



Villeneuve d'Ascq, June 7th 2024

The bachelor thesis of Kristýna Dušková is entitled "Synthesis of stimuli-responsive copolymers via reversible addition-fragmentation chain transfer polymerization". The work has been realized at Charles University, Prague, under the supervision of Dr. Robert Mundil and colleagues.

The first part of the manuscript contextualizes the work. RAFT polymerization, which is the synthetic strategy used by the authors, is introduced, as well as thermoresponsive polymers. A focus is made on polyacrylates derivatives, which are the target of the work.

The aim and strategy followed for the work are then highlighted. Monomers synthesis is required, as the compounds are very specific. The so-formed monomers will be polymerized by RAFT, and their microstructure will be characterized by NMR and GPC. Then, the thermoresponsivity will be characterized by cloud point measurements.

The following experimental part describes first the analytical methods used for the project, followed by the synthesis of the monomers, RAFT chain transfer agents and (co-)polymers.

The results and discussion part is well detailed. The polymerization is first optimized in terms of solvent and RAFT chain transfer agent, and the best conditions are used for the copolymerization. The copolymers are purified by dialysis and one of them is deprotected. The cloud point temperature is finally measured.

Overall, the experimental and analytical work reported in the thesis were done very rigorously. Kristýna Dušková has developed strong skills in organic and macromolecular chemistry and related analytical techniques, together with the characterization of thermoresponsive polymers by cloud point measurements. The work deserves the grade A-excellent, and I recommend defense of the thesis and related graduation.

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