A New Global Optimization Technique for Chemical Phase Equilibrium Problems

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Here we present a new approach for the chemical phase equilibrium stability problem: a new model with a modified tangent phase function, and a clustering stochastic optimization method using two derivative free local search procedures:

`ftp://ftp.jate.u-szeged.hu/pub/math/optimization/index.html`

A numerical study has been completed on typical lower dimensional problems of the literature. The comparison shows that the new technique is efficient and reliable. According to our numerical test results, the efficiency indicators, such as the number of function evaluations and CPU time required, are better than those of a comparable technique. The new method seems also to be very promising on larger dimensional problems.