1. Design of High Entropy Alloys Based on Phase Formation Criteria and Big Data System

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Abstract: The development and phase formation criteria of high entropy alloys (HEAs) were described briefly. A new alloy design form was proposed in view of the big data system of high entropy alloy, and a new high entropy alloy was designed and studied. The result shows that the design form, AxByC(100-a-b-x-y)DaEb, is more in line with the requirements of the big data system compared with the previous alloy forms such as AxBCDE. The proposed design method can rapidly and visually screen out the expected alloy composition from the big data system of high entropy alloy. The designed high entropy alloy, AlCoCrFeMo0.05Ni2, agrees with the target alloy, and has a great application prospect below 700 ºC. © 2019, Northwest Institute for Nonferrous Metal Research. Published by Science Press. All rights reserved
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