Electronic Supplementary Material (ESI) for Organic & Biomolecular Chemistry.
This journal is © The Royal Society of Chemistry 2017

Supporting Information

The Effect of Comb Architecture on Complex Coacervation

Brandon M. Johnston,[1] Cameron W. Johnston,[1] Rachel A. Letteri,[2] Tyler K. Lytle,[3] Charles E. Sing,[4] Todd Emrick,[2] Sarah L. Perry[1]*

[1]Department of Chemical Engineering, University of Massachusetts Amherst, Amherst, MA 01003, USA
[2]Department of Polymer Science & Engineering, University of Massachusetts Amherst, Amherst, MA 01003, USA
[3]Department of Chemistry, University of Illinois at Urbana-Champaign, Urbana, IL 61801
[4]Department of Chemical & Biomolecular Engineering, University of Illinois at Urbana-Champaign, Urbana, IL 61801

*Correspondence Email: perrys@engin.umass.edu

Table S1. Polymerization data, and monomer:catalyst ratios used to synthesize ***L*K5SB-X** (X = mol% SB)

Polymer	Target mol% SB	[M]:[I]	[M] (M)	Conversion (%)	Incorporated mol% SB	$M_{n,theo}$[a] (g/mol)	M_n[b] (g/mol)	Đ[b]	Yield[c] (%)
*L*K5	0	50	0.07	62	0	31000	33400	1.30	60
*L*K5SB-26	20	62.5	0.09	73	26	38600	42900	1.35	48
*L*K5SB-44	40	83.3	0.12	77	44	50500	44500	1.45	47
*L*K5SB-65	60	125	0.5	88	65	68500	43900	1.52	24
*L*K5SB-88	80	250	0.5	N/A	88	126500	126000	1.77	22

[a]$M_{n,theo}$ = ([monomer]:[initiator])*conversion*(molecular weight per repeat unit), assuming 100% conversion for *L*KSB-88
[b]Estimated relative to PMMA standards by SEC eluting in TFE with 0.02 M sodium trifluoroacetate
[c]Yield = (conversion)(mixture of monomer and polymer used in deprotection, g)(average MW per repeat unit deprotected polymers, g/mol)/(average MW per repeat unit Boc-protected polymers, g/mol)

