

## **The effects of Fe additions on the liquid phase sintering of W-bronze composites**

### **Abstract**

In this investigation, experiments were conducted to evaluate the effects of Fe additives in the range of 1-5 wt.% on the densification of different compositions of W-pre-alloy bronze compacts sintered isothermally at temperatures ranging from 900 °C to 965 °C for 2.30 h. The results showed that substantial improvement in hardness by a factor of two folds and density by 10% was achieved for the W-pre-alloy bronze sintered compacts by the addition of 2-3 wt. % Fe as an activator.

**Keywords** — Composite material, microstructure, powder metallurgy, x-ray diffraction.