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Characterization of microstructure evolution of tungsten-copper alloys obtained by pm method

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The differences lines of researches within of the Engineering and Materials Sciences have developed new materials, which can be applied in different industrial sectors, Energy, Health and Transportation. For nuclear industry for example, the W alloy, is of great interest because of their excellent mechanical properties, excellent corrosion resistance and high cross sections to γ radiation. The tungsten and cooper, has great chemical affinity with oxygen and nitrogen, oxides and nitrides may form during the sintering process and heat treatment, changing the physic-chemical properties of material. This experiment work shows the results of microstructure evolution of the W20Cu alloy obtained by powder metallurgy method, where it was possible to obtain the crystallographic parameters and confirmation of the absence of formation of oxides and nitrides on the alloy as excellent homogeneity of the phases and great distribution of porous, confirming the reliability of sintering and heat treatment process experimental of the W20Cu alloy which can be used on sector nuclear industry in device manufacturing to transport radioactive substance.

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