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EOS状态下基于多相流有规栅格理论的水-碳氢化合物两相体系的临界轨迹关系

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摘要 Quantitative representation of complicated behavior of fluid mixtures in the critical region by any of equation-of-state theories re-mains as a difficult thermodynamic topics to date. In the present work, a computational efforts were made for representing various types ofcritical loci of binary water with hydrocarbon systems showing Type Ⅱ and Type Ⅲ phase behavior by an elementary equation of state [calledmulti-fluid nonrandom lattice fluid EOS (MF-NLF EOS)] based on the lattice statistical mechanical theory. The model EOS requires two mo-lecular parameters which representing molecular size and interaction energy for a pure component end single adjustable interaction energyparameter for binary mixtures. Critical temperature and pressure data were used to obtain molecular size parameter and vapor pressure datawere used to obtain interaction energy parameter. The MF-NLF EOS model
adapted in the present study correlated quantitatively well the criti-cal loci of various binary water with hydrocarbon systems.

关键词 critical locus water hydrocarbon lattice theory multi-fluid theory

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Correlation of Critical Loci for Water-Hydrocarbon Binary Systems by EOS Based on the Multi-Fluid Nonrandom Lattice Theory

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Key words critical locus; water; hydrocarbon; lattice theory; multi-fluid theory

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