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Supporting Information - Table 4

Fluorescence lifetimes (units: ns) of the FWAs at various temperatures.

T (°C)	(E,E)-DSBP	(E)-DAS 1	(E)-DAS 2
5.0	1.42	0.65	0.69
10.0	1.33	0.62	0.65
15.0	1.34	0.58	0.59
20.0	1.31	0.51	0.54
25.0	1.27	0.47	0.52
30.0	1.25	0.43	0.48
35.0	1.25	0.39	0.43
40.0	1.22	0.37	0.40
45.0	1.20	0.35	0.38

Supporting Information - Table 5

$\phi_{E,iso}/\phi_{Z,iso}$ of the FWAs at various temperatures.

T (°C)	DSBP	DAS 1	DAS 2
5.0	0.089		0.490
6.3		0.527	
10.0	0.103	0.576	0.577
15.0	0.113	0.635	0.671
20.0	0.122	0.755	0.739
25.0	0.136	0.804	0.768
30.0	0.152	0.866	0.826
35.0	0.185	0.961	0.854
40.0	0.207	1.036	0.879
45.0	0.229	1.069	0.907

Supporting Information

Simultaneous data fit of fluorescence lifetimes and photoisomerization quantum yield ratios of FWAs

Data were fitted using eqs 5 and 17 in the paper and the computer program SigmaPlot®, Version 2.01, Jandel Corporation. The program uses a Levenberg-Marquardt minimization algorithm. We used as weight function $1/(\text{dependent variable})^2$. The dependent variables were the fluorescence lifetime and the photoisomerization quantum yield ratio, and the independent variable was the temperature.

The following best-fit parameters were obtained:

DSBP:

Parameter	Value	StdErr	CV(%)	Dependencies
A (10^9 s^{-1})	2.613e+2	1.522e+2	5.826e+1	0.9994467
f_{iso}	5.403e-1	6.303e-2	1.166e+1	0.9977158
k_E^1 (10^9 s^{-1})	6.794e-1	2.644e-2	3.891e+0	0.9365825
E_E (kJ/mol)	1.963e+1	9.873e-1	5.029e+0	0.9988287

DAS-1:

Parameter	Value	StdErr	CV(%)	Dependencies
A (10^9 s^{-1})	3.751e+4	1.112e+4	2.965e+1	0.9982851
f_{iso}	6.290e-1	7.410e-3	1.178e+0	0.9215249
k_E^1 (10^9 s^{-1})	1.090e+0	3.148e-2	2.889e+0	0.8364881
E_E (kJ/mol)	2.614e+1	7.281e-1	2.785e+0	0.9982635

DAS-2:

Parameter	Value	StdErr	CV(%)	Dependencies
A (10^9 s^{-1})	8.198e+3	3.039e+3	3.706e+1	0.9981177
f_{iso}	5.905e-1	1.029e-2	1.742e+0	0.9258727
k_E^1 (10^9 s^{-1})	9.314e-1	4.210e-2	4.520e+0	0.8653943
E_E (kJ/mol)	2.231e+1	9.121e-1	4.088e+0	0.9981003