

Fig. S2. ^1H NMR spectra of P(AAm-co-AN) in D_2O at 70°C . The inset shows the signal for NH_2 protons measured in $\text{DMSO}-d_6$ at 25°C .

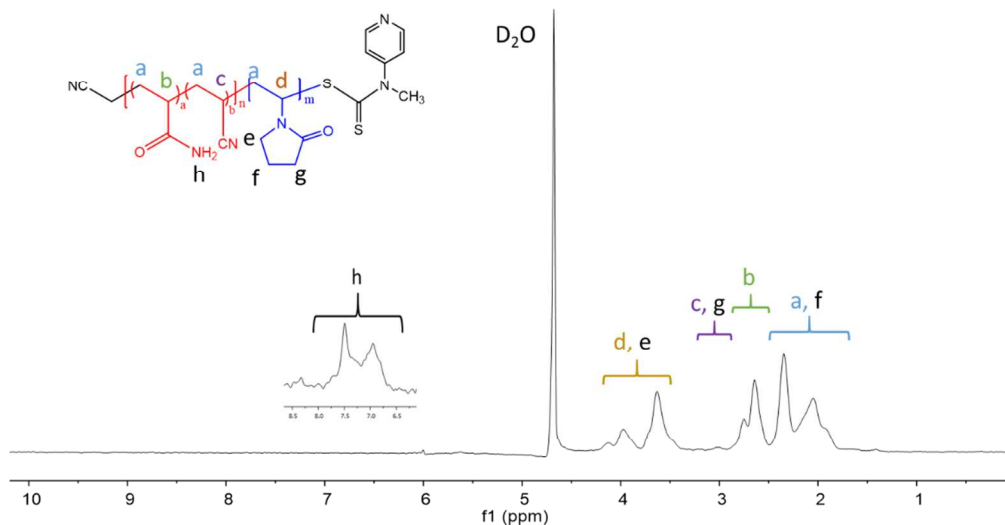


Fig. S3. ^1H NMR spectra of P(AAm-co-AN)-b-PVP in D_2O at 70°C . The inset shows the signal for NH_2 protons measured in $\text{DMSO}-d_6$ at 25°C .

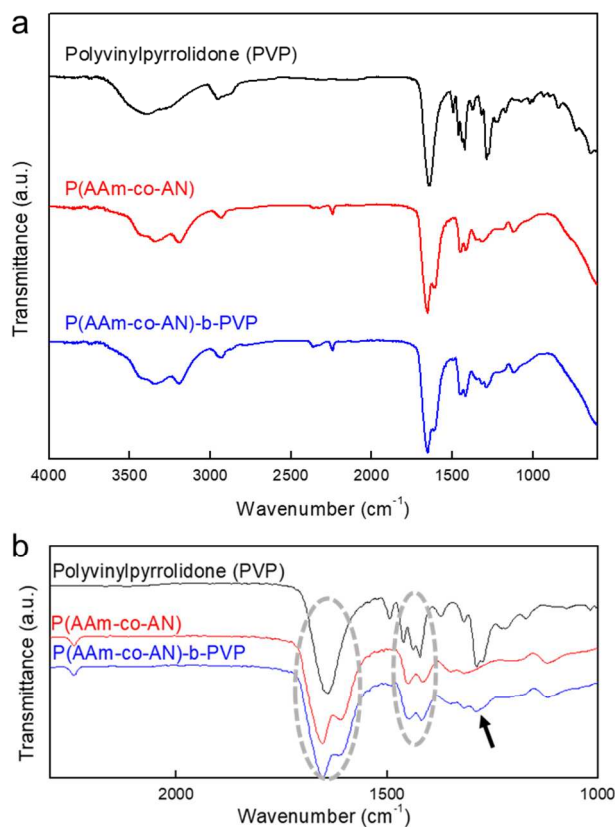


Fig. S4. (a) FTIR spectra of PVP, P(AAm-co-AN) and P(AAm-co-AN)-b-PVP; (b) illustration of a spectral overlap in the $1620\text{--}1690$ and $1400\text{--}1480\text{ cm}^{-1}$ spectral regions (circled), and

emergence in the spectrum of P(AAm-*co*-AN)-*b*-PVP of a band at 1291cm^{-1} (indicated by arrow) which is associated with C-N stretching vibrations and is indicative of incorporation of PVP within the copolymer.

