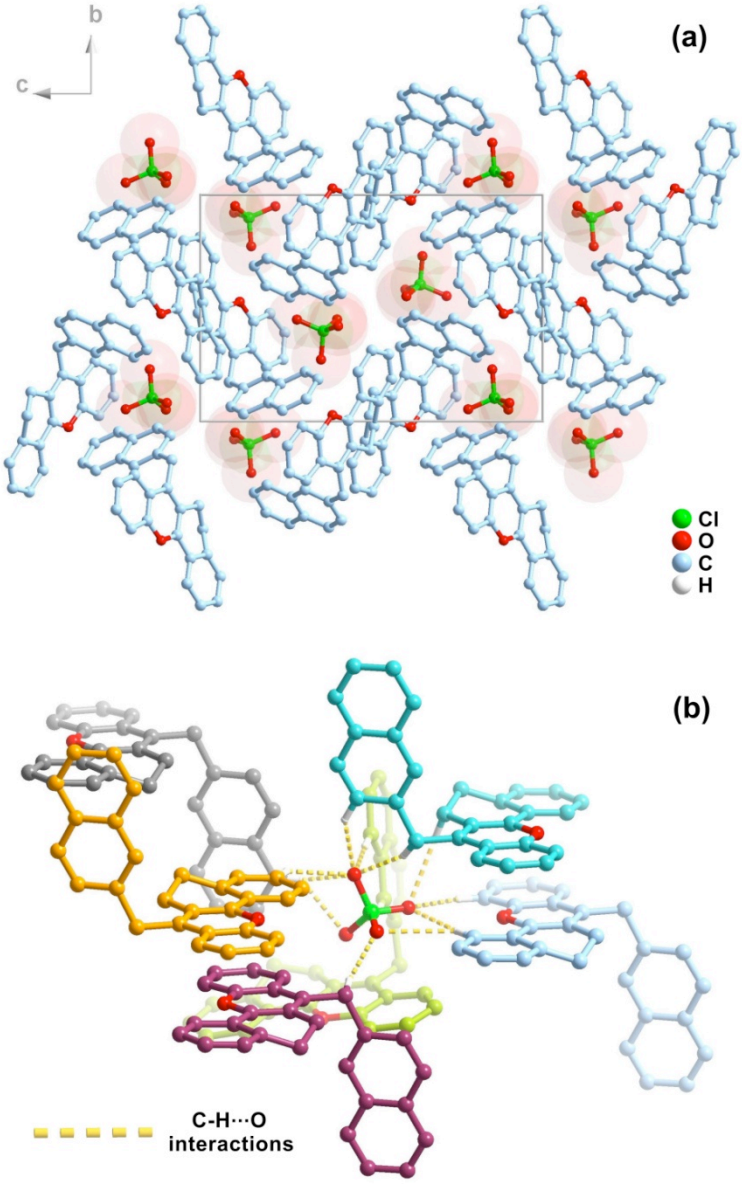

Fig. S1 – a) Crystalline packing arrangement of the compound **5b** viewed in the [1 0 0] direction of the unit cell. b) Weak C–H···O hydrogen bound interactions (shown as golden dashed lines) between the perchlorate anion and the neighboring flavylium molecules; for clarity purpose the carbon atoms of distinct organic molecules are drawn in different colors.

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2. UV-Vis spectra of ethylenic bases

