

Structure and Crystallization in a HPT-deformed bulk metallic glass

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Metallic glasses are still an attractive object of investigation in the field of materials physics due to their outstanding mechanical properties. Hardness and yield strength exceed the values of their crystalline counterpart by far, but the applicability of metallic glasses is limited by the lack of sufficient plasticity. Stress localization and the associated shear softening strongly weaken the structure, thus leading to the formation of shear bands. The structure of shear bands is still far from being understood. The investigation of severely deformed metallic glasses can gain further insight into the structural modifications of shear bands with respect to the amorphous matrix as well as to the conditions of slip during plastic straining. Here, we present experiments about the crystallization behaviour as well as structural investigations in a HPT-deformed Zr-based bulk metallic glass.