

An AIE-active acridine functionalized spiro[fluorene-9,9'-xanthene] luminophore with mechanoresponsive luminescence for anti-counterfeting, information encryption and blue OLEDs

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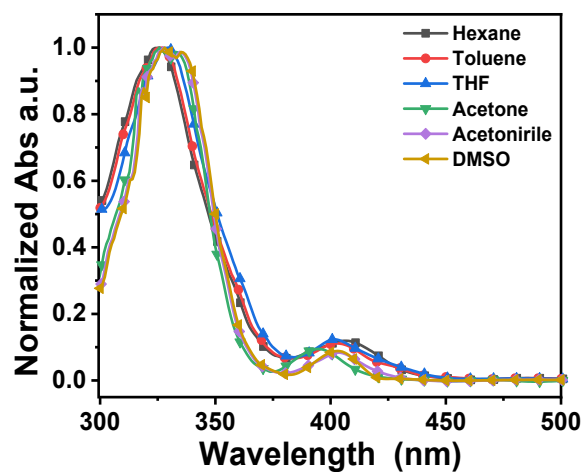


Fig. S1. UV spectra of **SFX-Ad** in various solvents (10^{-5} M).



Fig. S2 Photograph of **SFX-Ad** in different water fractions taken under an UV light (365 nm).



Fig. S3 Photograph of **SFX-Ad** in various solvents (10^{-5} M) taken under an UV light (365 nm).

Table S1 Photophysical data of **SFX-Ad** in various solvents.

Solution	Φ_F (%)	τ (ns)	K_r (ns^{-1})	K_{nr} (ns^{-1})
Hexane	3.5	3.4	0.010	0.281
Toluene	3.7	2.9	0.012	0.332
THF	4.1	3.1	0.013	0.309
Acetone	2.6	3.2	0.008	0.304
Acetonitrile	2.4	3.1	0.007	0.314
DMSO	7.2	5.5	0.013	0.168

