

Название публикации:

Formation of Superhard Chromium Carbide Crystal Microrods in Ni-Cr-C Systems

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Аннотация:

Ni-Cr-C materials with a high hardness determined by the presence of regions consisting of Cr₃C₂ microrods with a record microhardness reaching 3200 kg/mm² have been obtained. Their self-organization in a powder consisting of Ni, Cr, and carbon microparticles with a high weight percentage occurs in the process of its sintering at a temperature of 1300A degrees C and the subsequent sharp cooling of the resulting alloy. A model has been proposed for the process of formation of such crystal microrods whose characteristics have been determined by hardness measurement, electron microscopy, and microchemical and X-ray diffraction analyses.

Ключевые слова:

Alloys; carbon; inclusions; growth