Supporting Information

Design of New Polyacrylate Microcapsules to Modify the Water-soluble Active Substances Release

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Table S1. Amounts of the reagents adopted for the synthesis of BUMA-based polymers.

| Sample               | Na2S2O8 (g) | BUMA (g) | MA (g) | MMA (g) | T3 (g) | MAC (g) | SDS (g) |
|----------------------|-------------|----------|--------|---------|--------|---------|---------|
| BUMA_MA              | 0.25        | 10.00    | 5.00   | -       | -      | -       | 0.50    |
| BUMA_MA_MA           | 0.33        | 8.73     | 1.32   | 4.61    | -      | -       | 0.50    |
| BUMA_MA_MMA_T3       | 0.30        | 8.73     | 1.32   | 4.60    | 0.10   | -       | 0.50    |
| BUMA_MAC_25          | 0.31        | 12.25    | -      | -       | -      | 2.44    | 0.50    |
| BUMA_MAC_50          | 0.35        | 9.17     | -      | -       | -      | 5.49    | 0.50    |
| BUMA_MAC_75          | 0.40        | 5.22     | -      | -       | -      | 9.38    | 0.50    |

Figure S1. (a) Methyl orange UV/Vis spectra at different molecule concentrations. (b) Relative calibration plot at wavelength fixed at 465 nm. The corresponding molar extinction coefficient (ε) has been reported.
Figure S2. $^1$H NMR spectrum of (a) BUMA_MA and (b) BUMA_MA_MMA polymers.

Figure S3. Dynamic light scattering by volume data relative to BUMA_MA, BUMA_MA_MMA, BUMA_MA_MMA_T3 and BUMA_MAC_75 systems.
Figure S4. DSC curves relative to (a) BUMA_MA, (b) BUMA_MA_MMA, (c) BUMA_MA_MMA_T3, (d) BUMA_MAC_25, (e) BUMA_MAC_50 and (f) BUMA_MAC_75.