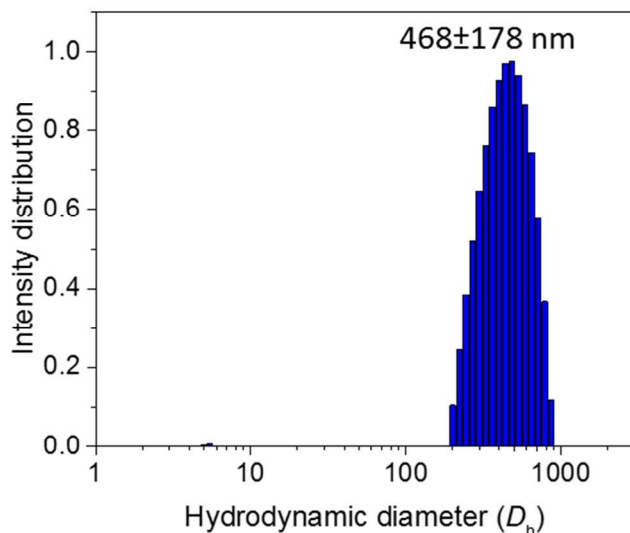


Fig. S5. Hydrodynamic diameter in a 2 mg/ml solution of P(AAm-*co*-AN) in PBS (pH 7.0) after 5-min incubation at 22 °C. Prior to measurements, the solution was preheated at 50 °C.

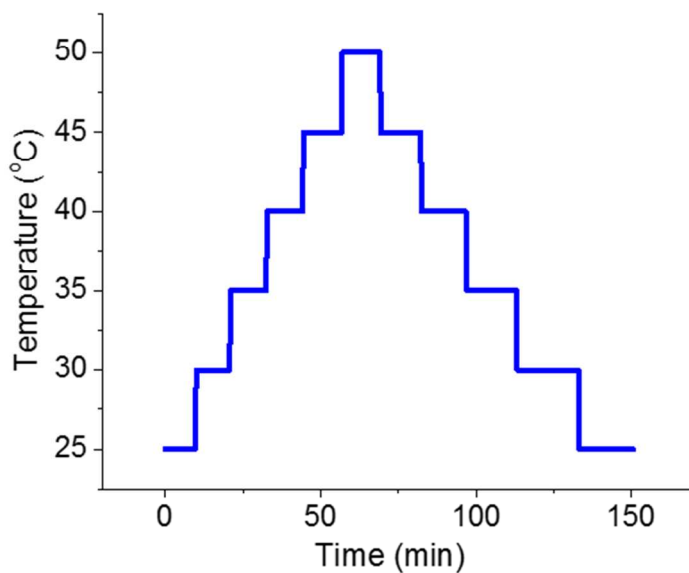


Fig. S6. The stepwise heating/cooling profile used for ellipsometry measurements to determine the equilibrium thicknesses of swollen BCM/TA films.

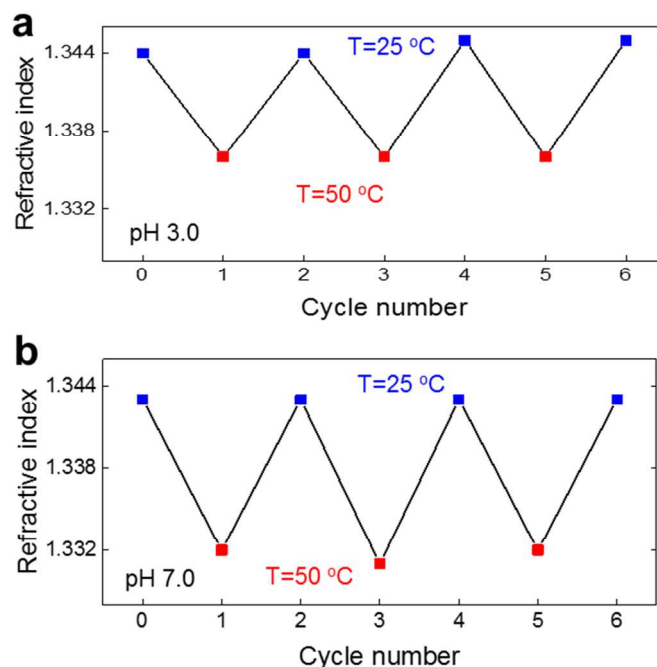


Fig. S7. Temperature-induced variations in refractive indices of 2.5-bl BCM/TA films at pH 3.0 (a) and pH 7.0 (b) as measured by *in situ* spectroscopic ellipsometry during alternating exposure of the film to PBS solutions at 25 and 50 °C.

