Electronic Supplementary Material (ESI) for Polymer Chemistry.

Supplementary Information

Thermoresponsive nanogels with film-forming ability

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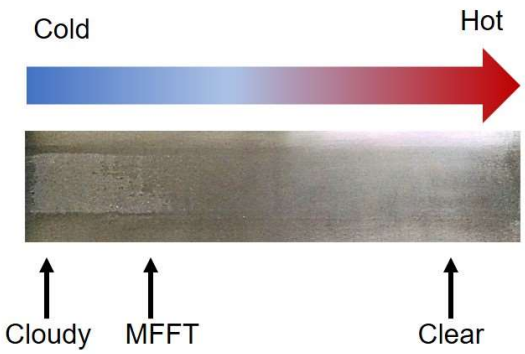
Determination of Minimum film formation temperature (MFFT)

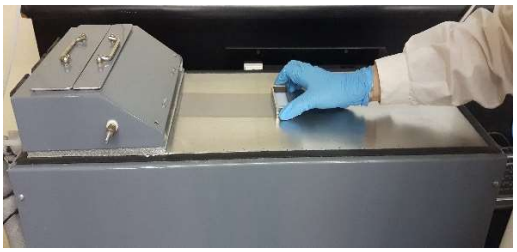
Determination of MFFT was based on an optical method reported elsewhere[1]. It involved the observation of the clarity of a cast film on a large metal table with a temperature gradient (see illustration of Figure S.1.a). The minimum temperature on it, where the film was judged to be clear, was considered the MFFT value. For this purpose, in this work a homemade equipment (Figure S.1.b) was employed. It consisted of a stainless steel table which could be controlled heated on one extreme and cooled on the other. Temperature gradient was measured by mean of 16 thermoresistances mounted at regular distance under the surface of the platen. A

quadrangular applicator (Neurtek Instruments) was used to apply the film with 120 m thickness (Figure S.1.b). Figure S.1.c shows a photo of MFFT determination of the dispersions S3 and S4, where it could be observed that they were able to form film in the whole temperature range applied onto the table (7-25 °C).

a)



b)



c)

Figure S.1 – *MFFT determination. MFFT observation in a cast film on the metal table (a); employed equipment (b), and MFFT determination on the cast S3 and S4 films (c).*

Instantaneous VCL conversion

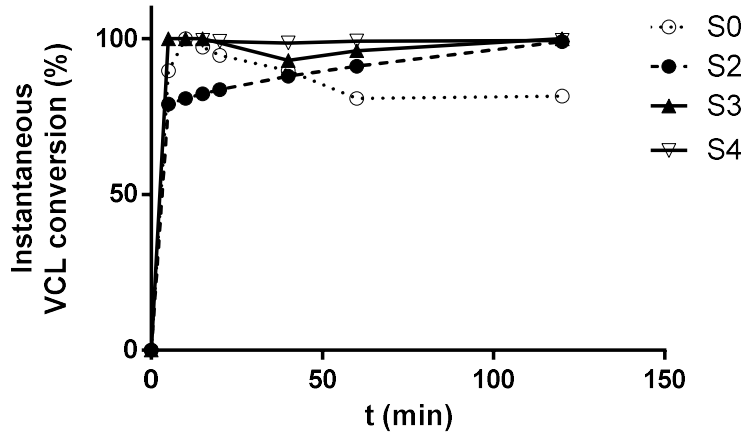


Figure S.2 – *Instantaneous VCL conversion along the semibatch polymerizations S0, S2, S3 and S4.*

References

1. J. L. Keddie, *Mater. Sci. Eng. R Reports*, 1997, **21**, 101–170.