Application of Self-consistent Field Theory to Compressible Polymer Blends: χ, interfacial tension, and anomaly[1] JUNHAN CHO, Dankook University — The self-consistent field (SCF) theory, which was first developed by Helfand, is generalized to compressible polymer blends in order to investigate pressure dependence of interfacial behavior for those systems. A statistical mechanical off-lattice equation-of-state model is incorporated with the formalism and proper SCF equations for saddle points are presented. Taking typical blends as our model system, the relationship between effective Flory-Huggins parameter and interfacial tension is considered on a temperature-pressure window. Anomaly in those physical properties regarding their pressure dependence is discussed.

Junhan Cho
Dankook University

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