

## Electronic Supplementary Information

### Waterborne Polyurethanes Prepared from Benzophenone Derivative with Delayed Fluorescence and Room-Temperature Phosphorescence

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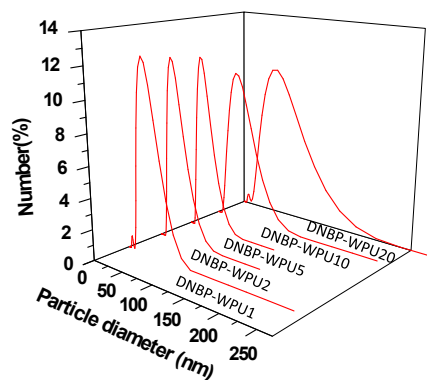
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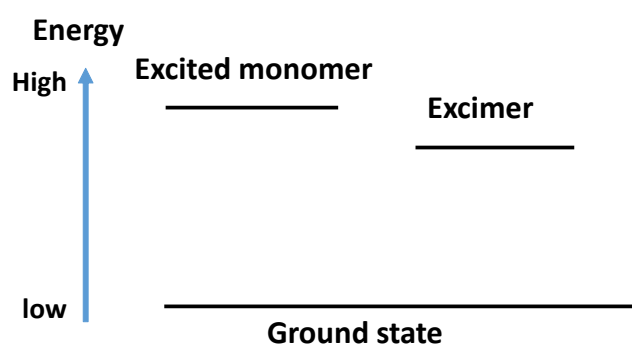
**Table S1** Detailed information of each component in WPUs and molecular weight measured by GPC

Sample <sup>a</sup>	PTMG/g	IPDI/g	DMPA/ g	BDO/g	DNBP/g	wt <sup>b</sup> /%	<i>M<sub>n</sub></i> <sup>c</sup>	PDI <sup>d</sup>
DNBP-WPU0	8.00	5.35	1.15	0.85	0	0	25200	2.78
DNBP-WPU1	8.00	5.45	1.15	0.80	0.16	1	26600	3.15
DNBP-WPU2	8.00	5.45	1.15	0.75	0.31	2	23700	2.69
DNBP-WPU5	8.00	5.45	1.15	0.58	0.79	5	24500	3.50
DNBP-WPU10	8.00	5.45	1.15	0.35	1.65	10	25500	3.35
DNBP-WPU20	8.00	5.45	0.98	0	3.58	20	27400	4.20

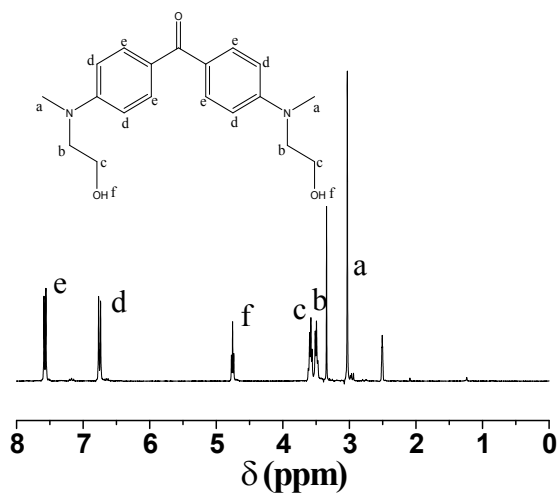
<sup>a</sup>all samples were prepared at PTMG : IPDI = 1 : 6; <sup>b</sup>Weight percentage of DNBP in WPU; <sup>c</sup>Number-average molecular weight measured in THF; <sup>d</sup>Polydispersity index ( $PDI = M_w/M_n$ )



**Fig. S1** Particle-size distribution for the aqueous dispersion of DNBP-WPU1 (28.6nm), DNBP-WPU2 (28.2nm), DNBP-WPU5 (20.0nm), DNBP-WPU10 (27.8nm), DNBP-WPU20 (45.9nm)