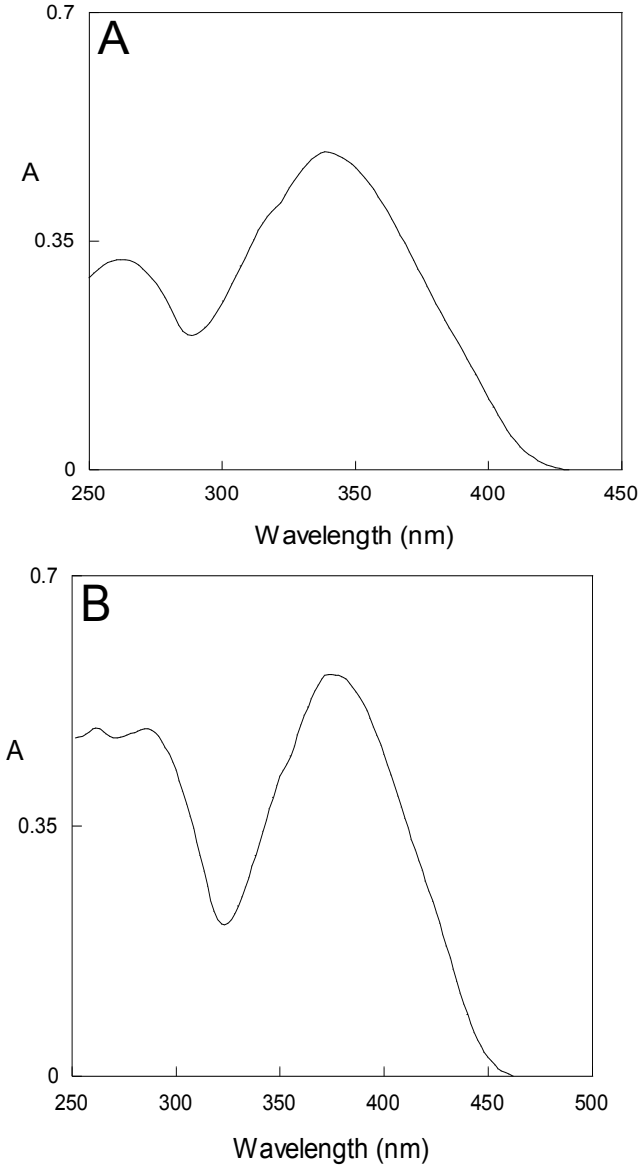

Fig. S2 – UV-Vis spectra of ethylenic base solutions in chloroform: A. [**6a**]=1.3×10^{-5} M; B. [**6b**]=2.0×10^{-5} M

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3. ^{1}H NMR spectra of 5a and 5b in $CDCl_3$ and in D_2O/CD_3OD (1:1) at pH≈4, and of 6b in $CDCl_3$.

