Electronic Supplementary Material (ESI) for Soft Matter.

Cross-linked polyelectrolyte microspheres: preparation and new insights into electro-surface properties

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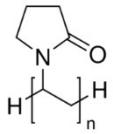
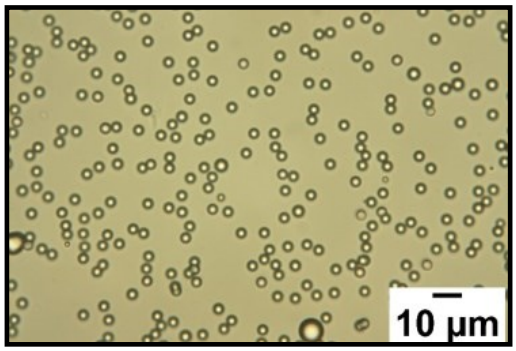
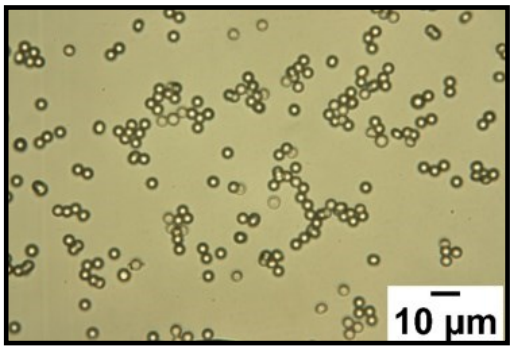


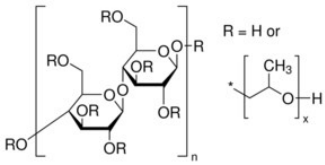
Polyvinylpyrrolidone (PVP). Mw ~29,000(Sigma Aldrich)

Before sulfonation. **$[SO_3^-]=0$ mol/m²**



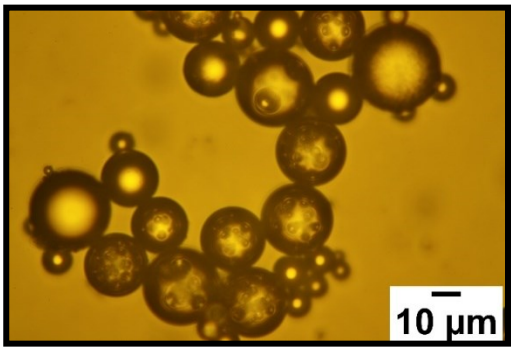
After sulfonation. **$[SO_3^-]=0.85*10^{-4}$ mol/m²**



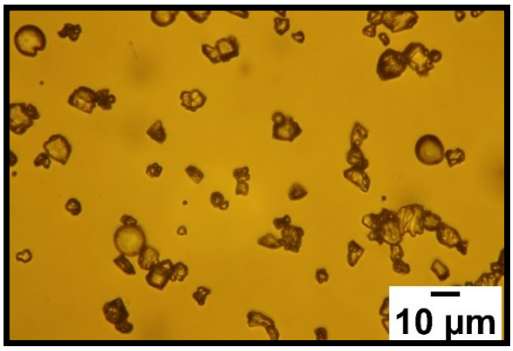


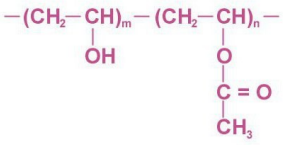
Hydroxypropyl cellulose. Mw ~100,000 (Acros Organics)

Before sulfonation. **$[SO_3^-]=0$ mol/m²**



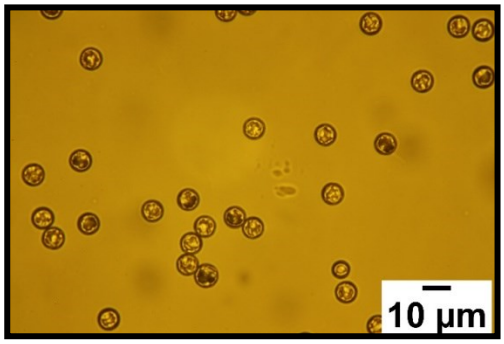
After sulfonation. **$[SO_3^-]=1.64*10^{-4}$ mol/m²**





