

Effects of strain rate and temperature on the steady state flow stress of metallic glasses

ZHIBIN LU, YUANLI XU, HANG SHAO, and JIANGONG LI

Summary

This paper reports the effects of strain rate and temperature on the steady state flow stress of metallic glasses. Based on the energy conservation between the applied mechanical work and the increased energy in metallic glasses at steady state flow, the steady state stress of metallic glasses was found to depend on difference in free volume between undeformed state and steady state of flow. The effects of strain rate (or temperature) on the steady state flow stress can be described by a linear relationship between the steady state flow stress and temperature (or logarithm of strain rate).