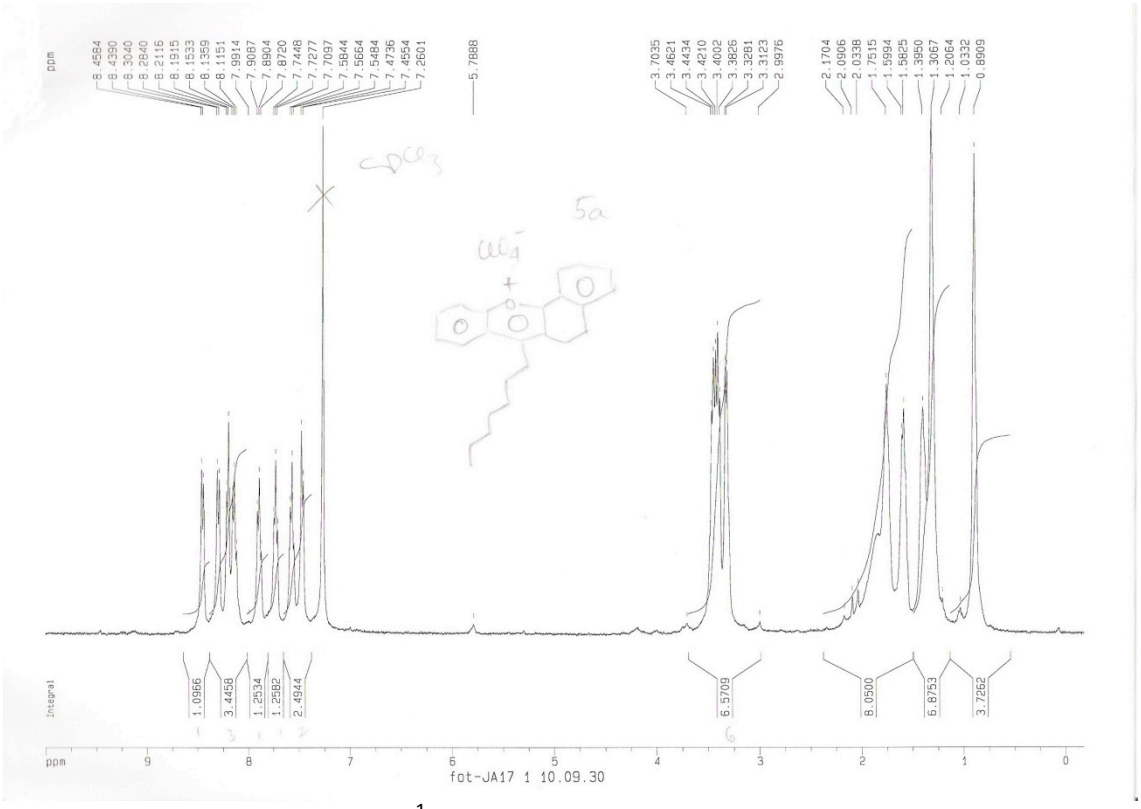

Fig. S3 – ^{1}H NMR spectrum of **5a** in $CDCl_3$.

