

Size Characteristics for the Hyperbranched Polymers

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In the present work we calculated size characteristics of periodic hyperbranched polymers in dilute solution in the vicinity of the θ point using the continuous chain model. This model in its Gaussian approximation allows to receive exact solutions. Both the gyration radius and the hydrodynamic radius were calculated for the bottle-brush polymer and a tree-like one. We considered the size ratios $\rho = \frac{\sqrt{\langle R_g^2 \rangle}}{\langle R_h \rangle}$ and $g = \frac{\langle R_g^2 \rangle}{\langle R_{g,chain}^2 \rangle}$, that allows to describe the characteristic sizes of this topologies. This types of ratios allow to shed some light on visco-elastic properties of polymer solutions.

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