Suplementary Information

Photosensitive Ionic Nematic Liquid Crystalline Complexes based on Dendrimers and Hyperbranched Polymers and a Cyanoazobenzene Carboxylic Acid

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Contents

1. Supporting information figures

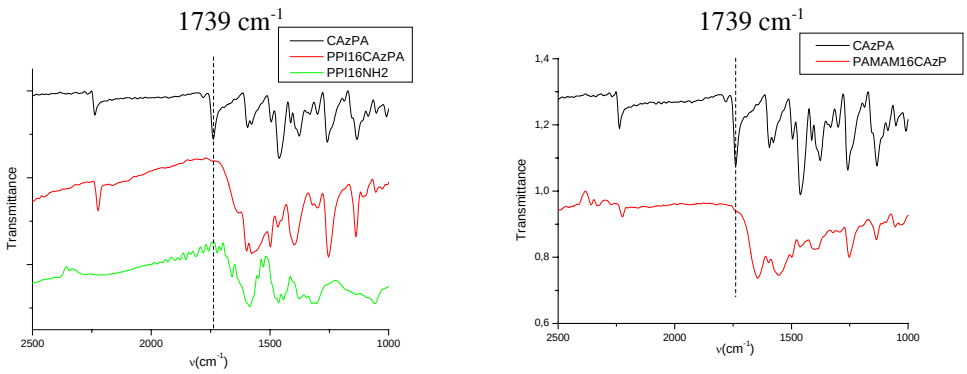

Figure S1. FT IR spectra of complexes: PPI-CAzPA and PAMAM-CAzPA compared with that of the CAzPA acid.

