**Supplementary information**

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

Kouki Ogasawara¹, Kazuki Nakamura¹,²* and Norihisa Kobayashi¹,²*

¹Department of Image and Materials Science, Graduate School of Advanced Integration Science, Chiba University
² Molecular Chirality Research Center, Chiba University
koban@faculty.chiba-u.jp

Analytical data for prepared PU18

¹H 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, -NH-CH2-), 3.02 (dd, J = 6.5 Hz, 2H, -NH-CH2-), 1.38 (dd, J = 6.5 Hz, 2H, -NH2-CH2-), 1.23 (br, 30H), 0.85 (t, J = 6.8 Hz, 3H, -CH3). EA: Found. C 74.13%, H 11.02%, N 6.85%; Calcd. for C25H44N2O2: 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 °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)$_3$phen.