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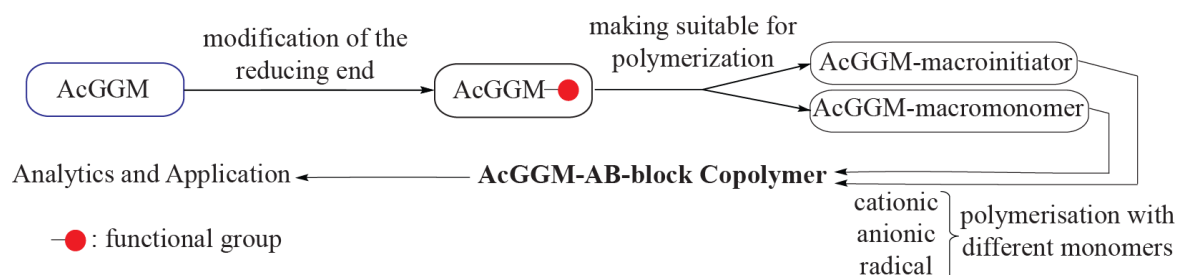


Synthesis of *O*-acetylgalactoglucomannan Copolymers and their Applications

Polymer additives are fine chemicals that are applied to improve the quality of a large range of everyday life materials, as for example in paint, cosmetic products or in papermaking. They are modifying the physical properties of the respective reaction mixture during the processing (e.g. stabilizing compounds in reaction mixture) or improving the final properties of the product (e.g. hydrophobic surfaces).

In this work, AB-block copolymers should be synthesized using *O*-acetylgalactoglucomannan (AcGGM) as a starting reagent. AcGGM is naturally present in plants and is an important substrate in paper production. To make AcGGM suitable for the synthesis of AB-*block*-copolymers, the reducing end of AcGGM has to be modified in a first step. Subsequently a polymerization can be undertaken to get a block copolymer. The physical properties of the second polymer block should be different from AcGGM.

Depending on the nature of the synthesized AcGGM-macroinitiator this one could be used to start an anionic, cationic or a radical polymerization what would lead to linear AB-*block*-copolymers. After the synthesis, the copolymers will be analyzed by NMR and GPC to define their exact structure and to figure out the molecular weight and the polydispersity. In the following illustration the synthesis path is shown in a simplified way:



Scheme 1: Illustration of the aspired synthesis path for bulding up AcGGM-AB-*block*-copolymers.