SUPPORTING INFORMATION

The basic centers in PA **13** (ZH_2^{+-}) (0.31-0.53 mmol repeating unit) in water (200 cm^3) were titrated by stepwise addition of 0.05–0.15 mL of ≈ 0.1 M NaOH or HCl (Table S1). Log K_is were calculated using the Henderson–Hasselbalch equation (eqn (2) in Scheme 3).

Table S1 Protonation of polymer **13** ($ZH_2^{\pm}$) at 23 °C.

run	$ZH_2^{\pm}$ (mmol)	C_T [a] (mol dm^{-3})	α–range	pH–range	Points[b]	Log K_1^{o} [c]	n_1 [c]	R^2, [d]
1	0.3080 ($ZH_2^{\pm}$)	+0.1222	0.13-0.58	3.05-2.57	22	2.65	0.47	0.9927
2	0.4400 ($ZH_2^{\pm}$)	+0.1222	0.064-0.65	3.15-2.51	25	2.63	0.45	0.9895
3	0.5280 ($ZH_2^{\pm}$)	+0.1222	0.087-0.65	3.13-2.47	26	2.59	0.52	0.9939
Average						2.62 (3)	0.48 (4)	
Log K_3 [e] = 2.62 - 0.52 log [(1-α)/α] For the reaction: $ZH_2^{\pm} + H^+ \overset{K_3}{\rightleftharpoons} ZH_3^+$								
1	0.3080 ($ZH_2^{\pm}$)	–0.09594	0.82–0.13	4.08–7.22	13	5.63	2.16	0.9907
2	0.4400 ($ZH_2^{\pm}$)	–0.09594	0.82–0.13	4.01–7.45	18	5.55	2.21	0.9978
3	0.5280 ($ZH_2^{\pm}$)	–0.09594	0.87–0.13	3.87–7.45	22	5.58	2.20	0.9971
Average						5.59 (4)	2.19 (3)	
Log K_2 [e] = 5.59 + 1.19 log [(1-α)/α] For the reaction: $ZH^{\pm -} + H^+ \overset{K_2}{\rightleftharpoons} ZH_2^{\pm}$								
1	0.3080 ($ZH_2^{\pm}$)	–0.09594	0.89–0.27	9.10–10.65	11	10.09	1.13	0.9883
2	0.4400 ($ZH_2^{\pm}$)	–0.09594	0.87–0.36	9.07–10.33	12	10.08	1.14	0.9924
3	0.5280 ($ZH_2^{\pm}$)	–0.09594	0.90–0.27	9.05–10.63	08	10.19	1.18	0.9945
Average						10.12 (6)	1.15 (3)	
Log K_1 [e] = 10.12 + 0.15 log [(1-α)/α] For the reaction: $Z^{=} + H^+ \overset{K_1}{\rightleftharpoons} ZH^{\pm -}$								

[a] Titrations with NaOH and HCl are described by (-)ve and (+)ve values, respectively; [b] Data points used; [c] Parentheses include the standard deviations in the last digit; [d] R = Correlation coefficient; [e] $\log K_i = \log K_i^{o} + (n_i - 1) \log [(1 - \alpha)/\alpha]$;