Supporting Information for:

All-Aqueous Continuous-Flow RAFT Dispersion Polymerization for Efficient Preparation of Diblock Copolymer Spheres, Worms and Vesicles

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Supplementary Figures

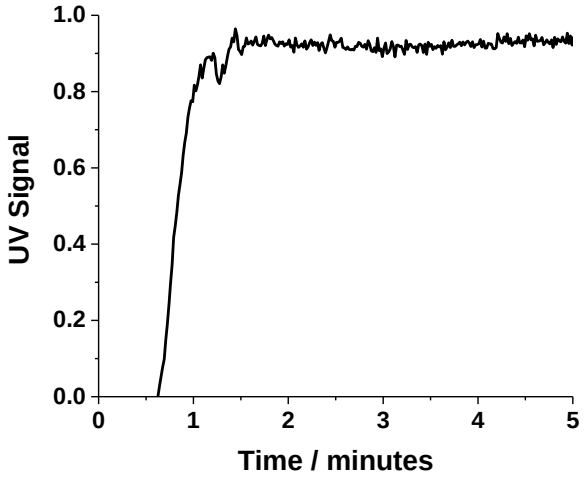

Figure S1. UV signal, measuring absorbance at 420nm, during the priming phase of a transient kinetics experiment indicating steady state is reached in the reactor after 1.5 minutes. Reaction solutions were all 30 wt% solids and [DMAm]:[CTA]:[ACVA] = 100:1:0.1.

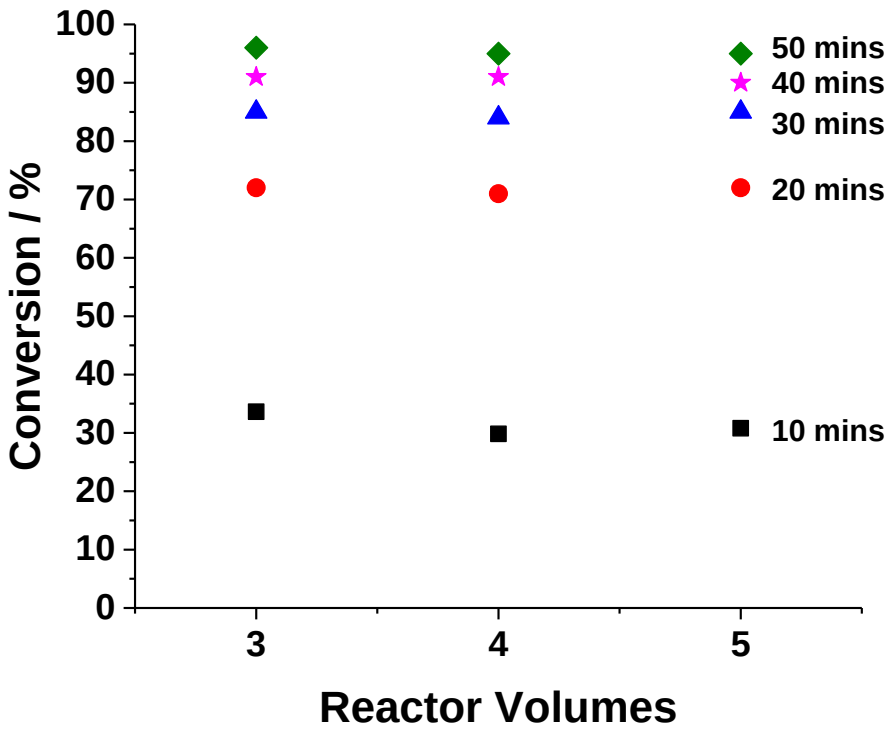

Figure S2. Monomer conversion vs reactor volumes of solution obtained for the CF polymerisation of Dimethyl acrylamide. For each residence time (10, 20, 30, 40 and 50 minutes) three samples were collected, from the outlet, over multiple reactor volumes. Reactions were all conducted at 30 wt% solids, 70 °C and [CTA]/[ACVA] = 10:1.

