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Supplementary information

Thermally controlled dual-mode display media with red-green-blue coloration and fluorescence via energy transfer between emission materials and leuco dyes

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Analytical data for prepared PU18

^{1}H NMR (400 MHz, DMSO): δ = 8.92 (s, 1H, -OH), 8.00 (s, 1H, Ph-NH-), 7.12 (d, *J* = 8.8 Hz, 2H), 6.61 (d, *J* = 8.8 Hz, 2H), 5.92 (t, *J* = 5.7 Hz, 1H, -N*H*-CH_2-), 3.02 (dd, *J* = 6.5 Hz, 2H, -NH-C*H*$_2$-), 1.38 (dd, *J* = 6.5 Hz, 2H, -NH-CH_2-C*H*$_2$-), 1.23 (br, 30H), 0.85 (t, *J* = 6.8 Hz, 3H, -CH_3). EA: Found. C 74.13%, H 11.02%, N 6.85%; Calcd. for $C_{25}H_{44}N_2O_2$: C 74.21%, H 10.96%, N 6.92%. White powder.

Fig. S1 Schematic drawing of coloration reaction of DEBN, Yellow 1, Blue-220, and Cyan-6.

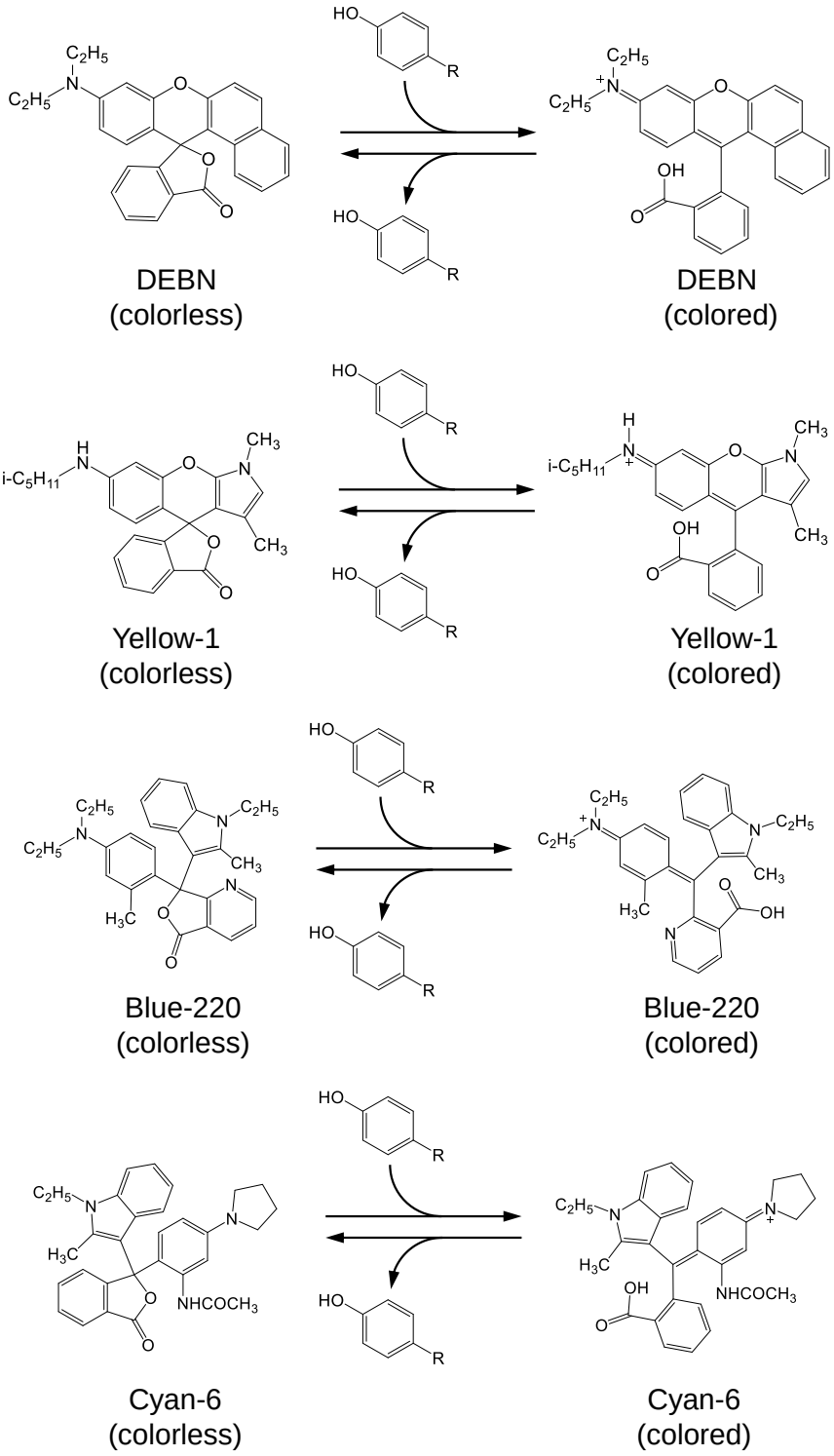

Fig. S2 DSC curves of binder polymer (PEMA) and developer molecules (PU18), obtained at a heating rate 10 ^{o}C/min.

