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Collins Model and Phase Diagram of 2D Ternary System

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Abstract: The Collins model is introduced into the two-dimensional (2D) alternative ternary system having the Lennard-Jones (L-J) potential. The Gibbs free energy of this ternary system is calculated, and according to thermodynamic theory, a group of equations that determine the solid-liquid diagram of ternary system are derived, some isothermal sectional diagrams of the 2D ternary system are obtained. The results are quite similar to the behavior of three-dimensional substances.

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Key words: L-J potential, Collins model, ternary system, solid-liquid phase diagram, isothermal sectional diagram

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