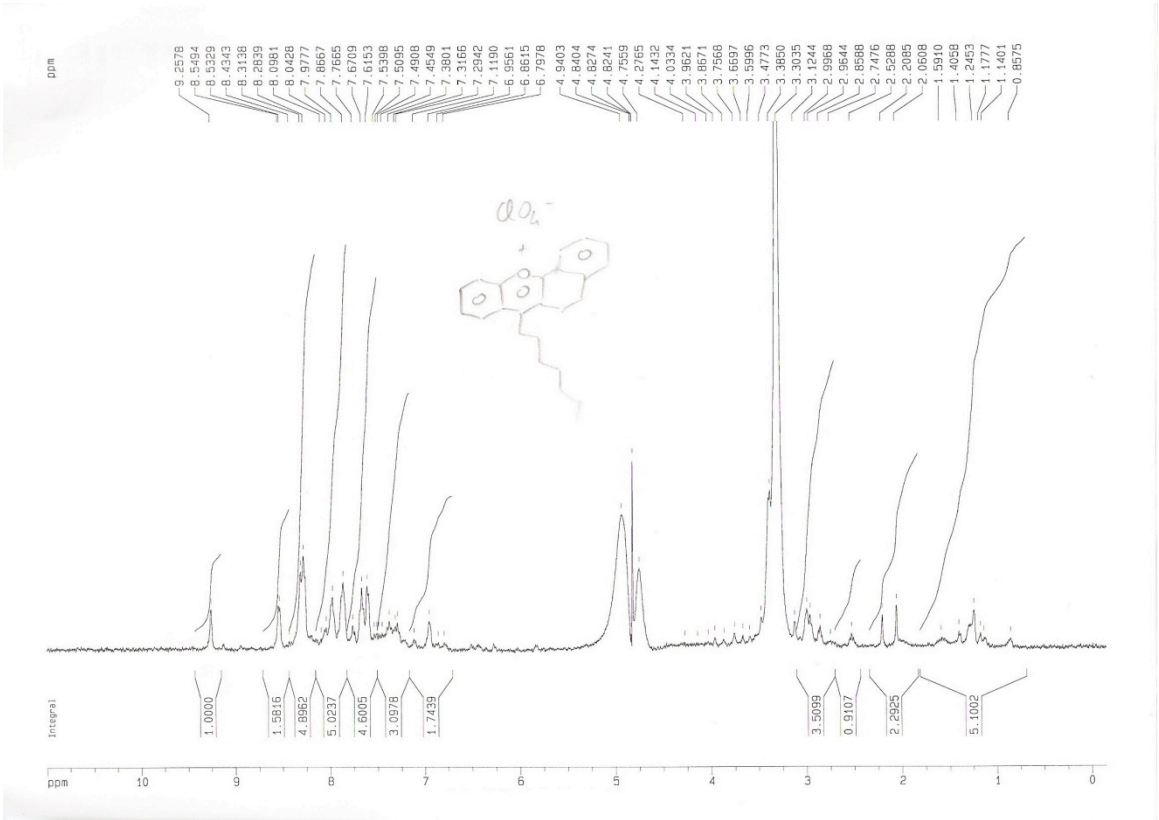

Fig. S4 – ^{1}H NMR spectrum of **5a** in D_2O/CD_3OD (1:1) at pH≈4.

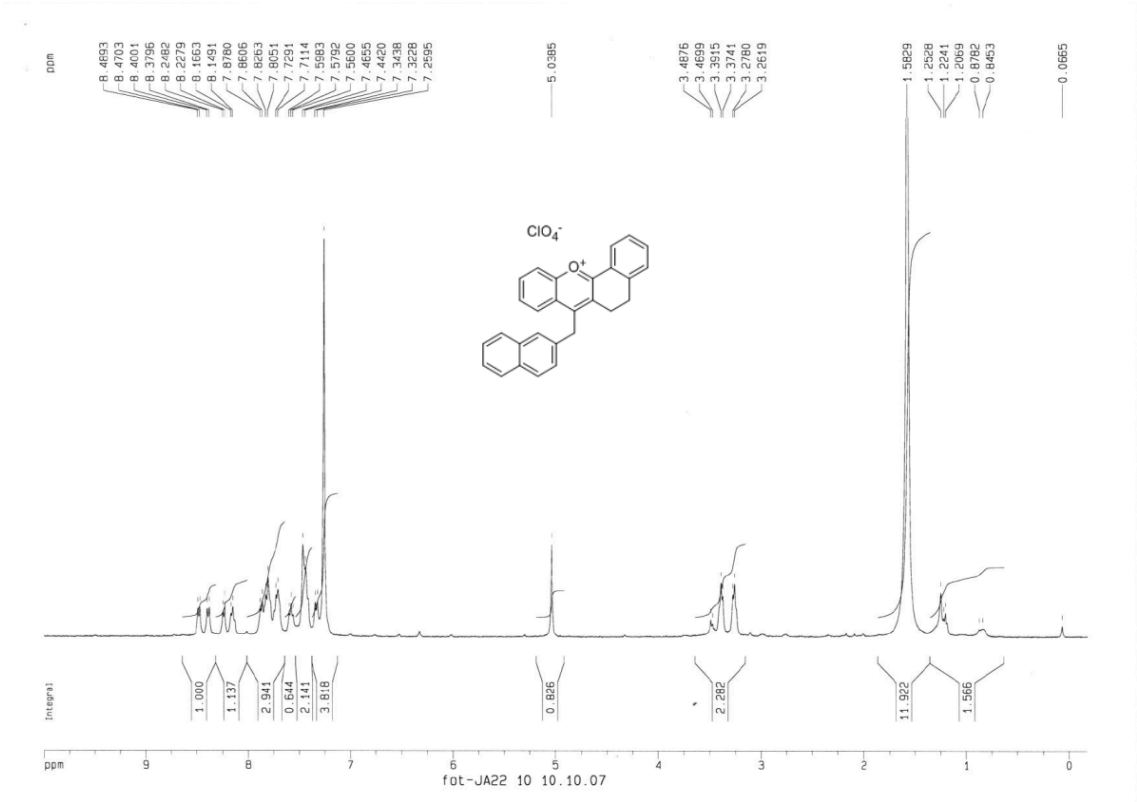

Fig. S5 – ^{1}H NMR spectrum of **5b** in $CDCl_3$.

