

Supplemental information

Charge density effects on the aggregation properties of poly(p-phenyleneethynylene) based anionic polyelectrolytes

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Temperature dependence of high charge density polymers

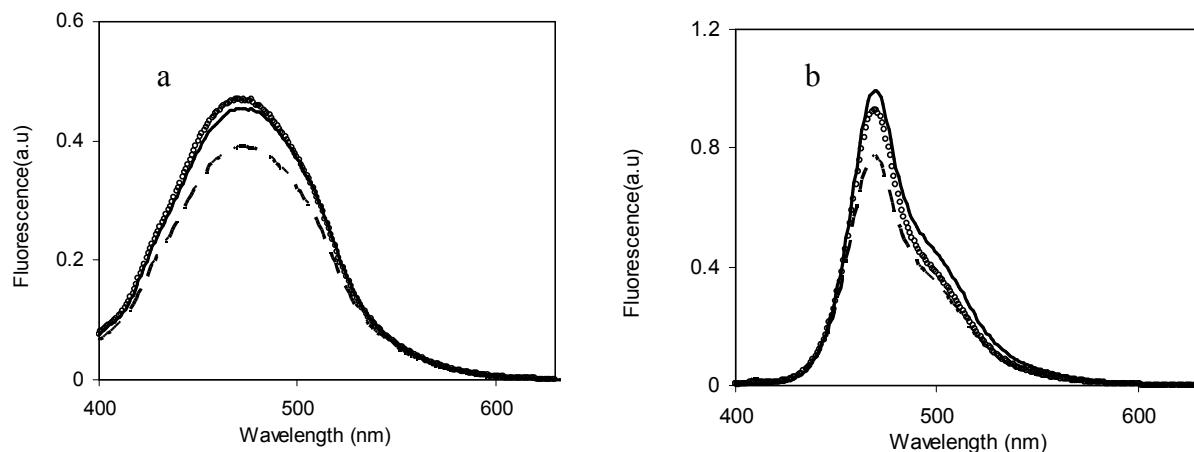


Figure 1. Panel **a**) shows emission spectra (excited at 380 nm) of PPE-SO₃Na-H (9.5×10^{-6} M) in water at room temperature (—), 363 K (---), Cooled to room temperature from 363 K (○); panel **b**) shows emission spectra (excited at 380 nm) of PPE-CO₂Na-H (5.8×10^{-6} M) in water at room temperature (—), 363 K (---), Cooled to room temperature from 363 K (○).

Concentration dependence of high charge density polymers

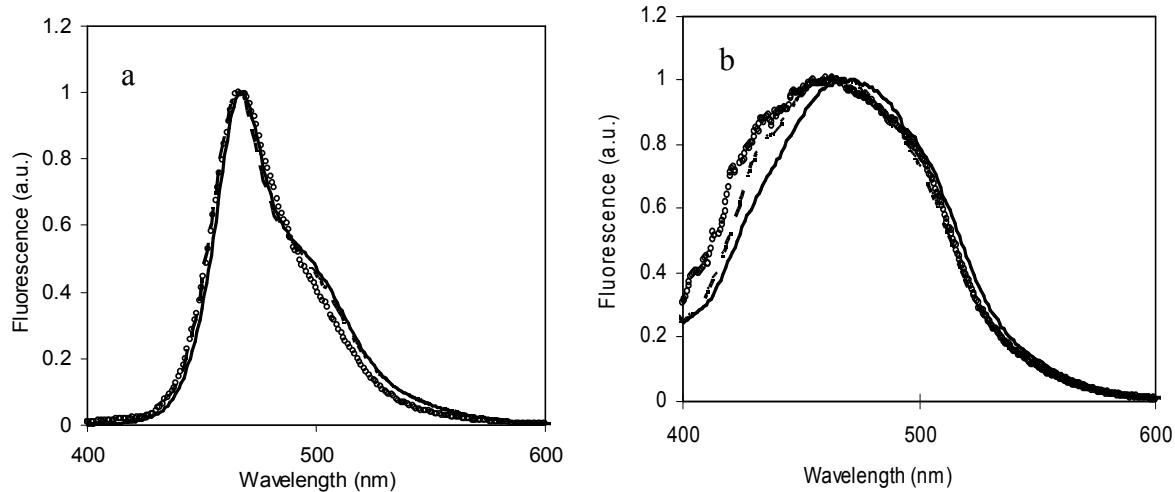


Figure 2. Normalized emission spectra (excited at 380 nm) are shown for PPE-CO₂Na-H in water at different concentrations (1.7×10^{-5} (—), 2.2×10^{-6} (- - -), 3.8×10^{-7} (○) M) in panel a); and Normalized emission spectra (excited at 380 nm) are shown for PPE-SO₃Na-H in water at different concentrations (9.5×10^{-6} (—), 3.8×10^{-6} (- - -), 3.8×10^{-7} (○) M) in panel b).

Fluorescence Lifetime and Quantum yield measurements

Table 1. Lifetime and Quantum yield measurements in water

polymer	τ (ps) in Water amplitude (%)						QY ^a
	475 nm	τ_{avg}	510 nm	τ_{avg}	560 nm	τ_{avg}	
PPE-SO ₃ Na-L	5650(14)		6107(26)		6412(38)		0.050
	1350(15)	1071	1311(18)	1868	1663(28)	2936	
	98(71)		112(56)		148(34)		
PPE-CO ₂ Na-L	3990(27)		4030(35)		4180(38)		0.018
	1400(29)	1601	1350(37)	1983	1610(37)	2356	
	297(44)		291(28)		828(25)		
PPE-SO ₃ Na-H	822(12)	252	844(13)	268	850(15)	290	0.012
	175(88)		183(87)		191(85)		
PPE-CO ₂ Na-H	2030(1.8)	212	1640(4.7)	261	2040(6.9)	339	0.018
	179(98.2)		193(95.3)		213(93.1)		

Table 2. Lifetime and Quantum yield measurements in DMSO

polymer	τ (ps) in DMSO amplitude (%)					QY ^a	
	475 nm	τ_{avg}	510 nm	τ_{avg}	560 nm	τ_{avg}	
PPE-SO ₃ Na-L	183(59) 535(41)	327	223(57) 561(43)	368	171(55) 563(45)	347	0.22
PPE-CO ₂ Na-L	637(77) 296(33)	559	735(51) 442(49)	590	546(87) 1300(13)	644	0.16
PPE-SO ₃ Na-H	863(18) 236(82)	348	841(17) 250(83)	353	850(19) 257(81)	370	0.026
PPE-CO ₂ Na-H	569(76) 319(24)	509	596(67) 352(33)	515	612(69) 347(31)	530	0.14

^aQY is the quantum yield of polymers in water and DMSO.