Electronic supplementary information for

Salt-regulated attraction and repulsion of spherical polyelectrolyte brushes towards polyelectrolyte multilayers

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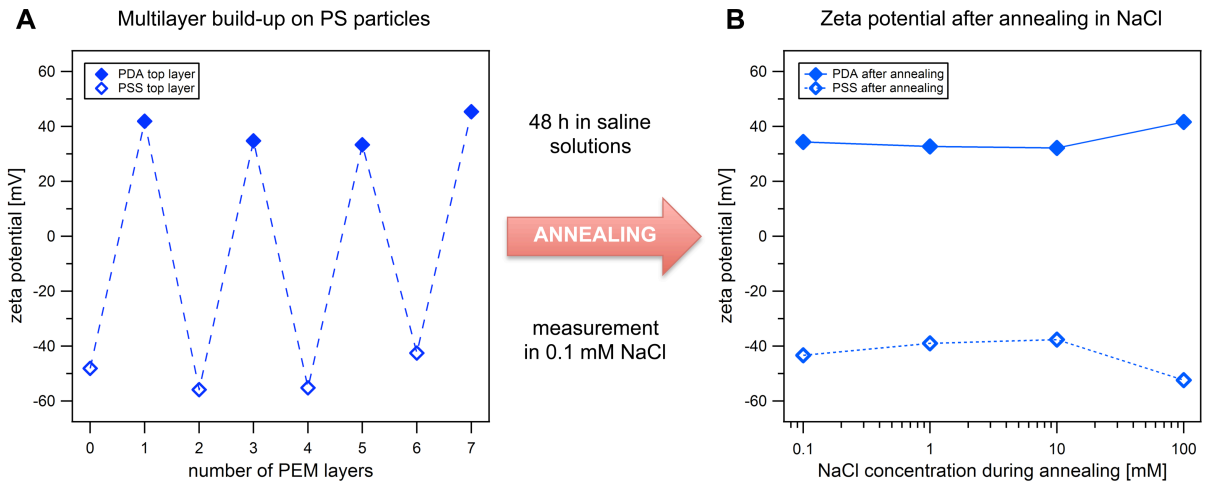
Multilayer stability in saline solution

To ensure the stability of the PSS/PDA multilayer system under our usual deposition conditions we conducted an annealing experiment. Polystyrene particles were covered with $(PDA/PSS)_3$ or $(PDA/PSS)_{3.5}$ multilayers. The coated particles exhibited a zeta potential of -43 mV and 45 mV respectively. After 48 h of annealing in saline solutions with ionic strengths up to 100 mM the zeta potentials of the particles were measured again. All measurements were conducted in 0.1 mM NaCl solution. As no significant changes of the zeta potentials occurred, we assume stable surface potentials for our flat multilayer coated substrates.



Zeta potential of PEM coated particles before (A) and after (B) annealing in saline solutions. No significant decay was visible after 48 h of annealing at ionic strengths ranging from 0.1 mM to 100 mM indicating a high stability of the multilayers. The slightly increased absolute values at the highest ionic strength are probably caused by a smoothening of the particle surface.