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Production of ultra mono disperse Polystyrenes

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The polymerisation index, N , is the most important parameter describing a particular polymer. Properties such as the glass transition temperature, solubility, and phase behaviour depend strongly on N . In most cases, the small N region describes the transition between oligomer and polymer, where the change in physical parameters is most pronounced. The most monodisperse polymers widely available are those produced by living polymerisation. This sophisticated chemical technique leads to a final sample containing many different N . We describe a simple technique, applicable to a wide range of polymers, which can produce almost pure N -mer systems. Examples of polystyrene and polyethylene oxide are considered and characterised by melting and glass transition temperatures.

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