Supporting Information

Crystal data for BF, DSC, PXRD, TG, absorption and emission spectra
for BF:C4BA and BF:C6BA

Innovative use of liquid crystalline acids as color developers in leuco dye-based temperature sensors

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Table S1 Crystal data and details of the structure determination for BF.

Empirical formula	$C_{28}H_{23}NO_3$
Formula weight (g mol^{-1})	421.47
Crystal system, space group	Orthorhombic, *Pbca*
a (Å)	11.936(1)
b (Å)	16.714(8)
c (Å)	20.990(4)
V (Å^3)	4188(3)
Z	8
D_{calc} (g cm^{-3})	1.337
μ (mm^{-1})	0.691
F(000)	1776
Crystal size (mm)	0.187 x 0.263 x 0.364
Radiation type, wavelength, λ (Å)	Cu Kα, 1.54184
Temperature (K)	100.00(10)
θ Range (°)	4.213–75.784
Absorption correction	analytical
T_{min}/T_{max}	0.674/0.828
Reflections collected/unique/observed	45736/4330/4286

R_{int}	0.0157
Refinement on	F^2
$R[F^2 > 2\sigma(F^2)]$	0.0345
wR (F^2 all reflections)[a]	0.0844
Goodness-of-fit, S	1.041
$\Delta\rho_{max}$, $\Delta\rho_{min}$ (e Å^{-3})	+0.225, –0.213

[a] $wR = \{\Sigma[w(F_o^2 - F_c^2)^2]/\Sigma wF_o^4\}^{1/2}$; $w^{-1} = [\sigma^2(F_o^2) + (0.0392P)^2 + 1.9043P]$ where $P = (F_o^2 + 2F_c^2)/3$.

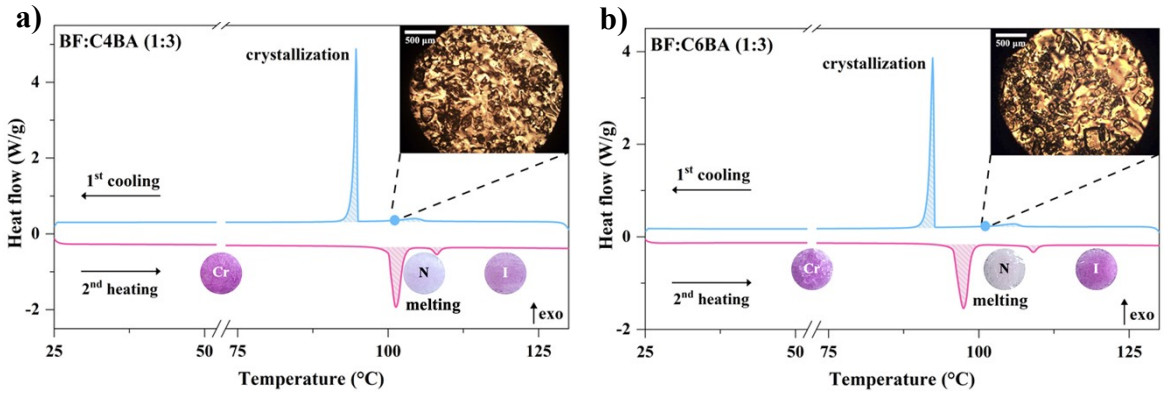

Fig. S1 DSC curves of BF:C4BA (1:3) (a) and BF:C6BA (1:3) (b). In the insets, corresponding POM images taken at 105°C are presented.

