

# Well-Defined Complex Macromolecular Architectures by Anionic Polymerization High Vacuum Techniques: Synthesis, Properties and Applications

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## Abstract

Anionic polymerization high vacuum techniques have proven to be a very powerful tool for the synthesis of well-defined macromolecules with complex architectures. Until now, however only a relatively limited number of such structures with two or three different components (star block, miktoarm star, graft, branched, cyclic, hyperbranched) have been created, the potential of anionic polymerization is unlimited. Imagination, nature, and other scientific disciplines (i.e., polymer physics, materials science, and molecular biology) will lead polymer scientists to novel structures, with the ultimate goal of designing and synthesizing polymeric materials with predetermined properties. A short review of the structure/property relationships and applications of selected polymers will be presented.

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