

Electronic Supplementary Information for:

Dual-emissive waterborne polyacrylates: thermally-activated delayed fluorescence and room-temperature phosphorescence

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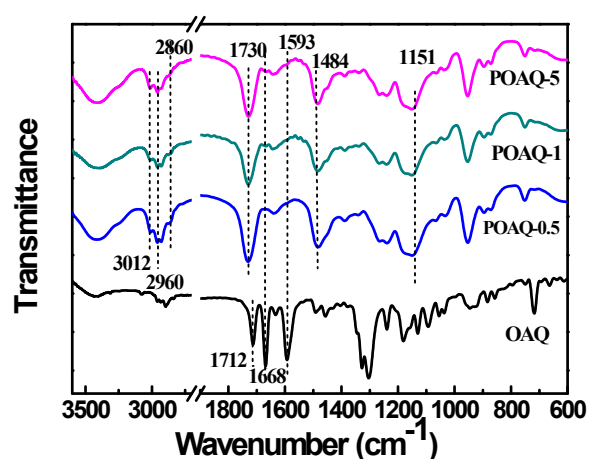


Fig. S1. FT-IR of POAQ films with various NAQ weight percentages on KBr plate (number denotes the weight percentage of OAQ, e.g. 0.5 % OAQ = POAQ-0.5. Control represents polyacrylate without OAQ).

Table S1 The specific ratio of each component in PNAQ

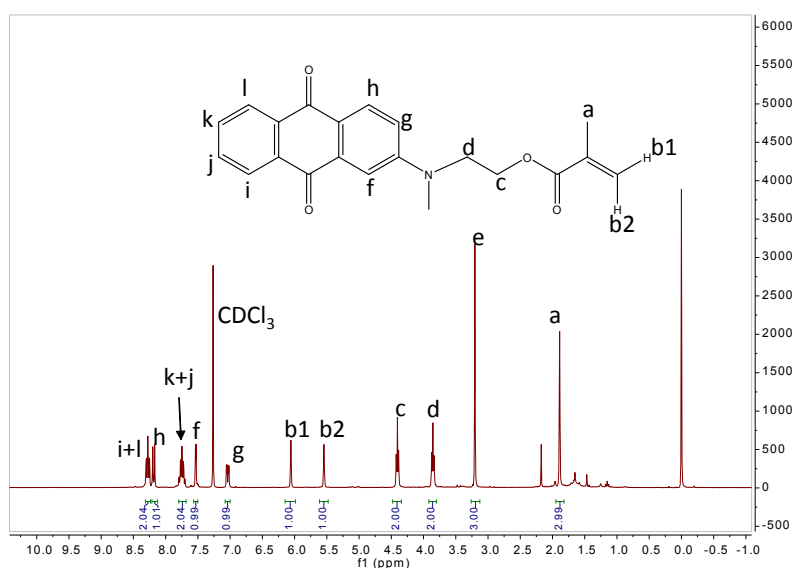
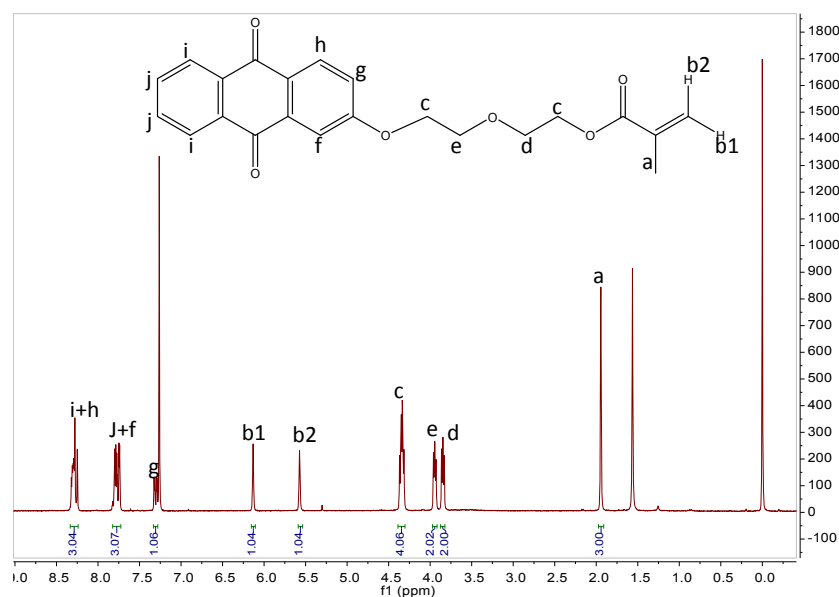
Sample	NAQ (wt%) ^a	DMC:BMA (mass ratio) ^b	AIBI (wt%) ^c	NDM (wt%) ^d	Solid Content (wt%) ^e
PNAQ0.5	0.5	5:1	1	4	30
PNAQ1	1	5:1	1	4	30
PNAQ5	5	5:1	1	4	30