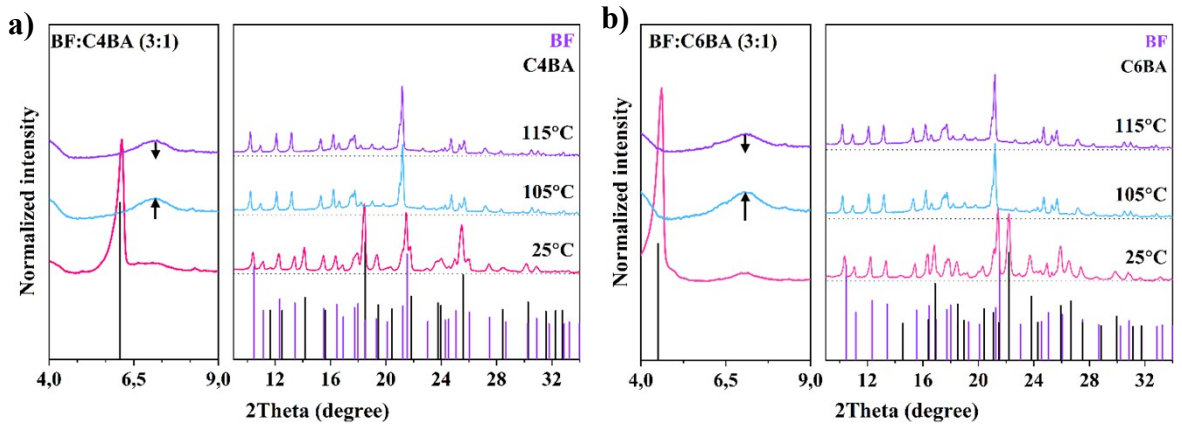

Fig. S2 PXRD patterns of BF:C4BA (1:3) (a) and BF:C6BA (1:3) (b), measured at 25°C, 105°C and 115°C.

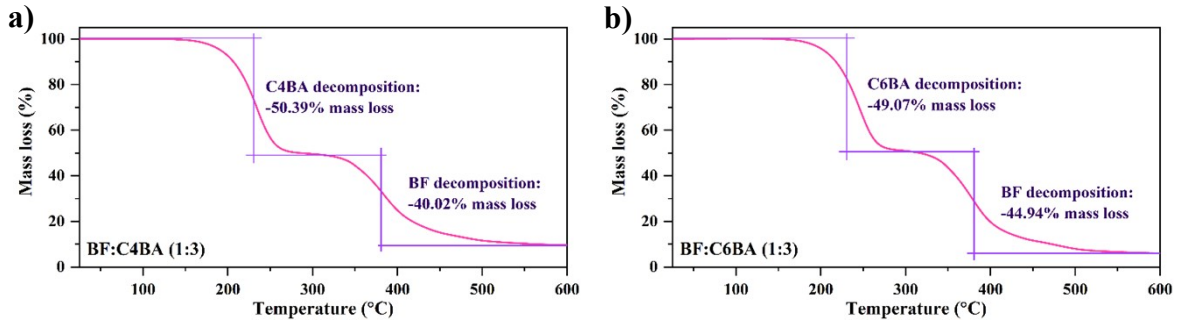

Fig. S3 TG curves of BF:C4BA (1:3) (a) and BF:C6BA (1:3) (b).

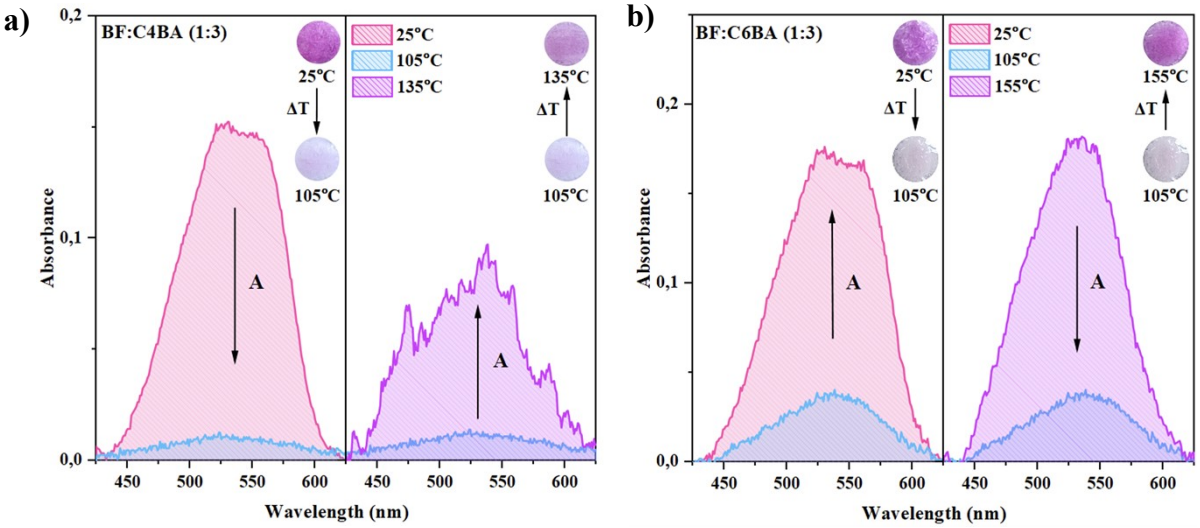

Fig. S4 Absorption spectra of BF:C4BA (1:3) (a) and BF:C6BA (1:3) (b), measured at 25°C, 105°C and 135/155°C.