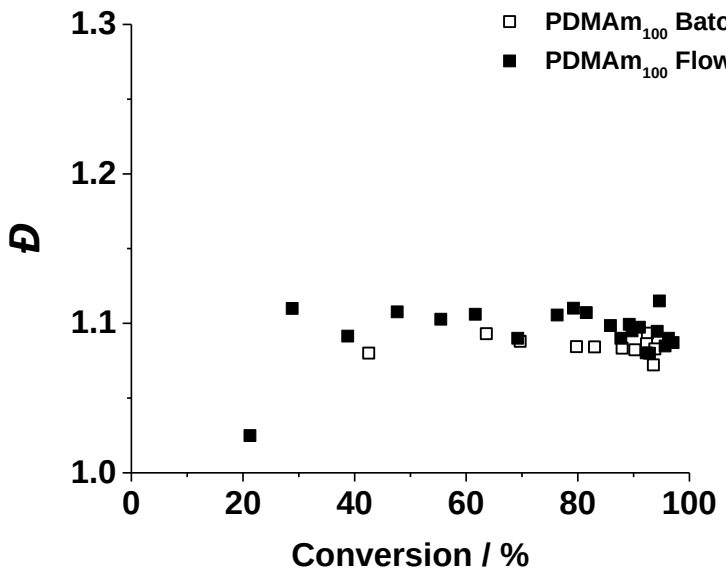

Figure S3. *Đ* vs conversion obtained from kinetic studies on the RAFT solution polymerization of DMAm in batch and flow reactors. Reactions were all conducted at 30 wt% solids, 70 °C and [CTA]/[ACVA] = 10:1.

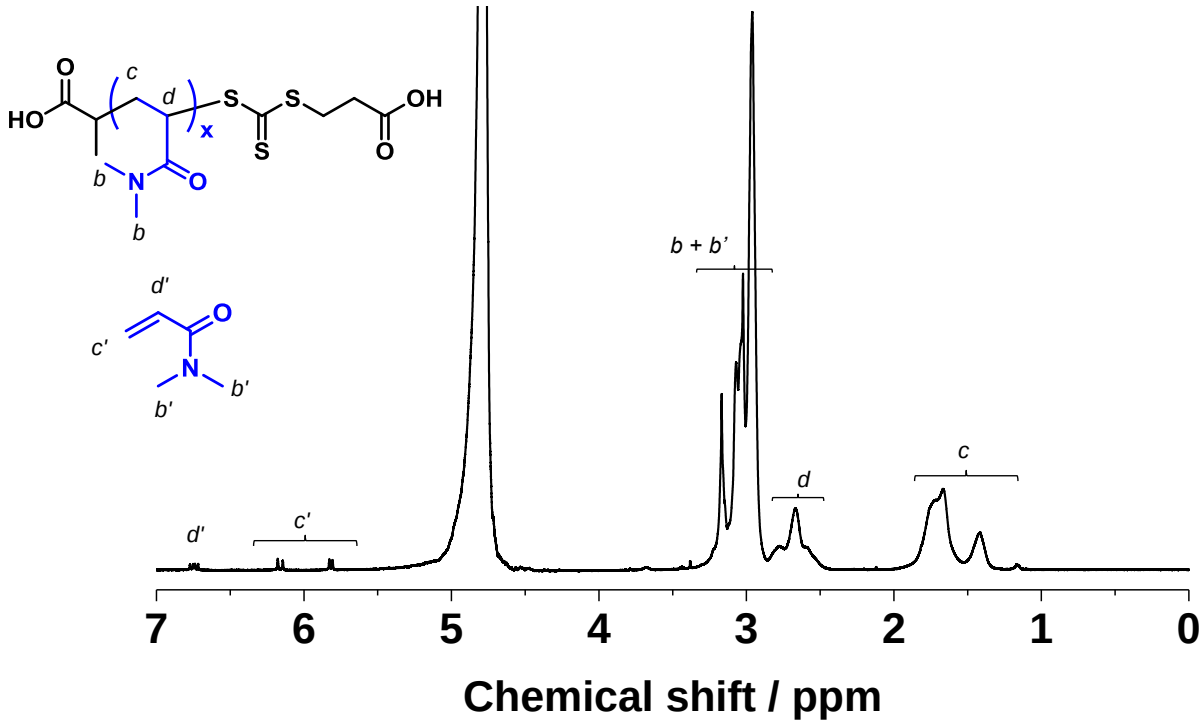

Figure S4. Assigned ^{1}H NMR spectrum recorded in D_2O for the large batch of $PDMAm_{113}$ macromolecular chain transfer agent prepared using the CF reactor platform.

