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Kinetics of Nb-Si *in situ* composites doped with yttrium and scandium

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Abstract

The mechanism and kinetics of Nb-Si in situ eutectic composites, including doped with yttrium and scandium were studied by methods of isothermal heating in an air stream. It is shown that the initial stage of oxidation of the alloy is limited to the chemical interaction oxygen with niobium and the formation of lower valency oxides – NbO, NbO_2, and the second step – the diffusion of oxygen. The oxidation process models are suggested and kinetic parameters of the composites Nb-Si, including doped with yttrium and scandium, are determined.