

The 2D Alternative Binary L-J System: Solid-Liquid Phase Diagram

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Abstract: The Lennard-Jones potential is introduced into the Collins model and is generalized to the two-dimensional alternative binary system. The Gibbs free energy of the binary system is calculated. According to the thermodynamic conditions of solid-liquid equilibrium, the "cigar-type" phase diagram and the phase diagram with a minimum are obtained. The results are quite analogous to the behavior of three-dimensional substances.

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Key words: Lennard-Jones potential, Collins model, binary, solid-liquid phase diagram

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