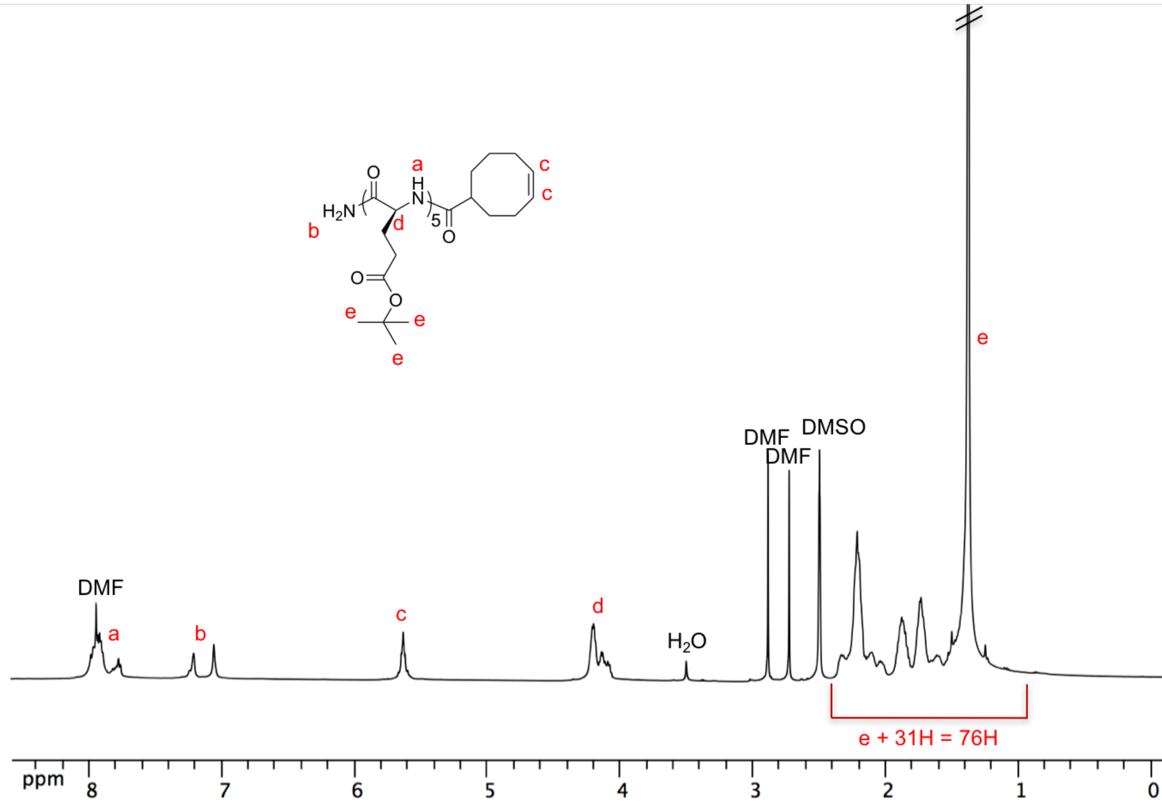

Figure S1. ^{1}H NMR spectrum (500 MHz) of ***L*E5-COE** in DMSO-d6

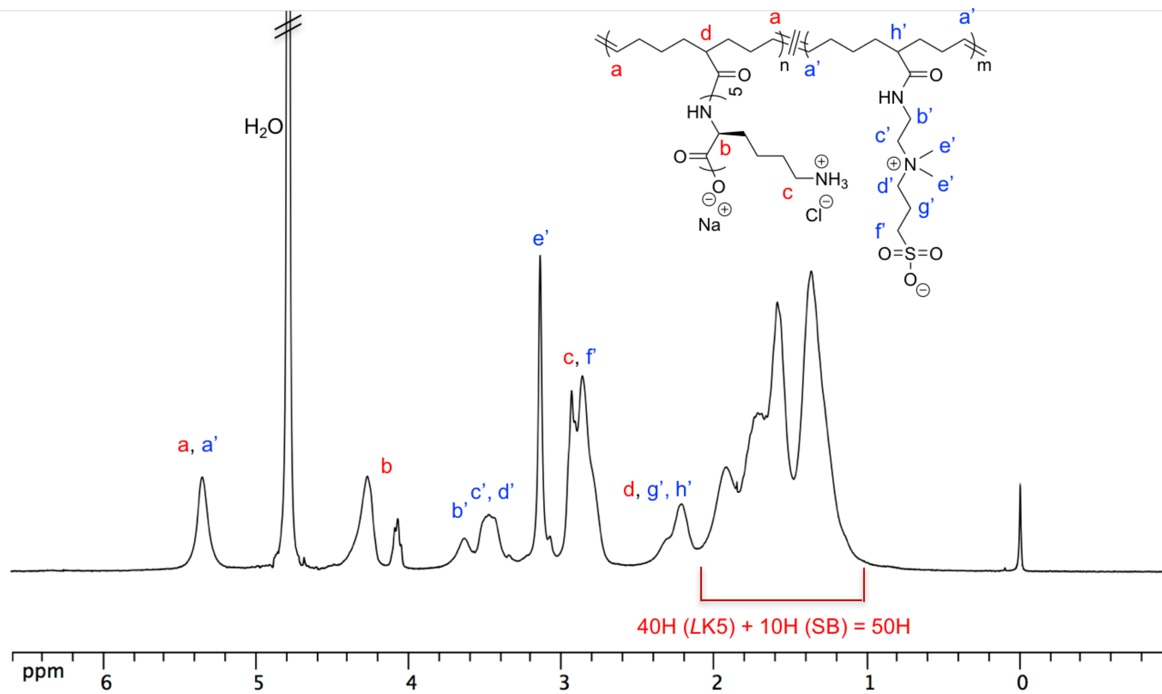

Figure S2. ^{1}H NMR spectrum (300 MHz) of ***L*K5SB-44** in D_2O