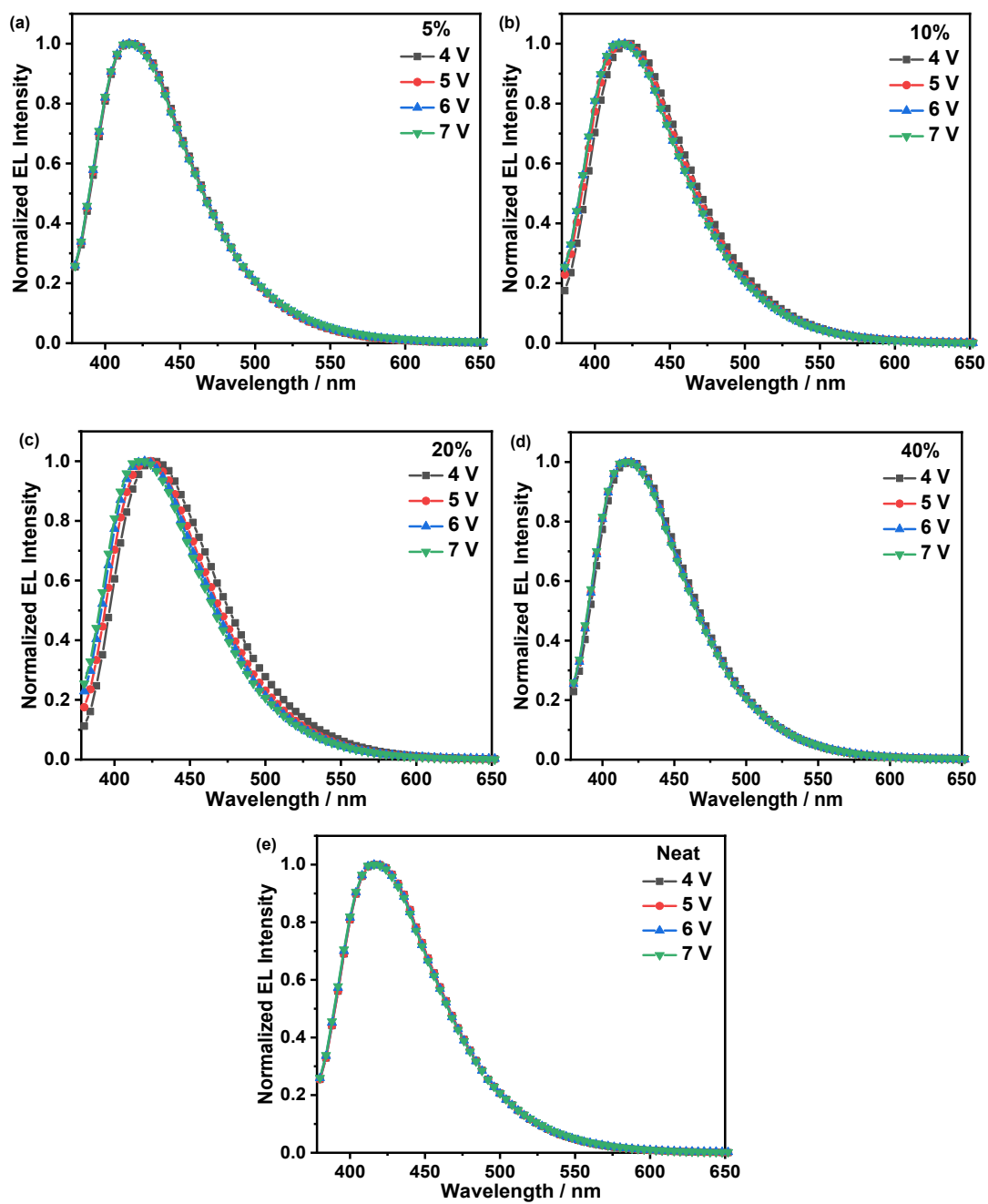


Fig. S4 Electroluminescence spectra of the OLEDs based on (a) 5%, (b) 10%, (c) 20% and (d) 40% of **SFX-Ad** doping in DPEPO and (e) neat **SFX-Ad** at various voltages.

Table S2 Crystal data and structure refinement for **SFX-Ad**.

Identification code	SFX-Ad
Empirical formula	C ₈₅ H ₆₈ N ₄ O
Formula weight	1161.43
Temperature/K	293(2)
Crystal system	monoclinic
Space group	P2 ₁ /c
a/Å	17.9569(2)
b/Å	22.0618(3)
c/Å	17.3243(2)
α/°	90
β/°	90.3821(10)
γ/°	90
Volume/Å ³	6863.10(15)
Z	4
ρ _{calc} /cm ³	1.124
μ/mm ⁻¹	0.506
F(000)	2456.0
Crystal size/mm ³	0.14 × 0.07 × 0.03
Radiation	Cu Kα (λ = 1.54184)
2θ range for data collection/°	4.922 to 155.336
Index ranges	-22 ≤ h ≤ 22, -27 ≤ k ≤ 26, -20 ≤ l ≤ 21
Reflections collected	53340
Independent reflections	13976 [R _{int} = 0.0413, R _{sigma} = 0.0364]
Data/restraints/parameters	13976/0/820
Goodness-of-fit on F ²	1.025
Final R indexes [I > 2σ (I)]	R ₁ = 0.0609, wR ₂ = 0.1772
Final R indexes [all data]	R ₁ = 0.0752, wR ₂ = 0.1920
Largest diff. peak/hole / e Å ⁻³	0.31/-0.20