PVA, Poly(vinyl alcohol). Mw ~12 0 000 (Sigma Aldrich)

Before sulfonation. **$[SO_3^-]=0$ mol/m²**



After sulfonation. $[-H_2C\text{-}CO\text{-}CH_2\text{-}]$+**$[SO_3^-]$**

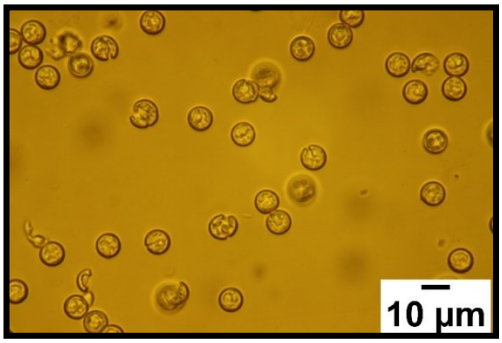


Fig. S1. Optical microscopy of PSt and sulfonated PSt-SO_3 microspheres.

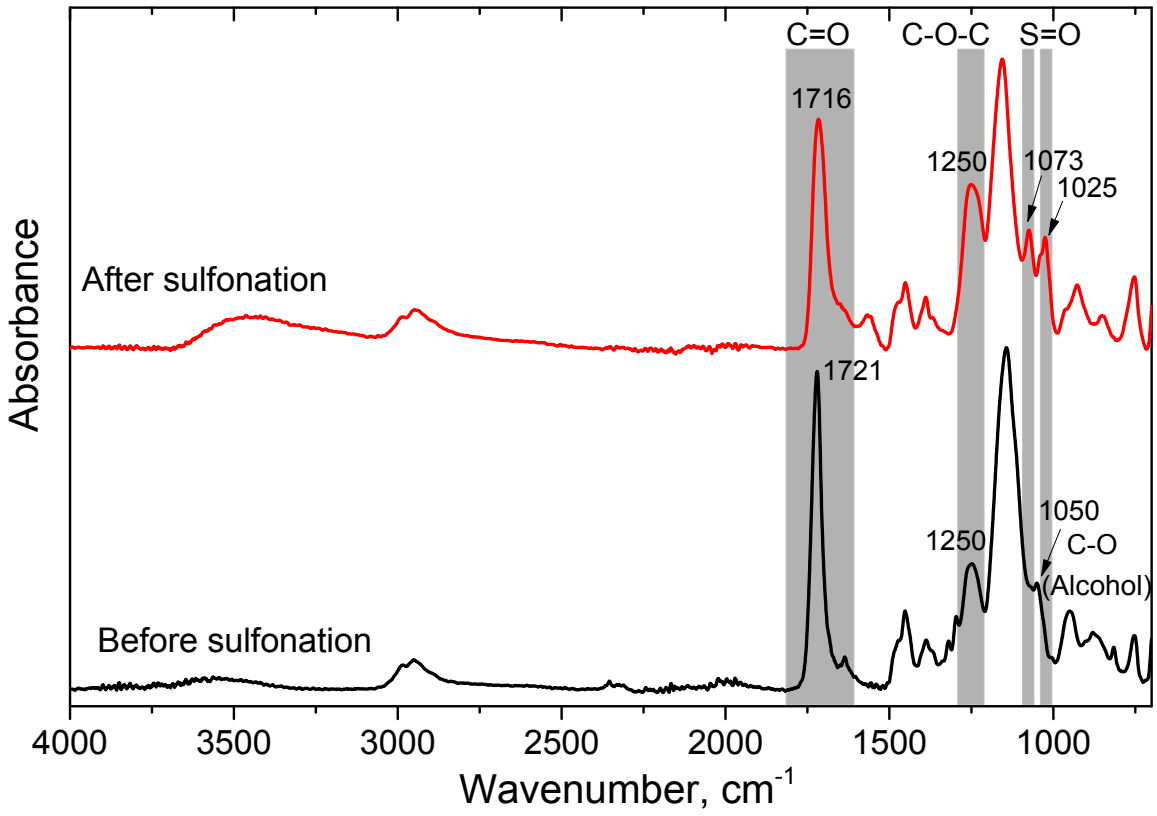


Fig. S3. FTIR-ATR spectra of polyelectrolytes microspheres with PVA in the surface layer.

