MULTICOMPONENT EQUIATOMIC SOLID SOLUTIONS

Rempel A.A.
Vatolin Institute of Metallurgy UB RAS
620016, Ekaterinburg, Amundsena st., 101

Multicomponent solid solutions are of interest from scientific and practical point of view. Thus, this review describes several methods of synthesis of such solid solutions, their disordered atomic structure and novel functional properties.

Development and preparation of materials with prescribed properties is one of the tasks of chemistry. Traditional method of solving such a task for metallic materials consist of selection of base chemical element and post doping of this element by others elements in low amounts. Nevertheless about 20 years ago the development of materials made of five or more elements with nearly equivalent amount is began.

As a result, almost simultaneously by few independent groups of researches a new type of materials were developed and named as high-entropy materials. High-entropy materials are groups of constrictive and functional materials based on multicomponent equiatomic solid solutions [1].

1. Gelchinski B.R., Balyakin I.A., Yuryev A.A., Rempel A.A. High-entropy alloys: properties and prospects of application as protective coatings // Russian Chemical Reviews. 2022. V. 91. P. RCR5023.

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