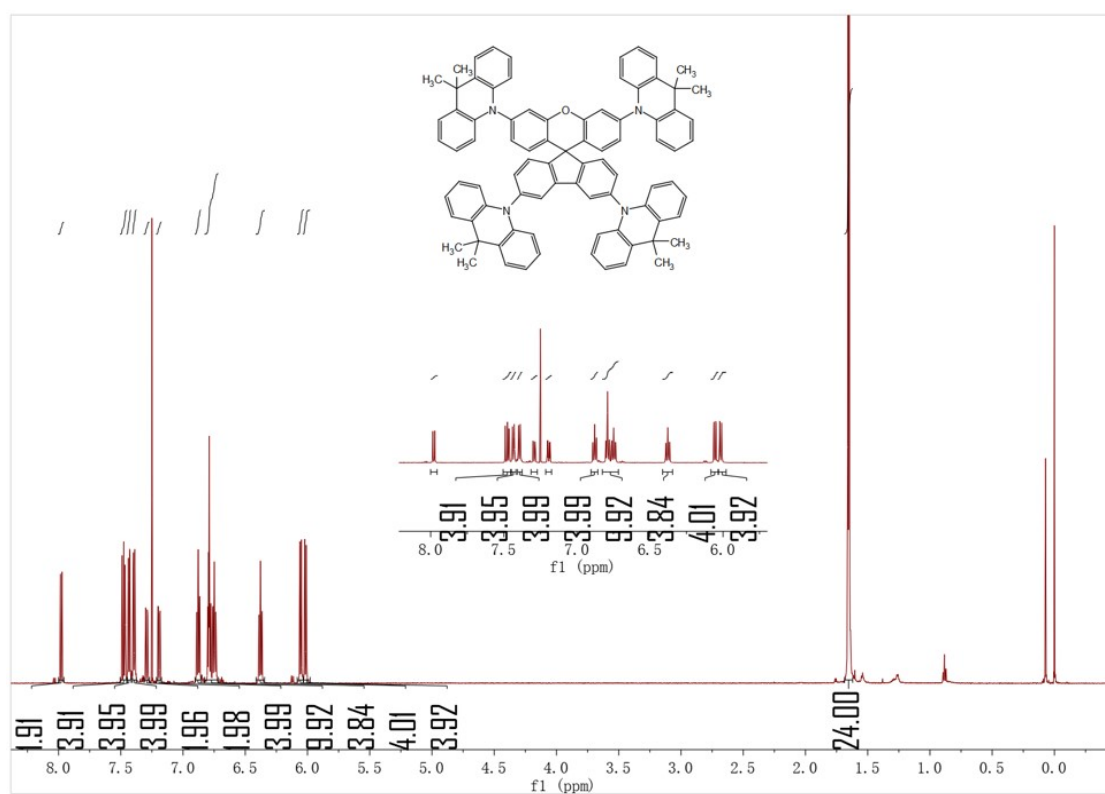


Fig. S5 ^1H NMR spectrum of SFX-Ad.