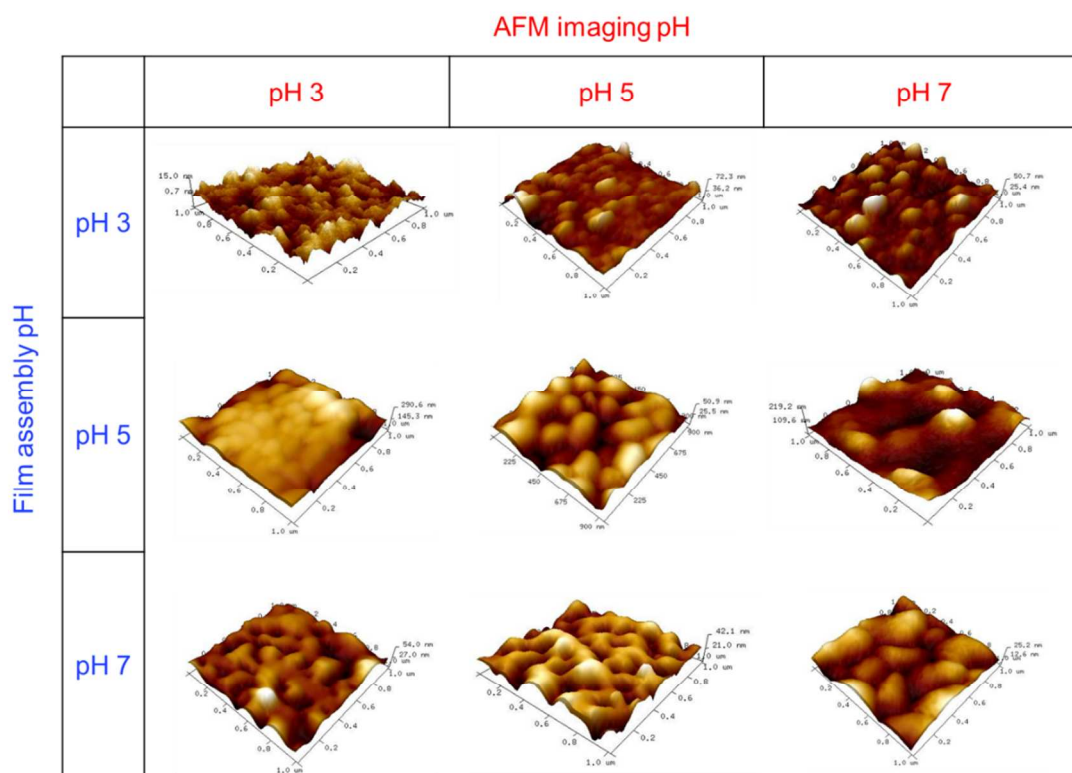


Fig. S8. AFM height images of 2.5-bl films deposited at different pH values (3, 5 and 7) when immersed in PBS of varied pH at 25 °C.

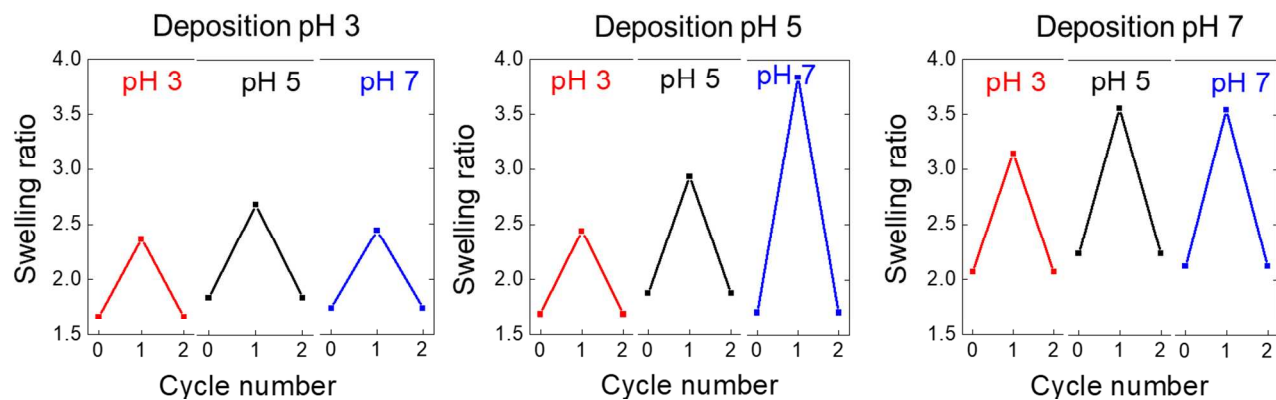


Fig. S9. *In situ* ellipsometry measurements of swelling of 2.5-bl films during one 25-50°C temperature cycle. The films were deposited at different pH values (3, 5 and 7) and immersed in PBS of varied acidity.