The peak at 1025 cm^{-1} represents the symmetric stretching vibration of the SO3-groups which is significantly lower than that of the ketone groups.

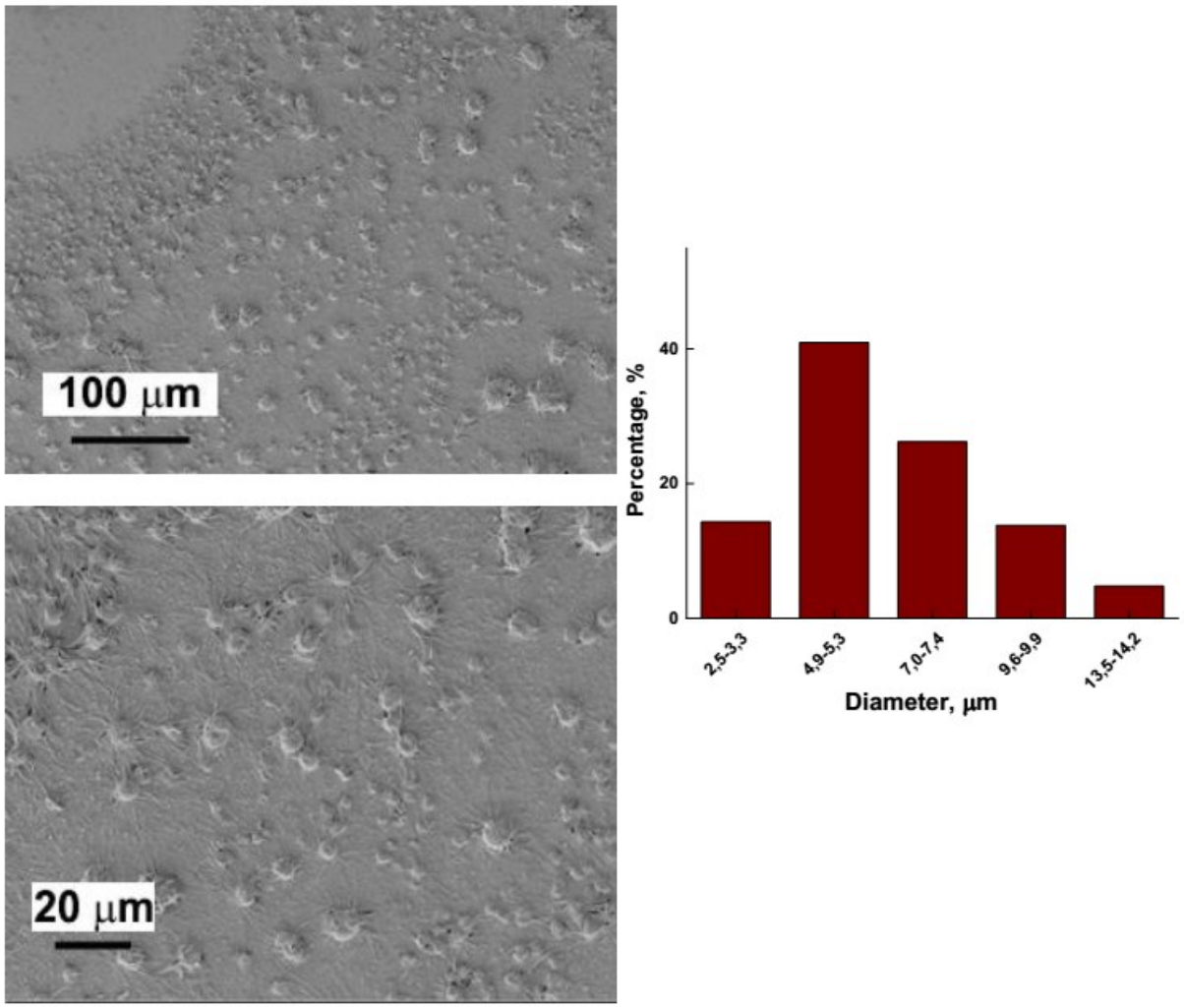


Fig. S3. SEM images of polyelectrolytes PNaSS6 microspheres and their respective particle size distribution. (C.V. 52%). C.V.= (Mean/ Standard Deviation)*100%.