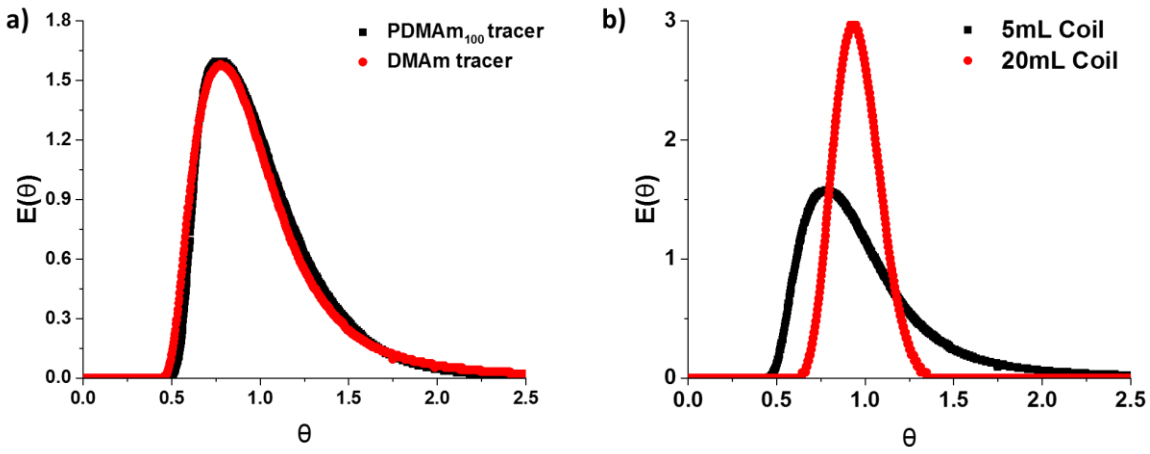

Figure S5. Dimensionless residence time distribution plots comparing a) the behavior of dimethyl acrylamide and poly(dimethyl acrylamide) in a 5 mL stainless steel tubular reactor and b) dimethyl acrylamide in 5 mL and 20 mL stainless steel tubular reactors.

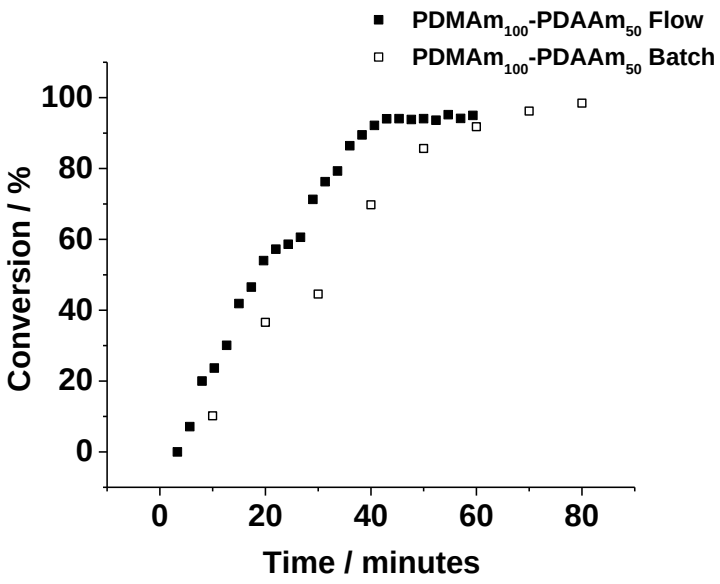

Figure S6. Conversion vs Time plots for RAFT aqueous dispersion polymerization of Diacetone acrylamide using a $PDMAm_{113}$ macro-CTA. Optimum retention time was determined when highest conversion was reached before loss of M_n control (~50 minutes). Reactions were all conducted at 10 wt% solids, 70 °C and [CTA]/[ACVA] = 10:1.

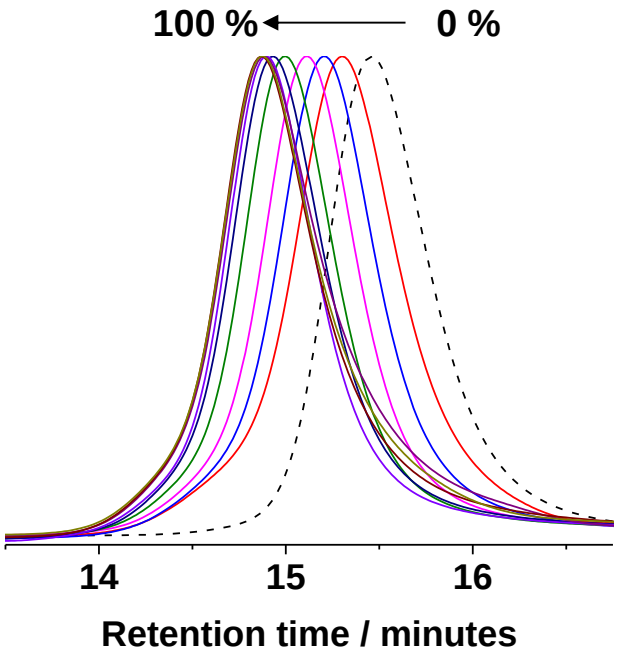

Figure S7. GPC chromatograms obtained for kinetic samples extracted from the synthesis of $PDMAm_{113}$-$PDAAm_{50}$ diblock copolymer via batch RAFT dispersion polymerization.