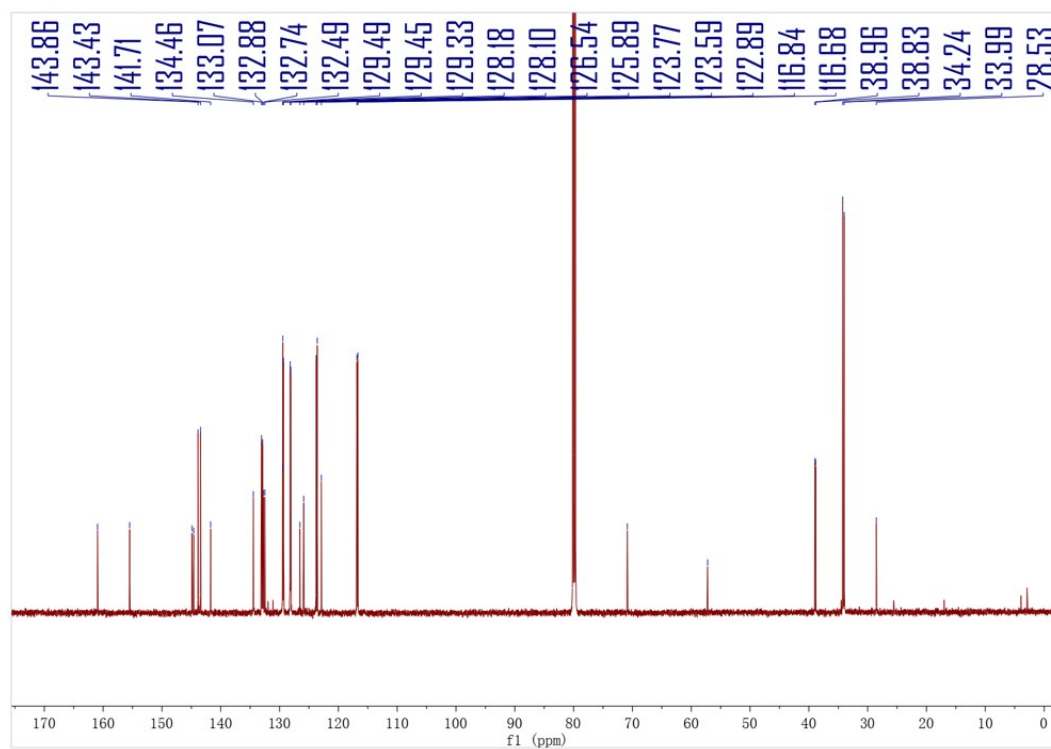


Fig. S6 ^{13}C NMR spectrum of SFX-Ad.

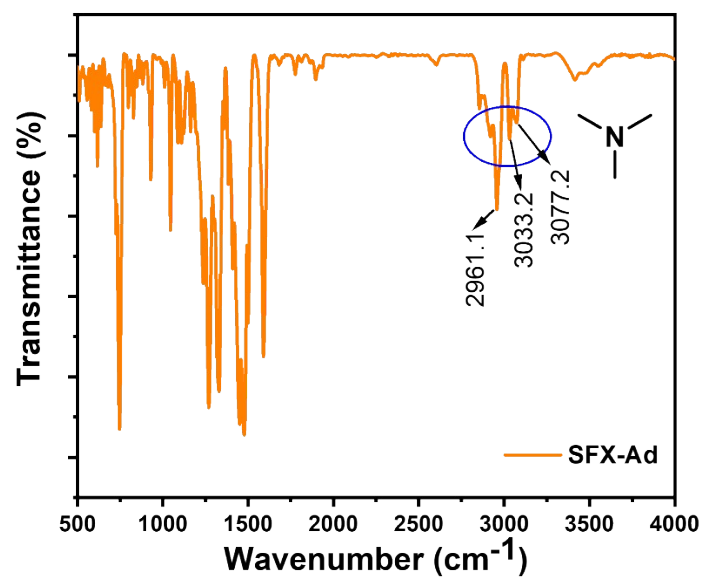


Fig. S7 IR spectrum of **SFX-Ad**.

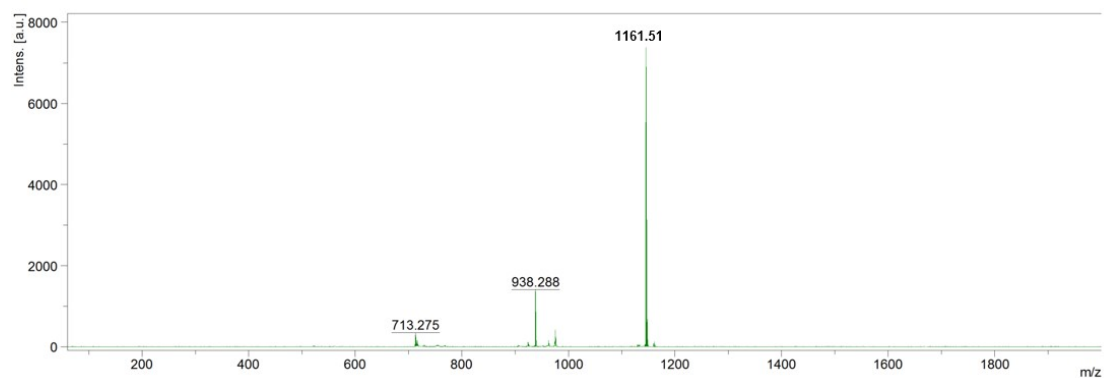


Fig. S8 MALDI-TOF spectrum of **SFX-Ad**.