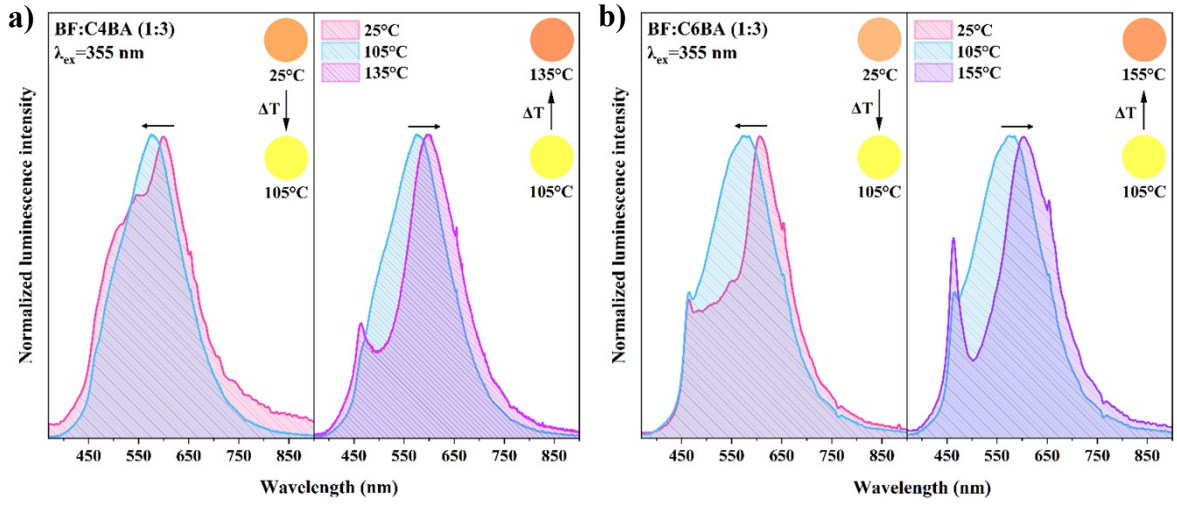

Fig. S5 Photoluminescence spectra BF:C4BA (1:3) (a) and BF:C6BA (1:3) (b), measured at 25°C, 105°C and 135/155°C.

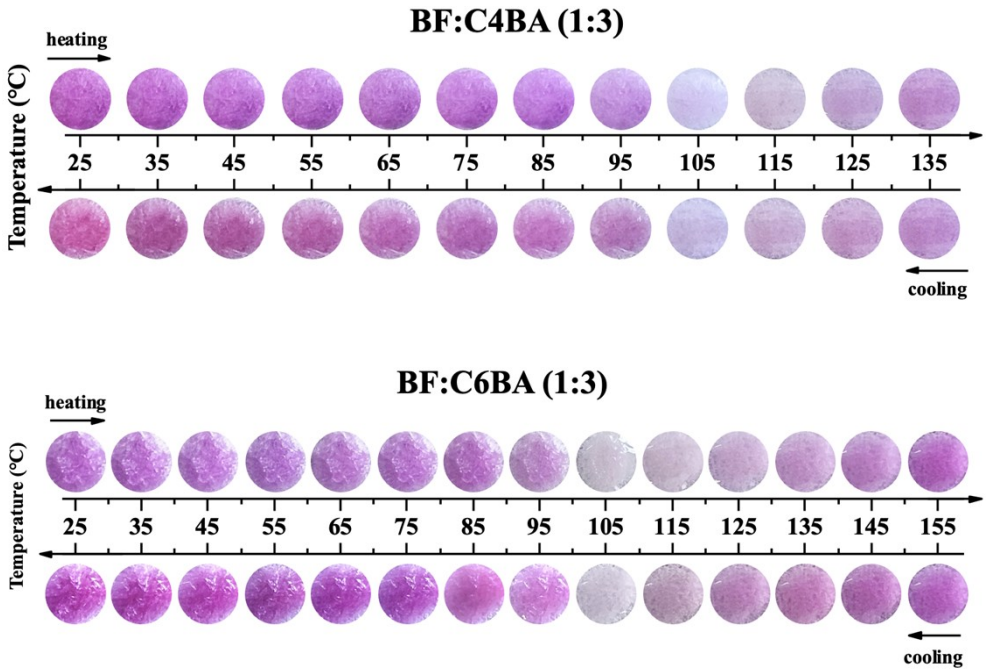

Fig. S6 Diagram presenting the color change of BF:C4BA (1:3) and BF:C6BA (1:3).