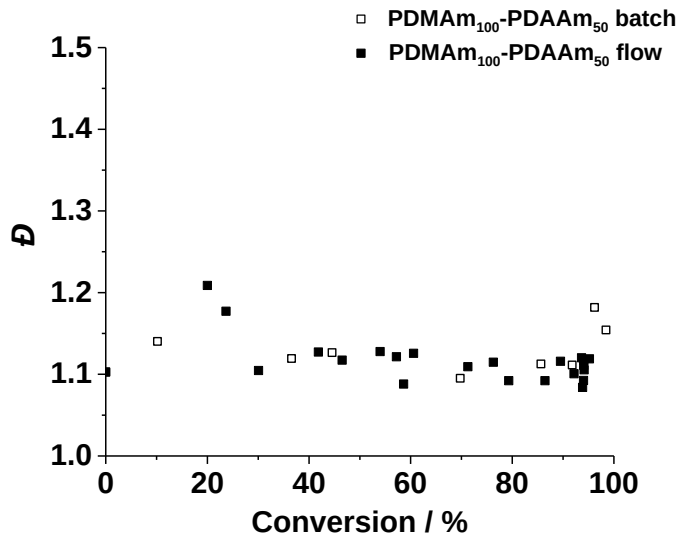

Figure S8. *Đ* vs Conversion plot for RAFT aqueous dispersion polymerization of diacetone acrylamide using a $PDMAm_{113}$ macro-CTA. Reactions were all conducted at 10 wt% solids, 70 °C and [CTA]/[ACVA] = 10:1.

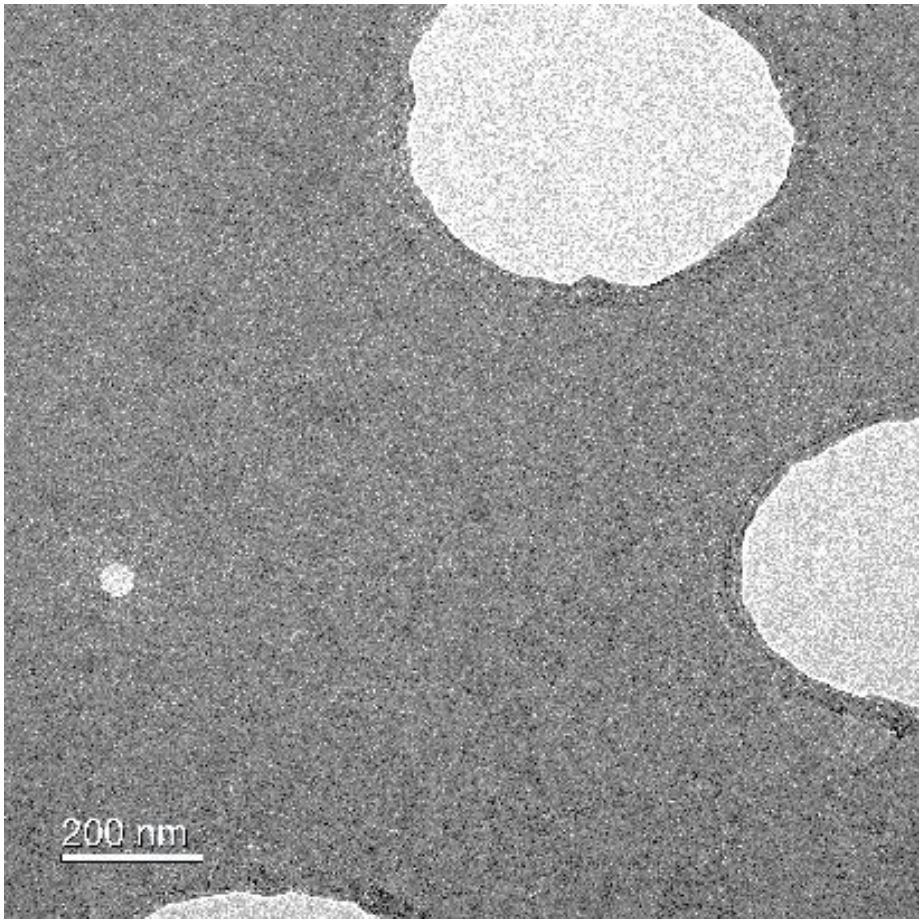

Figure S9. Inconclusive TEM image obtained for $PDMAm_{113}$-$PDAAm_{50}$.