^athe weight percentage of NAQ in waterborne polyacrylate; ^bthe mass ratio of DMC and BMA; ^cthe weight percentage of AIBI; ^dthe weight percentage of NDM; ^ethe weight percentage of solid content in emulsion.

Table S2 The specific ratio of each component in POAQ

Sample	OAQ (wt%) ^a	DMC:BMA (mass ratio) ^b	AIBI (wt%) ^c	NDM (wt%) ^d	Solid Content (wt%) ^e
POAQ0.5	0.5	5:1	1	4	30
POAQ1	1	5:1	1	4	30
POAQ5	5	5:1	1	4	30

^athe weight percentage of OAQ in waterborne polyacrylate; ^bthe mass ratio of DMC and BMA; ^cthe weight percentage of AIBI; ^dthe weight percentage of NDM; ^ethe weight percentage of solid content in emulsion.

**Fig. S2.** ¹H NMR spectrum of Synthesis of 2-methyl-acrylic acid 2-[(9,10-dioxo-9,10-dihydro-anthracen-2-yl)-methyl-amino]-ethyl ester (NAQ)**Fig. S3.** ¹H NMR spectrum of Synthesis of 2-{2-[(9,10-dioxo-9,10-dihydroanthracen-2-yl)oxy]ethoxy}ethyl methacrylate (OAQ)

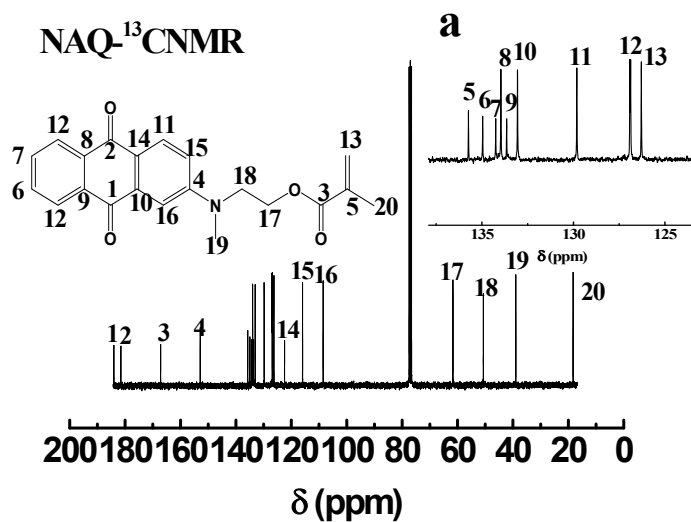


Fig. S4. ¹H NMR spectrum of 2-methyl-acrylic acid 2-[(9,10-dioxo-9,10-dihydro-anthracen-2-yl)-methyl-amino]-ethyl ester (NAQ)