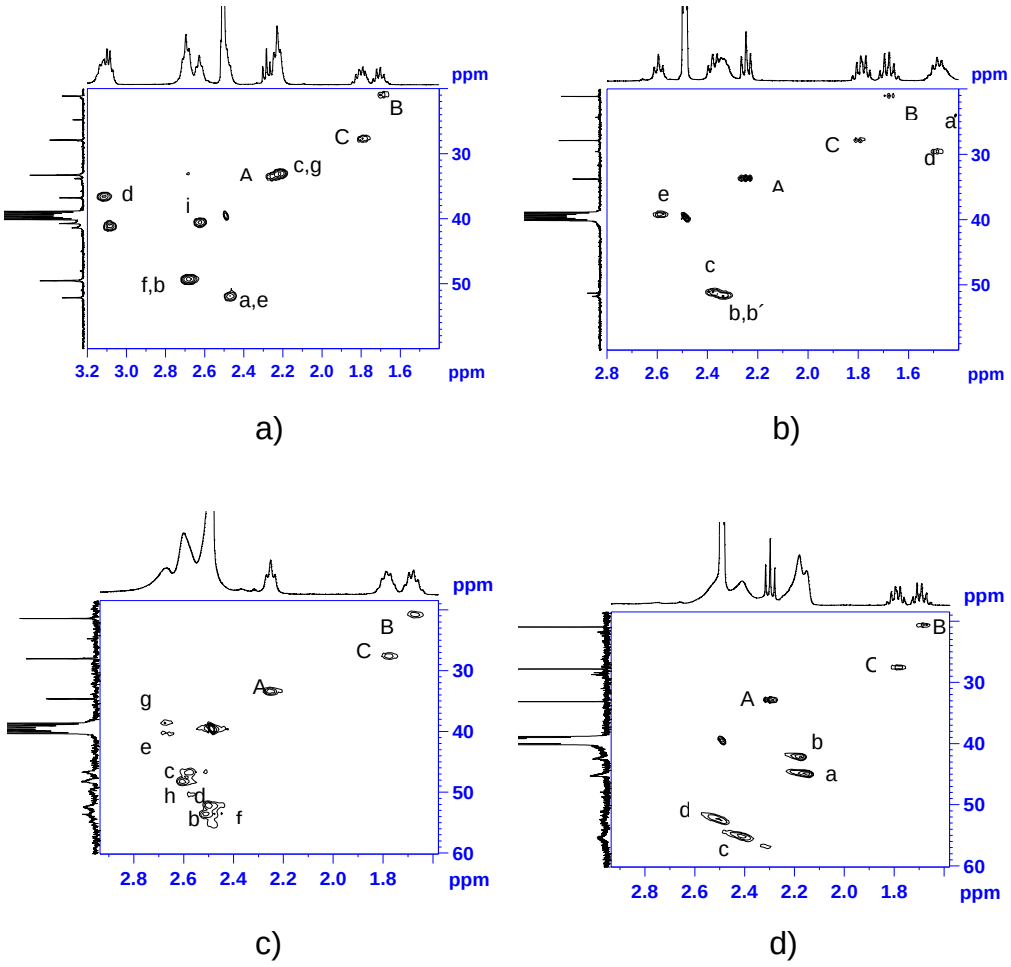

Figure S2. 2-D correlated ^{1}H-^{13}C HSQC experiments done in the interval from 1 to 3 ppm of the complexes. a) PAMAM-CAzPA, b) PPI-CAzPA, c) PEI-CAzPA, d) PEI(Me)-CAzPA.

2. Supporting information tables

Table S1. Main IR data (cm^{-1}, KBr) and UV-vis (nm, $CHCl_3$) for 5-(4-cyanophenylazophenyloxy)pentanoic acid and ionic complexes

Compound	OC-OH	NH amide	NH_3^+	CN	CO acid	CO amide	COO^-	-N=N-
CAzPA	3224 libre			2238	1739			1496
PAMAM)$_{16}$-CAzPA		3280	2935	2224		1645	1408	1462
PPI)$_{16}$-CAzPA			2946	2224			1403	1499
PEI-CAzPA			2942	2221			1403	1406
PEIMe-CAzPA			2946	2224	1708		1413	1499

Table S2. ^{1}H NMR data for the 5-(4-cyanoazobenzenoxy)pentanoic acid, dendritic polymers and their complexes: PAMAM-CAzPA, PPI-CAzPA, PEI-CAzPA, PEI(Me)-CAzPA.

Compound	COOH	$C\underline{H}_2COO$	$C\underline{H}_2CH_2COO$	$N\underline{H}CO$	$-C\underline{H}_2NH_3^+$ $-C\underline{H}_2NH_2$	$-C\underline{H}_2CH_2NH_3^+$ $-C\underline{H}_2CH_2NH_2$
CAzPA	11.80	2.30	1.67			
PAMAM-NH_2				7.74	2.59	3.07
PAMAM-CAzPA		2.27	1.71	7.76, 7.67	2.61	3.09
PPI-NH_2					2.55	1.44
PPI-CAzPA		2.25	1.69		2.60	1.49
PEI-NH_2					2.57/2.59	2.41/2.51
PEI-CAzPA		2.25	1.69		2.67/2.67	2.48/2.58
PEIMe[a]					2.4-2.6	2.4-2.6
PEIMe-CAzPA[b]		2.29	1.69		2.41-2.31	2.5

a) PEIMe: $N(C\underline{H}_3)_2$ 2.22, $N\text{-}C\underline{H}_3$ 2.25. b) PEIMe-CAzPA: $N(C\underline{H}_3)_2$ 2.15, $N\text{-}C\underline{H}_3$ 2.18.

Table S3. ^{13}C NMR data for the 5-(4-cyanoazobenzenoxy)pentanoic acid, dendritic polymers and their complexes: PAMAM-CAzPA, PPI-CAzPA, PEI-CAzPA, PEI(Me)-CAzPA.

Compound	<u>C</u>OOH/ <u>C</u>OO$^-$	<u>C</u>H$_2$COO	<u>C</u>H$_2$CH$_2$COO	NH<u>C</u>O	<u>C</u>H$_2$ NH$_3^+$ CH$_2$<u>N</u>H$_2$	<u>C</u>H$_2$CH$_2$NH$_3^+$ CH$_2$<u>C</u>H$_2$NH$_2$
CAzPA	173.8	33.1	20.9			
PAMAM-NH$_2$				171.8-171.6	41.2	42.1
PAMAM-CAzPA	175.1	34.1	21.1	171.3-171.0	40.7	41.4
PPI-NH$_2$					39.9	30.9
PPI-CAzPA	174.1	33.8	21.1		39.1	29.6
PEI-NH$_2$					39.7/41.4	57.9/52.4
PEI-CAzPA	175.0	34.7	21.1		35.4/40.2	55.3/50.2
PEIMe[a]					54.2-57.0	51.6-53.1
PEIMe-CAzPA[b]		33.1	21.0		54.0-57.0	51.5-53.6

a) PEIMe: N(<u>C</u>H$_3$)$_2$ 44.9, N-<u>C</u>H$_3$ 42.2 b) PEIMe-CAzPA: N(<u>C</u>H$_3$)$_2$ 45.3, N-<u>C</u>H$_3$ 42.5.