Corrigenda

This list of corrigenda accompanies the printed version of the thesis

"Strength, structure and stability of polyelectrolyte complex coacervates"

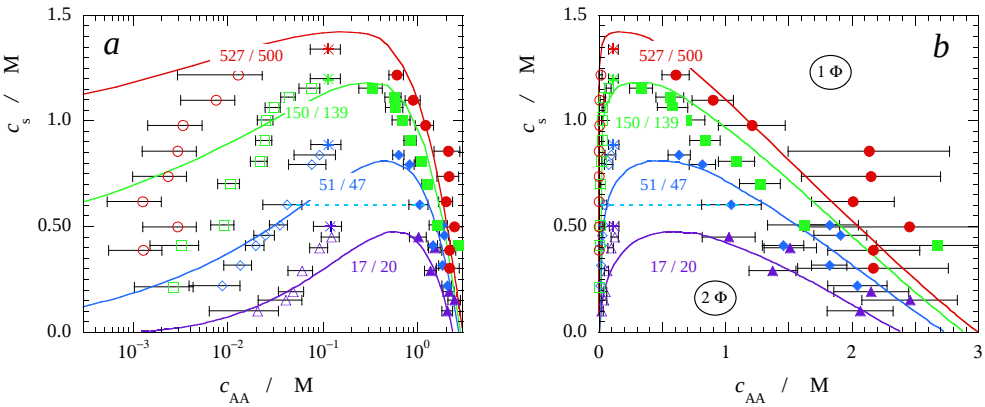
by Evan Spruijt,
defended on 12 oktober 2012 in Wageningen.

This list was last updated on 9 May 2013.

- p. 6. Change the last sentence on this page to the following:

  These pectins are *partly negatively* charged and form complex-coacervate-like aggregates with the *positive* charges on the casein micelles *at low enough pH values*, thereby preventing their flocculation at low pH.

- p. 63. Change Figure 3.7 to the following:



NB. The labels that indicate the one-phase and two-phase regions in (b) have been exchanged.

- p. 145. Change Table 7.1 to the following:

Table 7.1: Specifications of the PDMAEMA and PAA used in this study on the structure of polyelectrolyte complex coacervates. N is the number averaged degree of polymerization, calculated from M_n, ρ is the bulk density of the polymers and ρ_N is the coherent neutron scattering length density. All polymers were purchased from Polymer Source. PAA refers to the acidic form (H or D, respectively) of poly(acrylic acid) and PDMAEMA refers to the free amine form of poly(N,N-dimethylaminoethyl methacrylate). Note that the scattering length density of the respective salts (K and Cl) of both polymers will differ from the values above.

Polymer	M_n (kg/mol)	M_w (kg/mol)	M_w/M_n	N	ρ (kg/ m^3)	ρ_N (10^{-6} Å^{-2})
h-PDMAEMA$_{150}$	23.5	24.4	1.04	150	0.934[a]	0.80[10]
h-PDMAEMA$_{527}$	82.7	90.1	1.09	527		
d-PDMAEMA$_{148}$	25.5	26.5	1.04	148	1.023[b,c]	6.23
d-PDMAEMA$_{320}$	55.0	137.5	2.5	320		
h-PAA$_{139}$	10.0	11.5	1.15	139	1.051[12]	1.46[13]
h-PAA$_{500}$	36.0	39.6	1.10	500		
d-PAA$_{107}$	8.0	38.4	4.8	107	1.095[b]	5.05[14]

Notes

[a] Assumed to be equal to the density of the liquid monomer.

[b] Assuming equal molecular volumes v_m, compared to hydrogenated polymers and correcting for the increase in mass due to deuterium.

[c] If the density of d-PDMAEMA is taken the same as the density of h-PDMAEMA, ρ_N would be 5.7.[11]

NB. The neutron scattering length densities for d-PAA (acidic H) is 4.20 ($\rho = 1.095$ kg/ m^3), d-PAA (K-salt) is in between 4.26 ($\rho = 1.45$ kg/ m^3, from the assumption that the molecular volume of d-PAAK is the combined volume of a d-PAA and a K^+ ion: $v_m = 1.14\times10^{-28}+1.47\times10^{-29}$ m^3) and 3.22 ($\rho = 1.095$ kg/ m^3), all in the same units as used in Table 7.1.

- p. 148. Change Equation 7.1 and the sentence following it on p. 149 to the following:

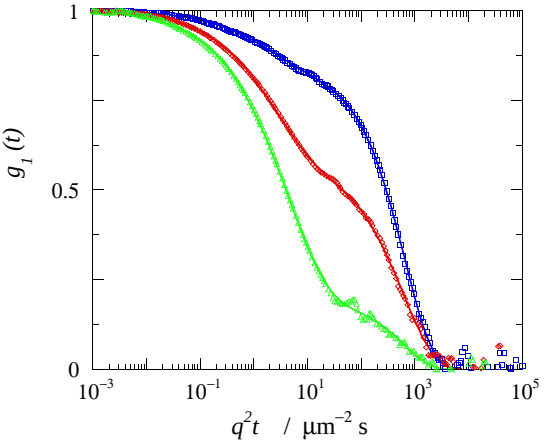
$$P(q) = \frac{1}{{N_\mathrm{b}}^2} \sum_{n=1}^{N_\mathrm{b}} \sum_{m=1}^{N_\mathrm{b}} \langle \exp\left(iq(\vec{r_n} - \vec{r_m})\right) \rangle = \alpha x^{-\alpha} \left[\gamma\left(\alpha,\, x\right) - x^{\alpha/2}\, \gamma\left(\alpha/2,\, x\right) \right]$$

$$\text{with} \quad \alpha = 1/\nu, \quad x = (2\nu+1)(2\nu+2) q^2 b^2 {N_\mathrm{b}}^{2\nu}/6$$

$$\text{and} \quad \gamma(s,x) = \int_0^x t^{s-1} e^{-t}\, \mathrm{d}t \qquad (7.1)$$

where b is the Kuhn length, N_b is the number of Kuhn monomers and $\gamma(s,x)$ is the lower incomplete Gamma function, as defined above ($\gamma(s,\infty) = \Gamma(s)$).

- p. 156. Change Figure 7.7 to the following:



NB. The x-axis values have been multiplied by a factor 10^{-2}.

- p. 178. Change Equation 9.1, 9.2 and 9.3 to the following:

$$G(t) = \sum_{i=1}^{M} G_i \, e^{-t/\tau_i} \ , \tag{9.1}$$

$$G'(\omega) = \sum_{i=1}^{M} \frac{G_i \, \omega^2 \tau_i^2}{1 + \omega^2 \tau_i^2} \ , \tag{9.2}$$

$$G''(\omega) = \sum_{i=1}^{M} \frac{G_i \, \omega \tau_i}{1 + \omega^2 \tau_i^2} \ . \tag{9.3}$$

Change Equation 9.4 to the following:

$$H(\tau) = \sum_{i=1}^{M} G_i \, \delta \left(1 - \frac{t}{\tau_i} \right) \tag{9.4}$$

Add the following line after " [...] *denotes the Dirac delta function.*":

The advantage of using this combination of relaxation modulus and frequency sweep data is that they can be directly converted into relaxation spectra.