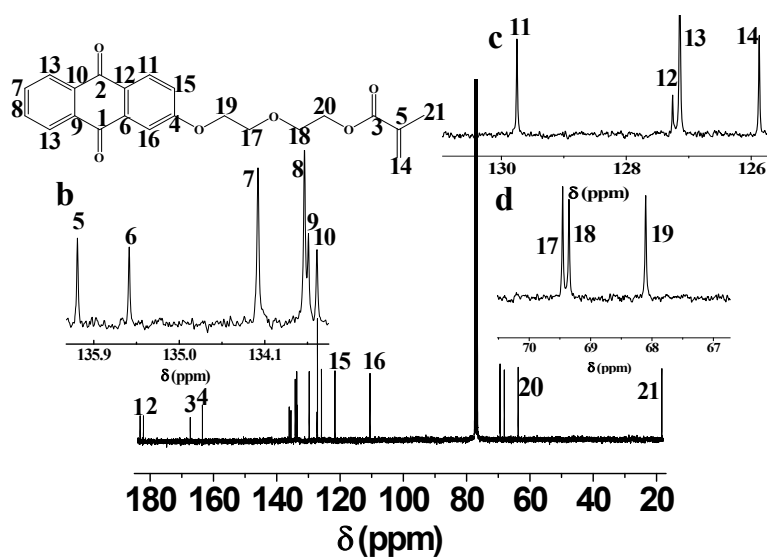
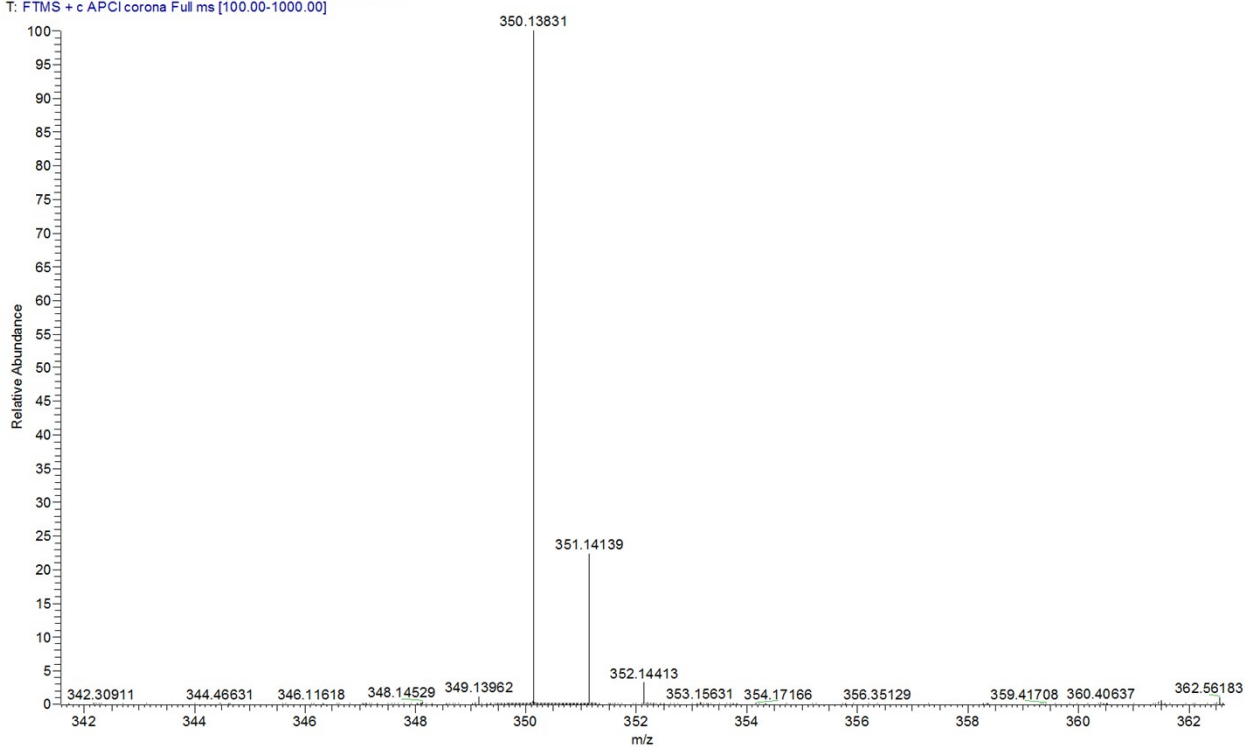


Fig. S5. ¹³C NMR spectrum of 2-{2-[(9, 10-dioxo-9, 10-dihydroanthracen-2-yl)oxy]ethoxy}ethyl methacrylate (OAQ)

20160112_APCI+AC-XD-01 #6 RT: 0.08 AV: 1 NL: 1.25E8
T: FTMS + c APCI corona Full ms [100.00-1000.00]



m/z	Intensity	Relative	Theo. Mass	Delta (mmu)	RDB equiv.	Composition
350.13831	125227072	100	350.13868	-0.38	12.5	C21 H20 O4 N

Fig. S6. MALDI-TOF-MS spectrum of 2-methyl-acrylic acid 2-[(9,10-dioxo-9,10-dihydro-anthracen-2-yl)-methyl-amino]-ethyl ester (NAQ).

