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论文

Au-Cu系中无序和有序相的晶格常数

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摘要： 依据合金特征晶体理论，固溶体中组元的原子状态分裂成若干特征原子状态，固溶体的晶格常数可由特征晶体的晶格常数相加定律、特征原子体积相加定律和特征原子状态相加定律求得。介绍了无序二元固溶体的9种晶格常数函数；确定了无序Au-Cu合金及其组元的晶格常数函数；预计了Au_3Cu，AuCu，AuCu_3和相应有序合金随成分变化的晶格常数、理论值与实验值符合较好.

关键词： Au-Cu系 无序合金 有序合金 晶格常数 原子体积

LATTICE CONSTANTS OF DISORDERED AND ORDERED PHASES IN Au-Cu SYSTEM

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Abstract: According to characteristic crystal theory of alloy phases, atomic state of acomponent is split into some characteristic atomic states in the solid solution. Lattice constantsof alloys may be obtained by characteristic lattice constaat additive law, characteristic atomicvolume additive law and characteristic atomic state additive law, but they are not equal in value.Nine lattice constant functions of disordered binary solid solutions are introduced. The functionssuitable for disordered An-Cu alloys and their components have been determined. Lattice constats of Au3Cu, AuCu, AuCu3 and relevant ordered alloys as a function of composition havebeen pradicated. Theoretical values are in good agreement with eXperimental values.

Keywords: An-Cu system disordered alloy ordered alloy lattice constant atomic volume

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