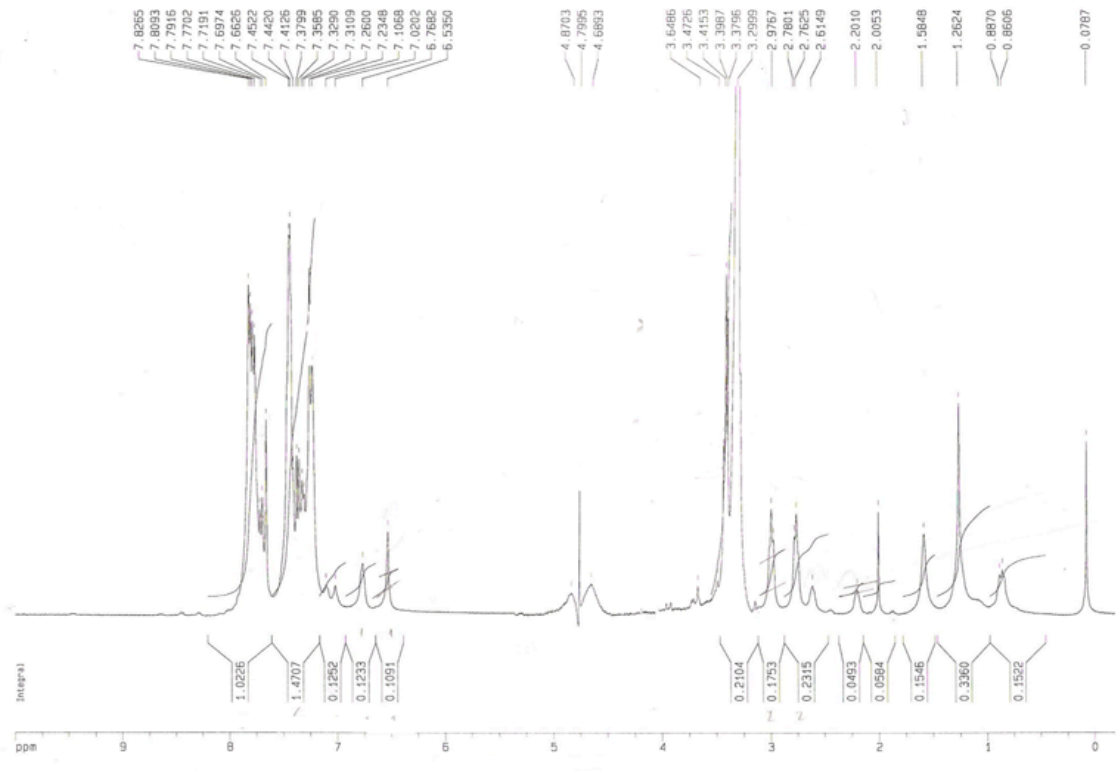

Fig. S6 – ^{1}H NMR spectrum of **5b** in D_2O/CD_3OD (1:1) at pH≈4.