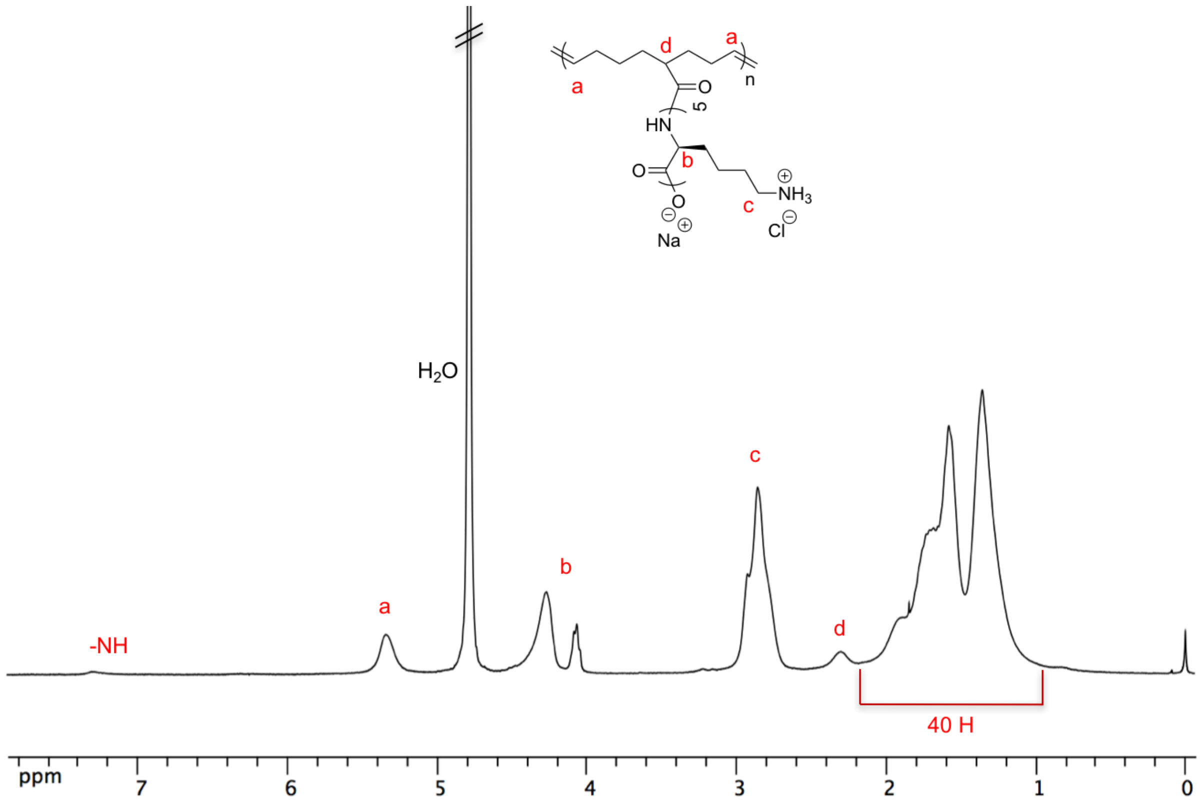

Figure S3. ^{1}H NMR spectrum (300 MHz) of ***L*****K5** in D_2O

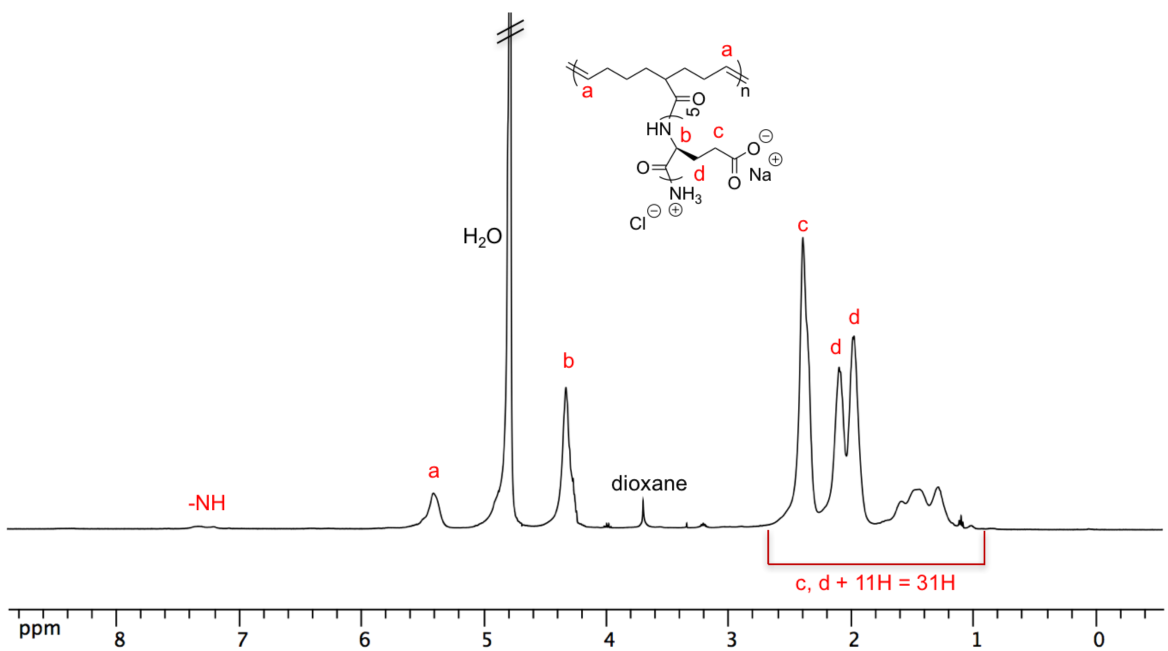

Figure S4. ^{1}H NMR spectrum (500 MHz) of ***L*****E5** in D_2O

