Supporting Information - Monodisperse core-shell PMMA latex colloids

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A. Re-adsorption of the stabilizer

The non-crosslinked mobile fluorescent polymers were removed by dissolving them in the good solvent tetrahydrofurane (THF). We observed that the particles aggregated if they were transferred from THF to an apolar solvent, e.g. hexane. We think that the reason for this is that the (unlocked) PHS dissolves in THF as well. Therefore, the removal was done after the final seeded growth step and not inbetween different steps. The restabilization of the particles is difficult and should be done only when it is strickly necessary. Also, the particles should be locked after the removal of the non-crosslinked fluorescent polymers, since we observed that it was hard to remove them after locking the PHS.

Re-adsorption procedure

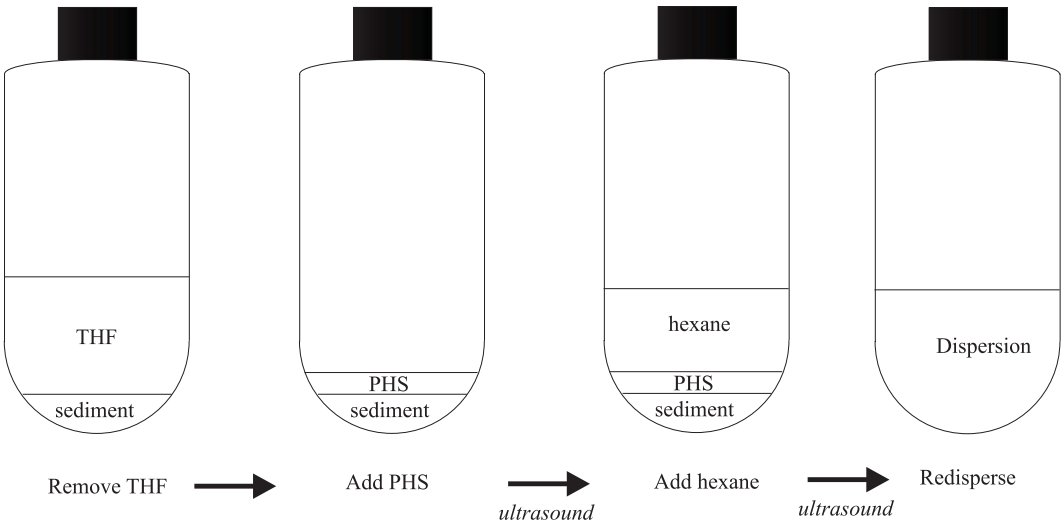

Figure 1: Schematic overview of the PHS-re-adsorption procedure

- Sediment the particles (dispersed in THF) and remove the supernatant.
- Add the PHS (the 50% solution in a 2:1 (w/w) ethylacetate/butylacetate mixture), so that the whole sediment is covered with PHS.
- Put the tube in an ultrasonic bath for about 15 minutes (without shaking/stirring).
- Add hexane so the PHS is completely covered with hexane, but do not mix it.
- Put the tube again for 15 minutes in the an ultrasonic bath (without shaking/stirring)
- Carefully redisperse the particles by mixing everything together.
- Remove excess PHS by centrifugation and removal of the supernatant.

B. Exxsol D 100

Exxsol D 100 is a mixture of several hydrocarbon liquids. The boiling traject is 235 - 270^{0}C. The important properties of Exxsol D 100 are that it has a high boiling point (to prevent that the reaction mixure becomes dry during the synthesis) and that it is apolar. Dispersion polymerization of PMMA can also be done in other apolar media, for example dodecane.