

SUPPORTING INFORMATION

One-step preparation of uniform cane-ball shaped water-swelling microgels containing poly(*N*-vinyl formamide)

Sineenat Thaiboonrod^a, Francesco Cellesi^b, Rein V. Ulijn^c and Brian R. Saunders^{a,*}

^a *Biomaterials Research Group, Manchester Materials Science Centre, School of Materials, The University of Manchester, Grosvenor Street, Manchester, M1 7HS, U.K.*

^b *School of Pharmacy, The University of Manchester, Oxford Road, M13 9PT, U.K.*

^c *Department of Pure and Applied Chemistry / WestCHEM, University of Strathclyde, Cathedral Street, Glasgow G1 1XL, UK*

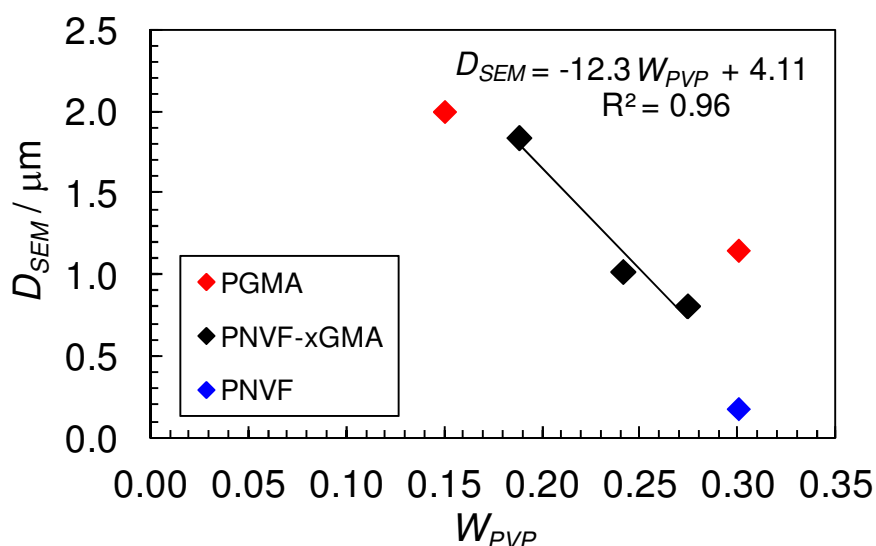


Fig. S1. Variation of the SEM number-average diameter with weight fraction of PVP (with respect to total monomer mass) used during dispersion preparation.

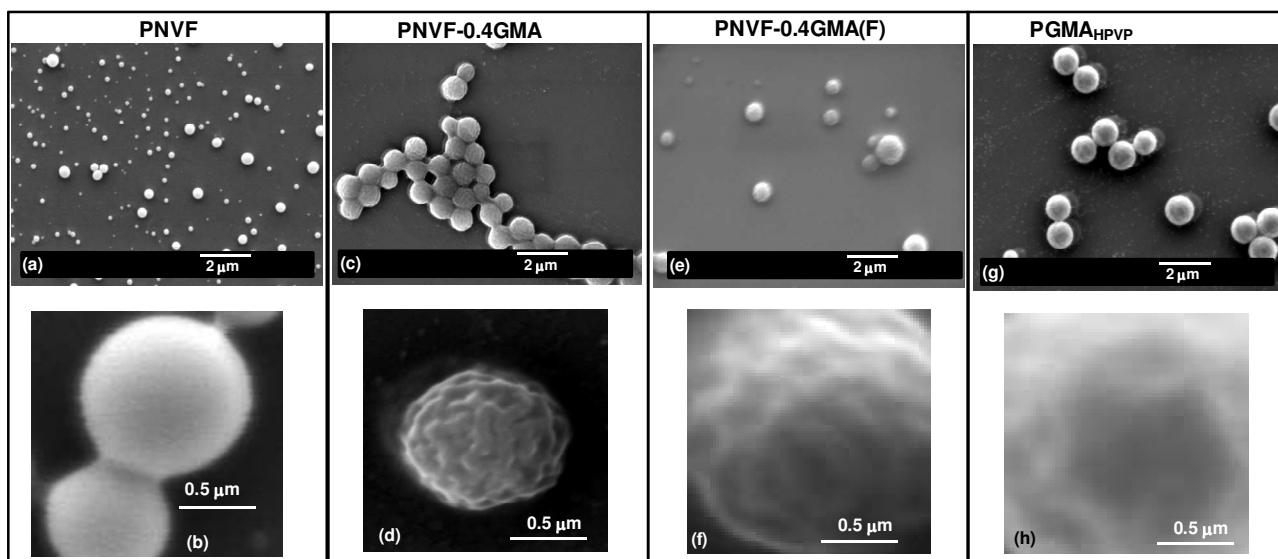


Fig. S2. SEM images for polymer particles. The identities of the particles are shown. The PNVF-0.4GMA particles for (c) and (d) were prepared for a total of 16 h reaction time.

