

Symmetric Polymerization with Dynamical Resolution

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Abstract : In material science, synthetic chiral polymers are becoming increasingly significant due to their distinct properties that distinguish them from other polymer materials. One special technique for producing well-defined chiral polymers is asymmetric kinetic resolution polymerization (AKRP), which adds stereo regularity to a polymer chain by the kinetic resolution of a race mate preferentially polymerizing one enantiomer. Apart from making it possible to characterize chiral polymers enantioselective, AKRP can synthesize chiral polymers with high stereo selectivity. This review includes the literature on the use of enzymes, chiral metal complexes, and organ catalysts as AKRP promoters. One enantiomer reacts more quickly than the other in this kind of polymerisation, quickly entering the expanding polymer chain, while the kinetically less reactive enantiomer stays unreactive and is readily separated using straightforward purification techniques. The degree of chiral induction and overall chirality of the chiral polymers that are generated may be assessed using the enantiomeric excess (ee) of the initial monomer, which is frequently determined by chiral HPLC analysis, throughout the polymerisation process.

Keywords : stereo regularity, polymers, dynamical, symmetric

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