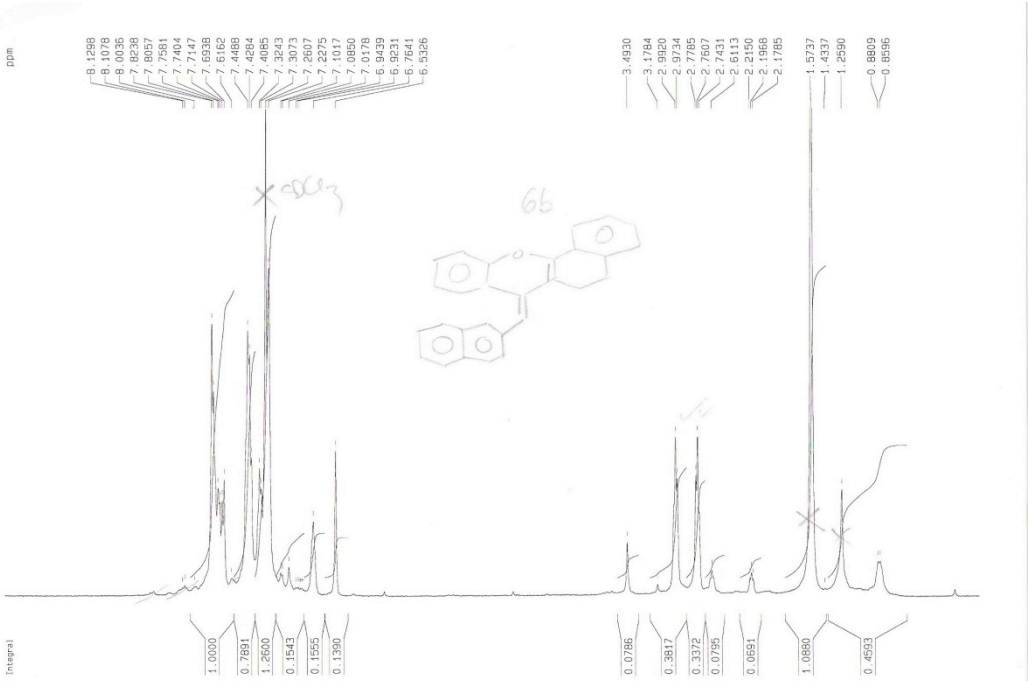

Fig. S7 – ^{1}H NMR spectrum of **6b** in $CDCl_3$.

4. Titration of compounds 1 and 5a in aqueous 20% (w/v) Pluronic® F127

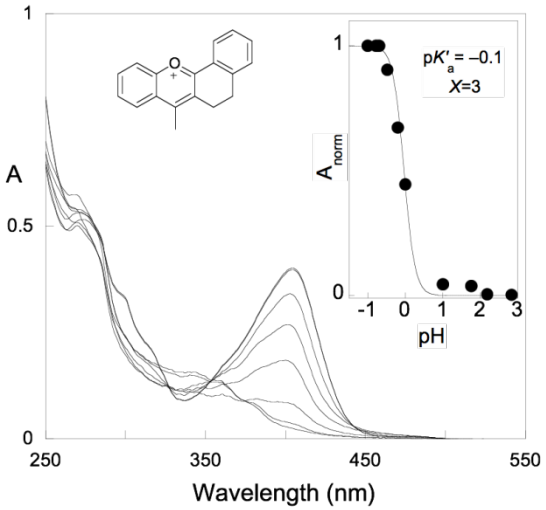

Fig. S8 – Absorption spectra of compound **1** 1.2×10^{-4} M in the presence of 20% (w/v) Pluronic® micelles at room temperature. Fitting of the absorbance according to eq. (9).

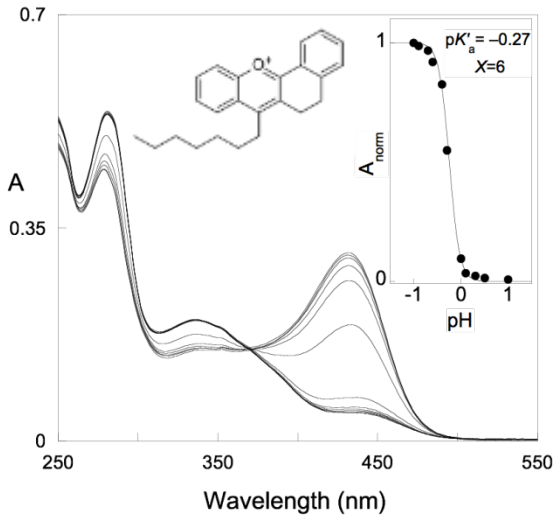

Fig. S9 – Absorption spectra of compound **5a** 2.3×10^{-5} M in the presence of 20% (w/v) Pluronic® micelles at room temperature. Fitting of the absorbance according to eq. (9).