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Method for carbonization of massive refractory metal rods

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Abstract

Carbonization of the volumetric tungsten and titanium rods by chemical transport reactions in salt melts was performed. By X-ray diffraction, X-ray spectrum analysis, and microhardness test it is shown that on the surface of the rods carbide coating of 20-50 mkm thickness was generated. Anodic dissolution was detected as a limiting factor for the carbonization. To prevent the anodic dissolution and to accelerate the carbonization process it is proposed to energize the sample by an alternative current.