

Processing studies on the high entropy (MoNbTaVW)C

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A processing optimization study was conducted to identify the influence of processing parameters on the chemical homogeneity, oxygen content, and ultimately, the functional properties of (MoNbTaVW)C. Processing variables tested included milling environment, precursor treatment before sintering, and sintering temperature. The ideal samples were fabricated through the following process. They were milled in an argon environment, pre-treated in vacuum in a tube furnace (1200°C), and held at an intermediate temperature hold (also 1200°C) prior to achieving the maximum sintering temperature. These samples exhibited low porosity, denser microstructure, and low oxygen content. The effect of pretreatment on density and mechanical properties was higher than the effect of sintering temperature (1900 vs 2200°C).

Professional Status of the Speaker

Senior Scientist

Interest in submitting a paper in a special issue of

No interest

Invitation letter for visa

Yes

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