Supporting Information

Bespoke Cationic Nano-objects via RAFT Aqueous Dispersion Polymerisation


Figure S1. Aqueous gel permeation chromatograms recorded for a series of poly[2-(methacryloyloxy)ethyl] trimethylammonium chloride (PQDMA) macro-CTAs.
Figure S2. Transmission electron microscopy images obtained for PQDMA$_{26}$-PHPMA$_z$ (where $z = 200, 300$ and $400$) diblock copolymer spheres synthesised by RAFT aqueous dispersion polymerisation of HPMA at 10 % w/w solids. The scale bar shown applies to all three images.
Figure S3. DMF gel permeation chromatograms recorded for a series of PGMA$_{62}$−PHPMA$_{z}$ (where $z =$ 150, 250, 350 and 450) diblock copolymers synthesised at 20 % w/w solids. The corresponding PGMA$_{62}$ macro-CTA precursor is also shown as a reference.
Figure S4. Determination of the critical gelation concentration (CGT) and corresponding transmission electron microscopy images for ([1-n] PGMA<sub>62</sub> + [n] PQDMA<sub>95</sub>) – PHPMA<sub>200</sub> diblock copolymer nanoparticles (where n = 0.00, 0.05, 0.10, 0.15 or 0.20).
Figure S5. (A) Variation in gel strength ($G'$, $G''$) with applied frequency (rad s$^{-1}$) and (B) variation in gel strength ($G'$, $G''$) with applied strain (%) for a 12.5 % aqueous dispersion of a (0.95 PGMA$_{62}$ + 0.05 PQDMA$_{95}$) – PHPMA$_{200}$ diblock copolymer worm gel at 25 °C.
Figure S6. Variable temperature rheology studies obtained for a 12.5 % w/w aqueous dispersion of non-ionic PGMA$_{62}$-PHPMA$_{200}$ diblock copolymer worms. Conditions: angular frequency = 1.0 rad s$^{-1}$ at an applied strain of 1.0%.