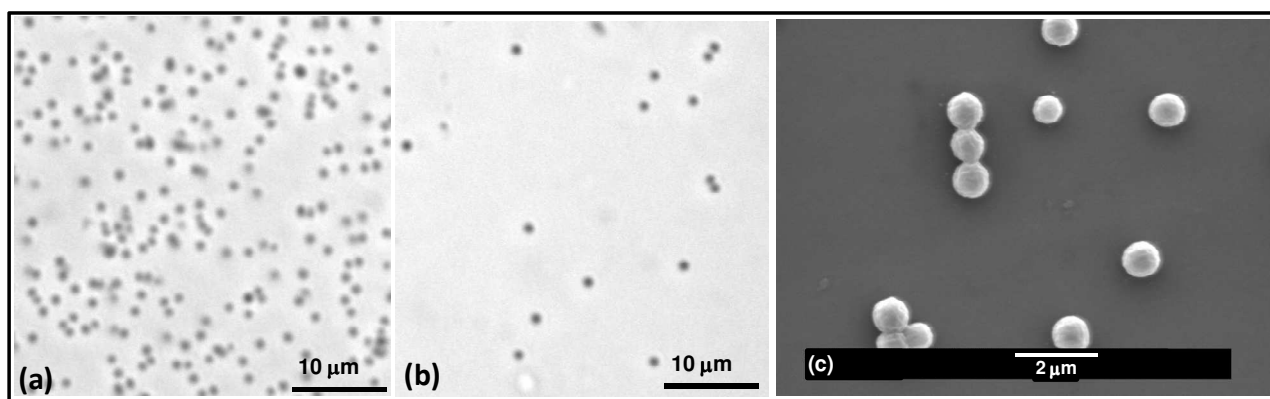


Fig. S3. Micrographs of PNVF-0.4GMA particles dispersed in good solvents for the homopolymers. Optical micrographs ((a) and (b)) and SEM image (c) of PNVF-0.4GMA particles dispersed in THF (a) and then dispersed in a larger volume of water after 24 h ((b) and (c)). For (b) the particle dilution factor was about 10.

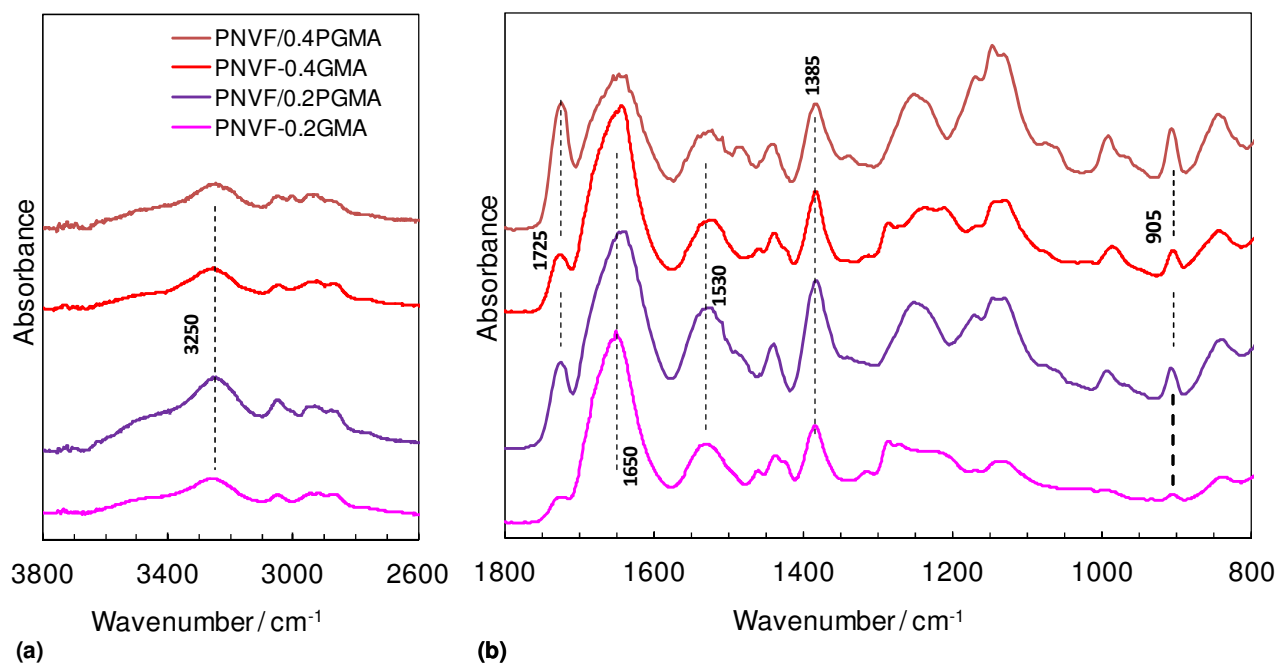


Fig. S4. FTIR spectra for PNVF-0.2GMA, PNVF-0.4GMA and also physical blends of PGMA and PNVF (PNVF/ x PGMA) with the same mole ratios as the PNVF- x GMA particles. The same legend applies to both figures.