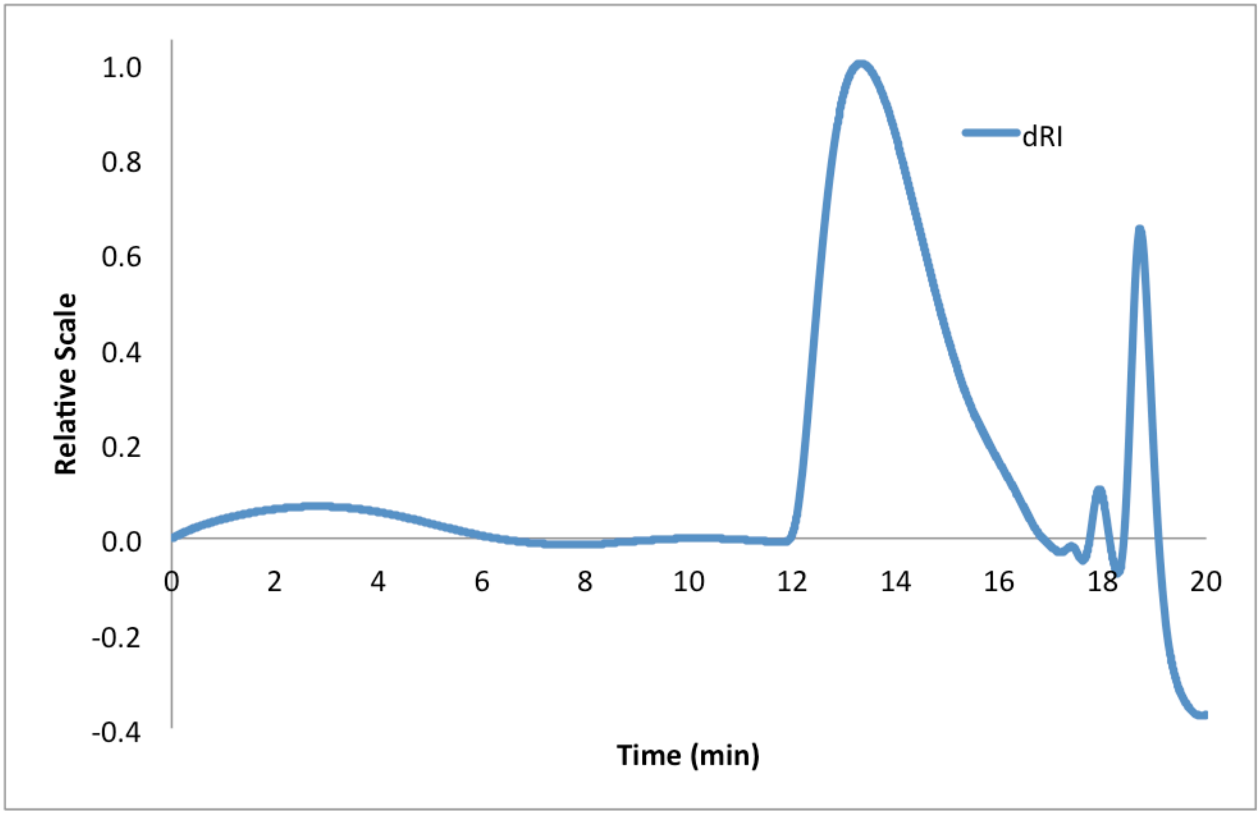

Figure S5. SEC-MALS trace of ***LE*5** in aqueous solution with 5% ammonium phosphate and 3% acetonitrile

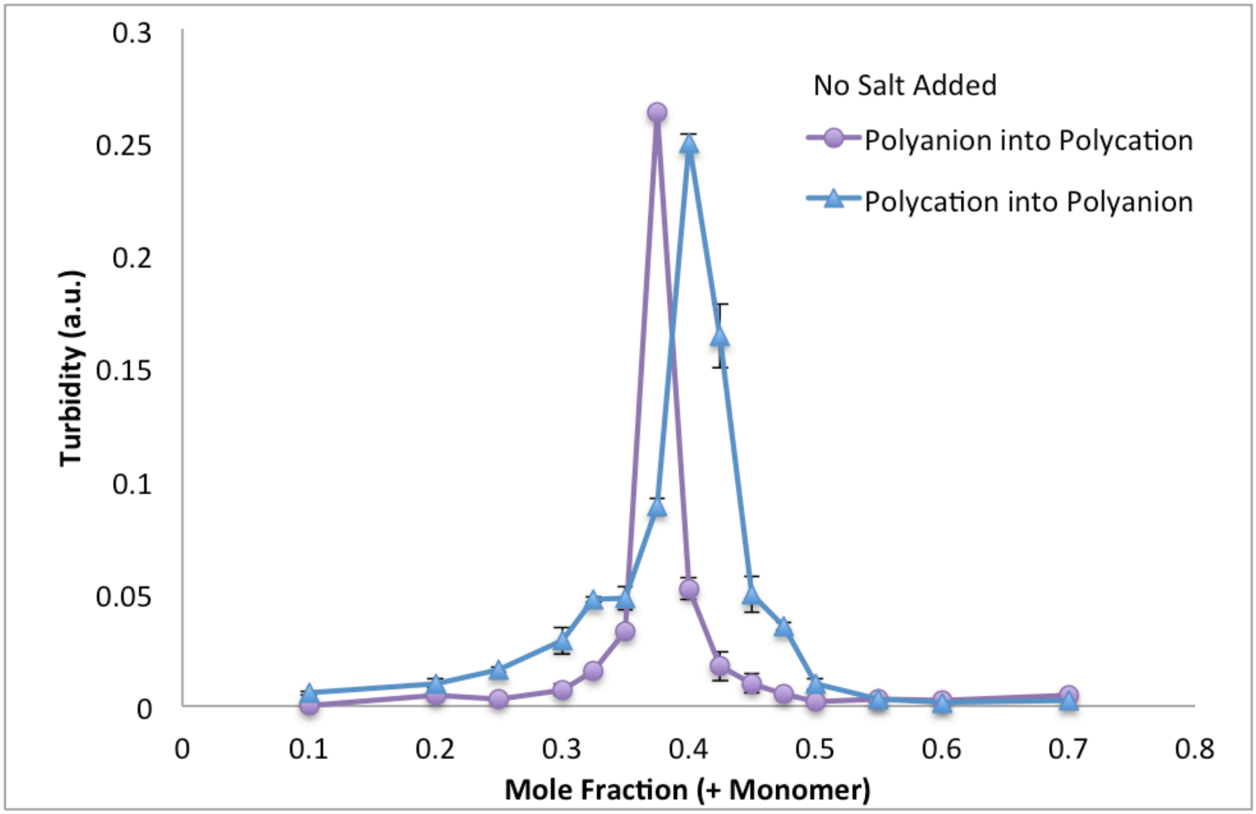

Figure S6. Plot of turbidity as a function of the mole fraction of cationic monomer comparing orders of addition during complex formation (polycation into polyanion or polyanion into polycation)