

Electronic Supplementary Information:

## Fluorescence Properties of Pyrene Derivative Aggregates Formed in Polymer Matrix Depending on Concentration

Fuyuki Ito,<sup>\*a,b</sup> Toshifumi Kakiuchi,<sup>a</sup> Takeshi Sakano<sup>a</sup> and Toshihiko Nagamura<sup>\*a</sup>

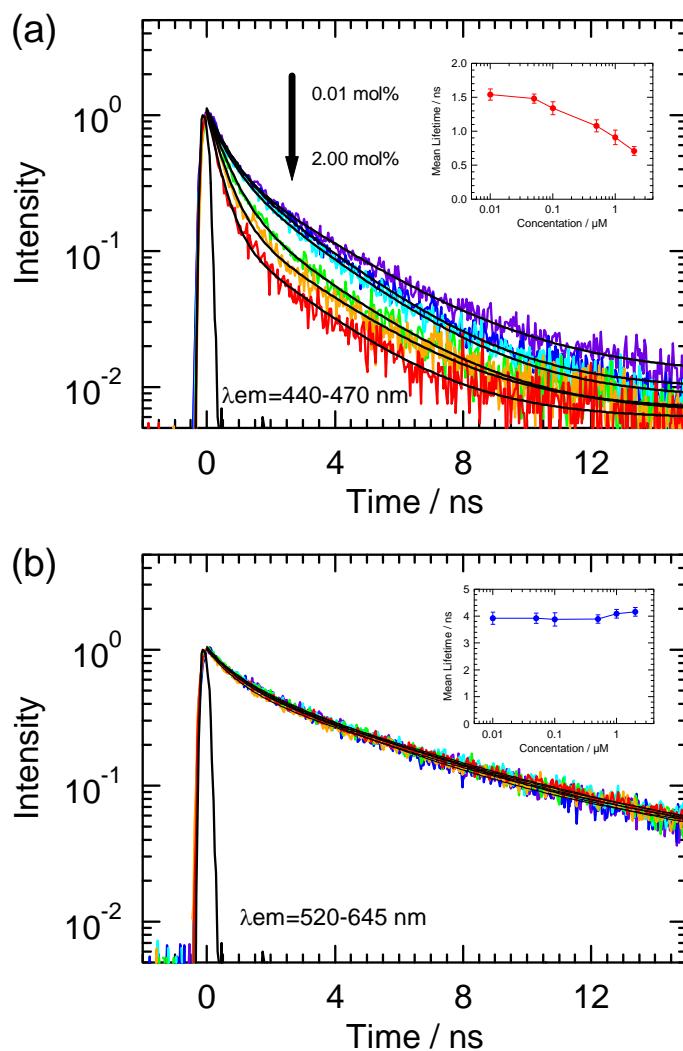


Figure ESI 1. Fluorescence decay of PyAm/PVA films as a function of dye concentrations monitored at (a) 440-470 nm and (b) 520-645 nm. The excitation wavelength is 400 nm.

Table ESI 1 Time constant and mean fluorescence lifetime obtained from tri-exponential function of PyAm in PVA films shown in Figure ESI 1(a) as a function of dye concentration.

$C$ / mol%	$\tau_1$ / ns ( $A_1$ )	$\tau_2$ / ns ( $A_2$ )	$\tau_3$ / ns ( $A_3$ )	$\tau_{\text{ave}}$ / ns
0.01	0.44 (0.54)	2.05 (0.40)	7.99 (0.06)	1.54
0.05	0.45 (0.46)	1.79 (0.49)	7.09 (0.06)	1.48
0.10	0.48 (0.53)	1.76 (0.42)	6.29 (0.06)	1.34
0.50	0.51 (0.70)	1.78 (0.27)	8.06 (0.03)	1.08
1.00	0.38 (0.74)	1.68 (0.23)	7.02 (0.04)	0.91
2.00	0.36 (0.84)	1.70 (0.15)	9.04 (0.02)	0.71

Table ESI 2 Time constant and mean fluorescence lifetime obtained from bi-exponential function of PyAm in PVA films shown in Figure ESI 1(b) as a function of dye concentration.

$C$ / mol%	$\tau_1$ / ns ( $A_1$ )	$\tau_2$ / ns ( $A_2$ )	$\tau_{\text{ave}}$ / ns
0.01	1.68 (0.63)	7.68 (0.37)	3.92
0.05	1.58 (0.62)	7.68 (0.38)	3.92
0.10	1.53 (0.63)	7.85 (0.37)	3.88
0.50	1.47 (0.64)	8.13 (0.36)	3.89
1.00	1.39 (0.61)	8.34 (0.39)	4.09
2.00	1.36 (0.56)	7.75 (0.44)	4.16