20160303_APCI+XD-AOAG #6 RT: 0.07 AV: 1 NL: 6.07E7
T: FTMS + c APCI corona Full ms [100.00-600.00]

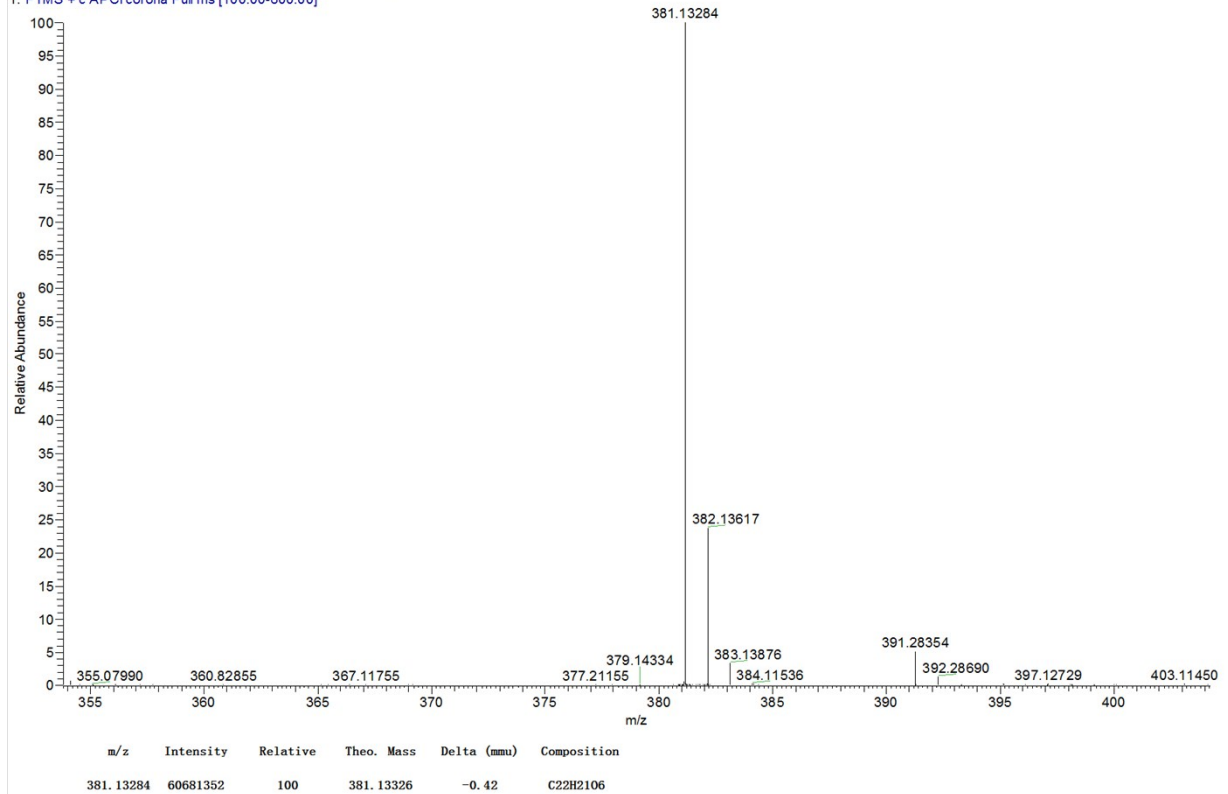


Fig. S7. MALDI-TOF-MS spectrum of 2-{2-[(9, 10-dioxo-9, 10-dihydroanthracen-2-yl)oxy]ethoxy}ethyl methacrylate (OAQ)