

Supporting Information

Surface-Grafted Zwitterionic Polymers as Platforms for Functional Supported Phospholipid Membranes

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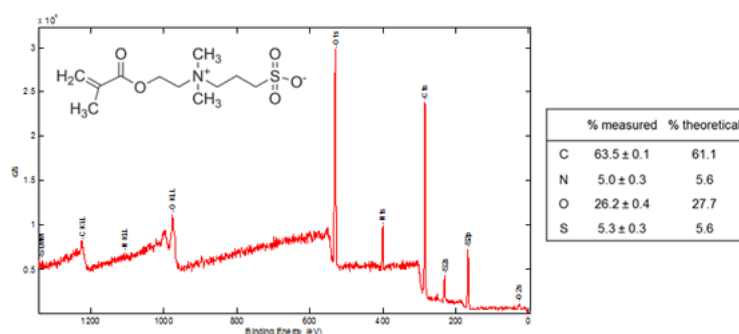


Fig. S1 XPS survey spectrum of poly(SBMA) brush grafted from an initiator-coupled glass surface using ATRP for 1 h ($[SBMA] = 0.5$ M, $[Cu^I]/[Cu^{II}] = 8$, methanol/water = 4:1 v/v). Analysis of the atomic composition of the polymer layer from high-resolution element scans is summarized in the table on the left. A good agreement was found between the experimentally determined atomic compositions and the theoretical values predicted from the structure of the sulfobetaine methacrylate unit.

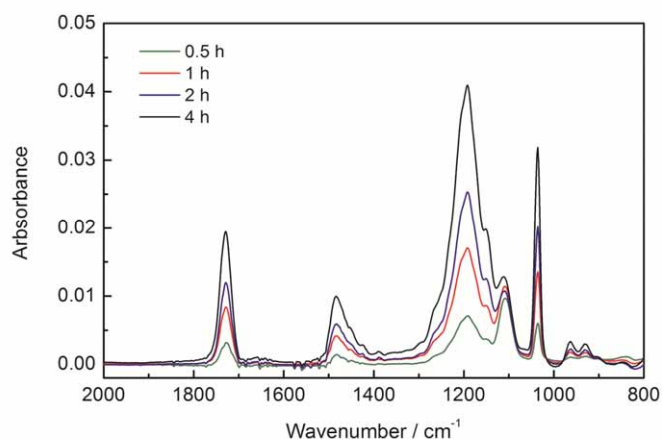


Fig. S2 Fingerprint region of FTIR spectra for poly(SBMA) brushes grafted from silicon surfaces using ATRP with different polymerization times ($[\text{SBMA}] = 0.5 \text{ M}$, methanol/water 4:1 v/v, $[\text{Cu}^{\text{I}}]/[\text{Cu}^{\text{II}}] = 8$). Spectra show the characteristic absorption bands at around 1730 cm^{-1} (C=O stretching), 1485 cm^{-1} (C=N stretching), 1193 cm^{-1} (S=O stretching), and 1035 cm^{-1} (SO_3^- vibration). Assignment of the absorption bands based on the *NIST Chemistry WebBook* (Linstrom P.J., Mallard W.G., eds., NIST Standard Reference Database Number 69, National Institute of Standards and Technology, Gaithersburg, MD, USA).

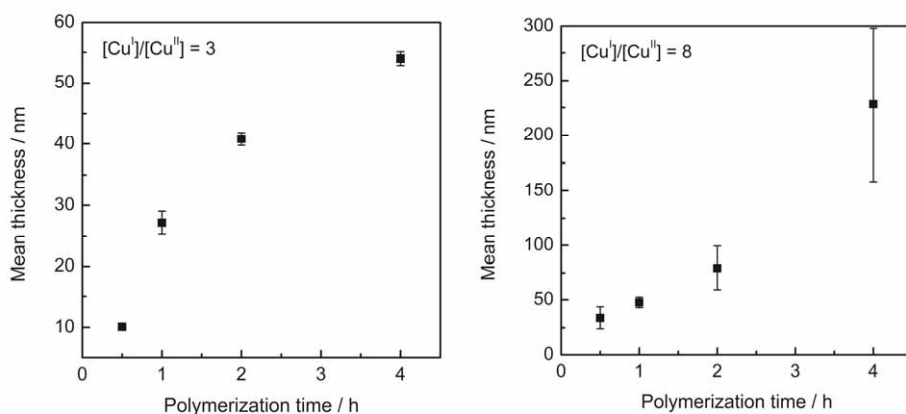


Fig. S3 Growth kinetics of poly(SBMA) layers grafted from silicon surface using ATRP ($[\text{SBMA}] = 0.5 \text{ M}$, methanol/water 4:1 v/v) with different $[\text{Cu}^{\text{I}}]/[\text{Cu}^{\text{II}}]$ ratios as measured by ellipsometry in air. Error bars are given by the standard deviation of an array of 25 measurements across the polymer brush surface (sampled area $5 \times 5 \text{ mm}^2$).

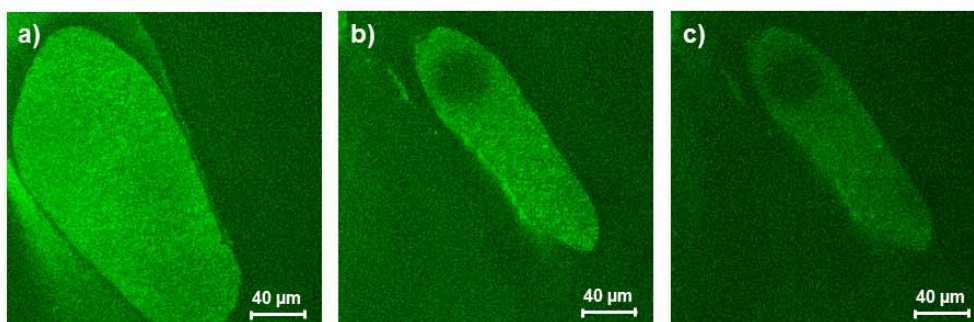


Fig. S4 Fluorescence images of a DOPC membrane (lipid 3 mg/mL, NBD-PC 2 mol %) assembled on a piranha-cleaned glass surface (a) and over the course of a FRAP experiment at 4 min (b) and 50 min (c) after photobleaching (bleached spot diameter 40 μm). Phosphate buffered solution: 50 mM phosphate, 150 mM KCl, pH 7.4.