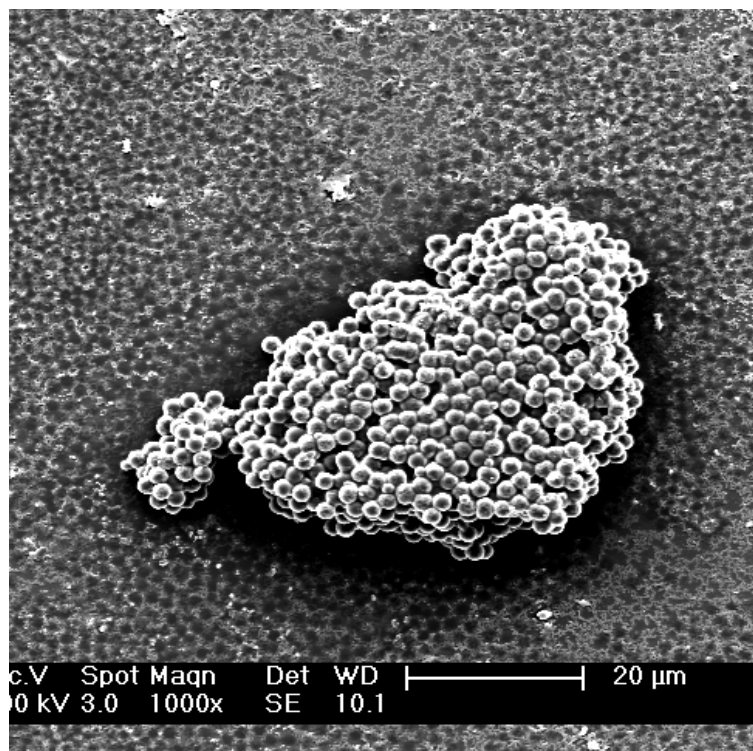


Fig. S5. SEM image of an aggregate that formed after a drop of water was placed on deposited H-PNVF-0.4GMA particles and allowed to evaporate overnight.

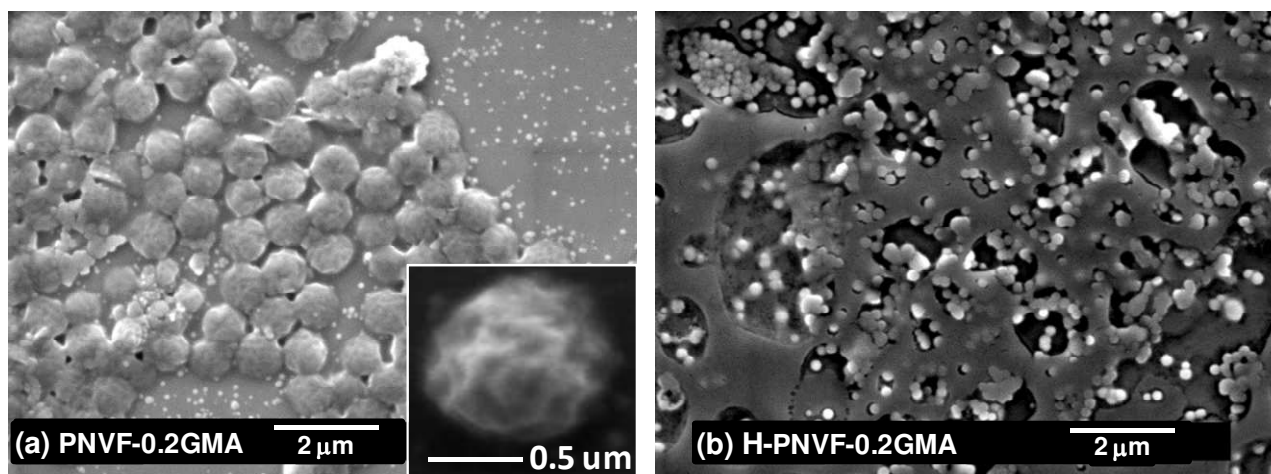


Fig. S6. Hydrolysis of PNVF-0.2GMA particles. (a) shows PNVF-0.2GMA particles dispersed in water (before hydrolysis). (b) shows H-PNVF-0.2GMA after hydrolysis by NaOH and deposited at pH = 11.3. The particles are no longer intact. The core has deposited as a polymer solution and fragmented shell is present.

Table S1. Microanalysis data

Code	%C	%H	%N
PGMA	59.0	7.2	0.2
PNVF	45.7	7.8	17.3
PNVF-0.2GMA	49.9	7.6	14.7
PNVF-0.4GMA	49.6	6.4	10.6
PNVF-0.4GMA(F)	48.5	7.3	9.4
H-PNVF-0.4GMA	49.9	7.9	8.5
PVAM (24 h reaction)	45.5	10.6	24.1
PVAM (48 h reaction)	45.2	11.0	24.3

^a Calculated for PNVF-0.25GMA