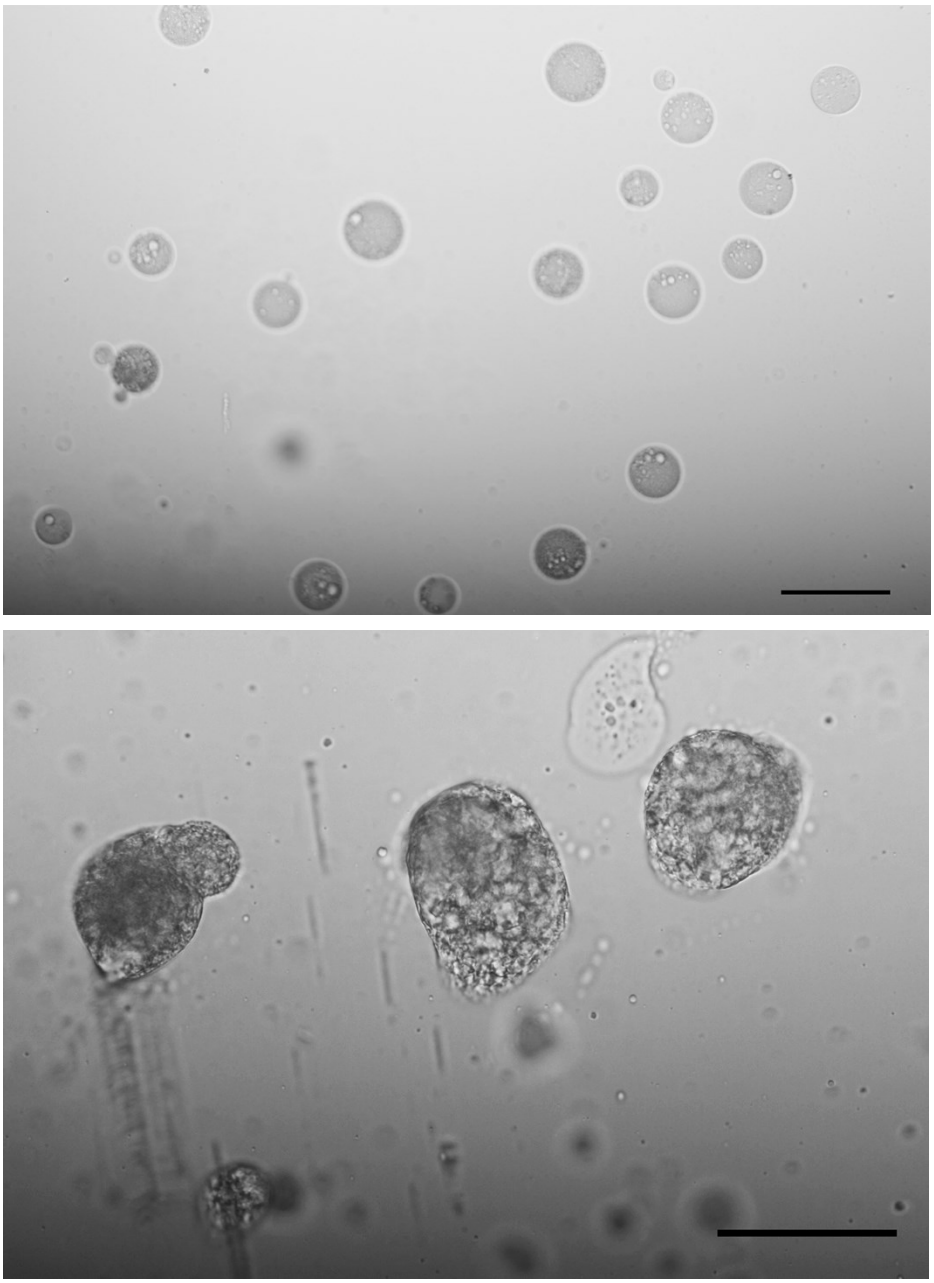


Fig. S4. Optical microscopy of polyelectrolyte PNaSS6 microspheres after removal of cyclohexane (scale bars 10 μm)