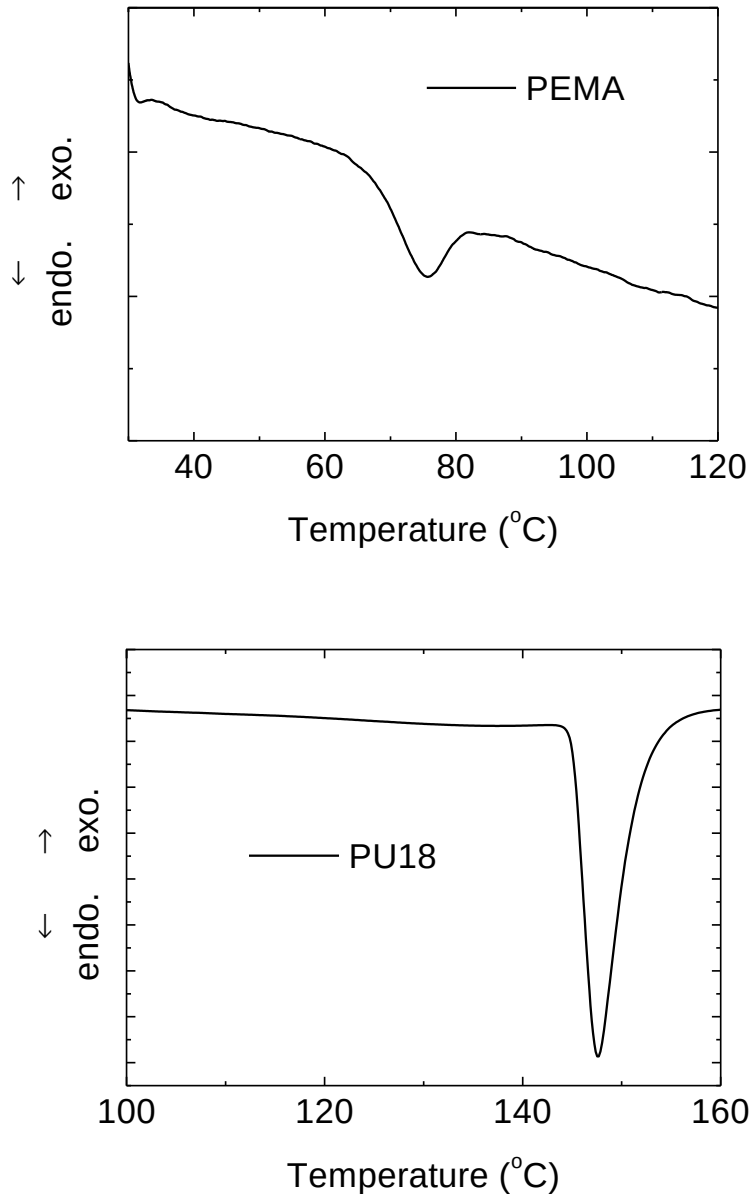

Fig. S3 Emission decay curves of the red film in the colored state (red line) and the transparent state (black line).

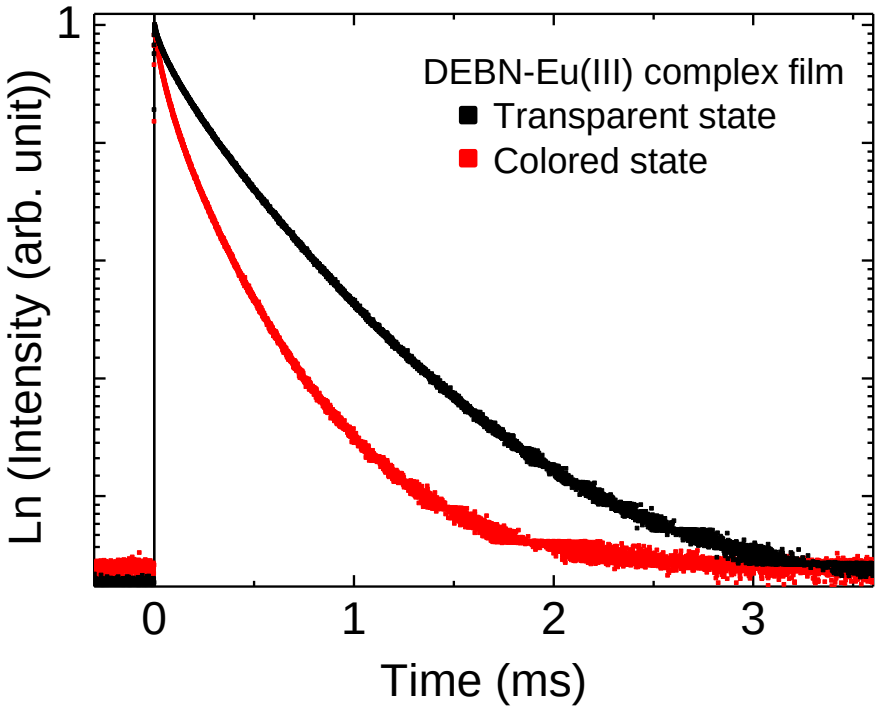

Fig. S4 Temperature dependence of the emission intensity at 613 nm of the PEMA film containing only $Eu(TTA)_3phen$.