Supplementary Information

Colloid-probe AFM studies of the surface functionality and adsorbed proteins on binary colloidal crystal layers

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**Fig. S1** Normalized force ($F/2\pi R_f$) versus apparent separation (d) approach curves for the interaction between a PS colloid probe and a 2 µm silica/200 nm silica binary patterned surface in 1 mM NaCl (pH=7.4). (a) 2 µm silica (b) 200 nm silica. The red solid line represents the theoretical fit according to DLVO theory and numerical fitting of the Poisson-Boltzmann equation using $\varphi_{1\mu m\text{-probe}}$ = -28.9 mV, $\varphi_{2\mu m\text{-silica}}$ = -10.5 mV and $\varphi_{200nm\text{-silica}}$ = -11.2 mV.

**Fig. S2** Normalized force ($F/2\pi R_f$) versus apparent separation (d) approach curves for the interaction between a PS colloid probe and a binary protein patterned surface comprising LZM-coated 2 µm silica and BSA-coated 200 nm silica at 1 mM NaCl (pH=7.4). Force curves obtained for (a) 2 µm silica (LZM) (b) 200 nm silica (BSA).