**Fig. S2** Graphic illustration of the decreased energy of excited-state molecules due to the formation of excimers.



**Fig. S3**  $^1\text{H}$  NMR of DNBP in  $\text{d}_6$ -DMSO.

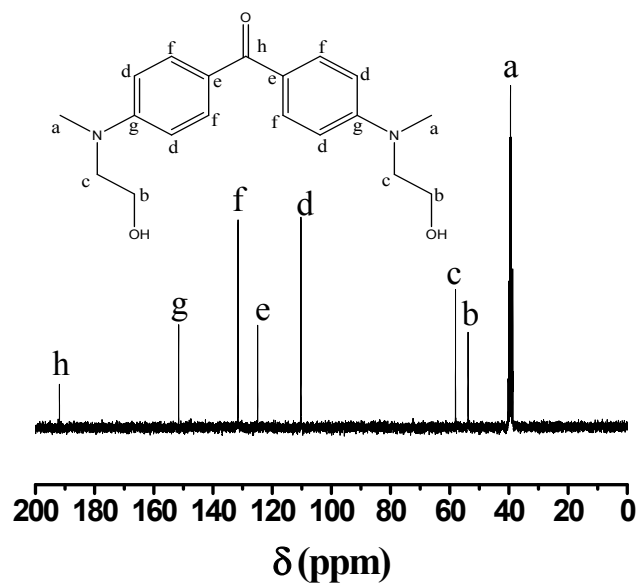


Fig. S4  $^{13}\text{C}$  NMR of DNBP in  $\text{d}_6$ -DMSO.

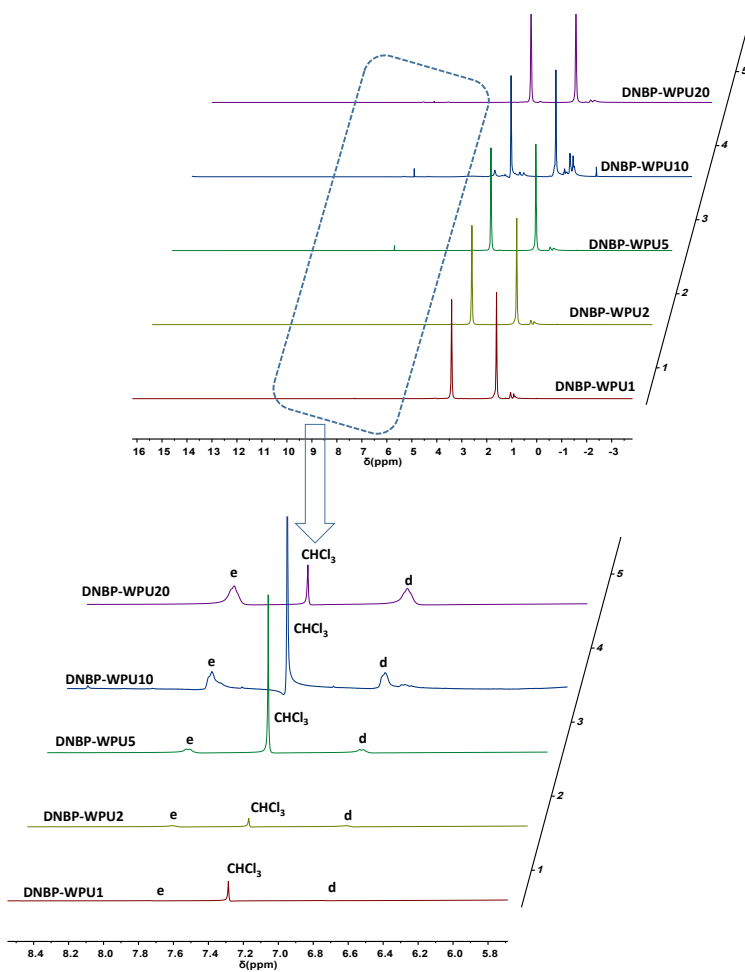


Fig. S5  $^1\text{H}$  NMR of DNBP-WPUs in  $\text{CDCl}_3$ .