

Supplementary Materials:

Figure S1.

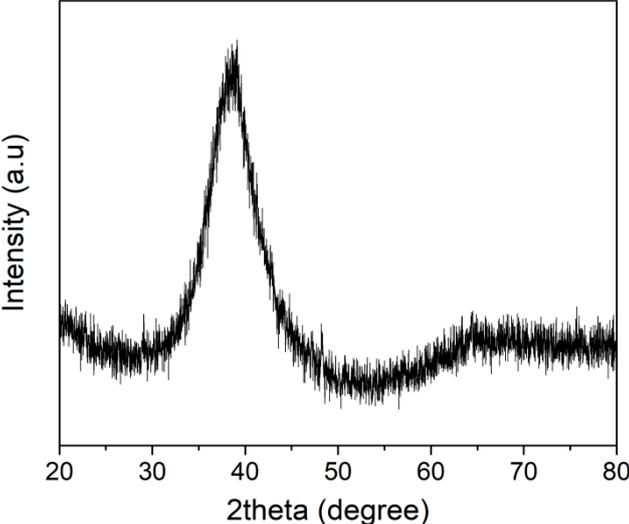


Figure 1. The typical XRD pattern of as-cast Zr-Cu-Ag-Al alloy.

Figure S2.

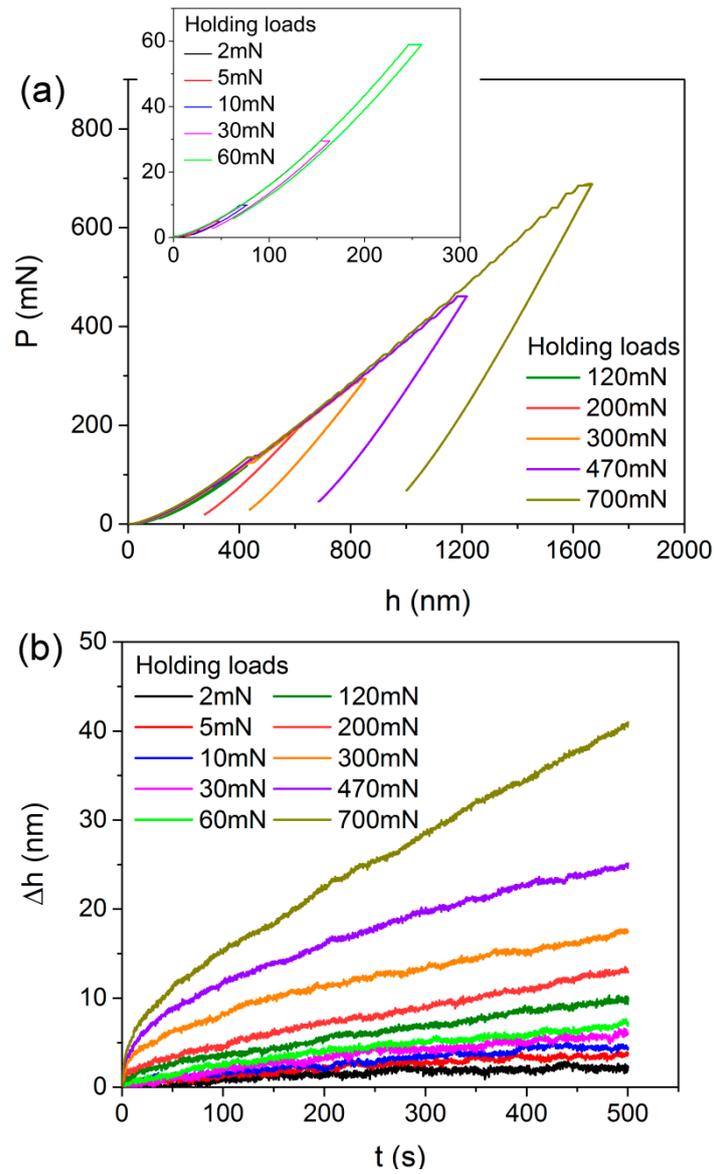


Figure 2. (a) The typical creep $P-h$ curves at various holding depths under spherical indenter. $P-h$ curves at shallow depths are enlarged in the inset. (b) Creep displacements at various holding loads were plotted with holding time.

Figure S3.

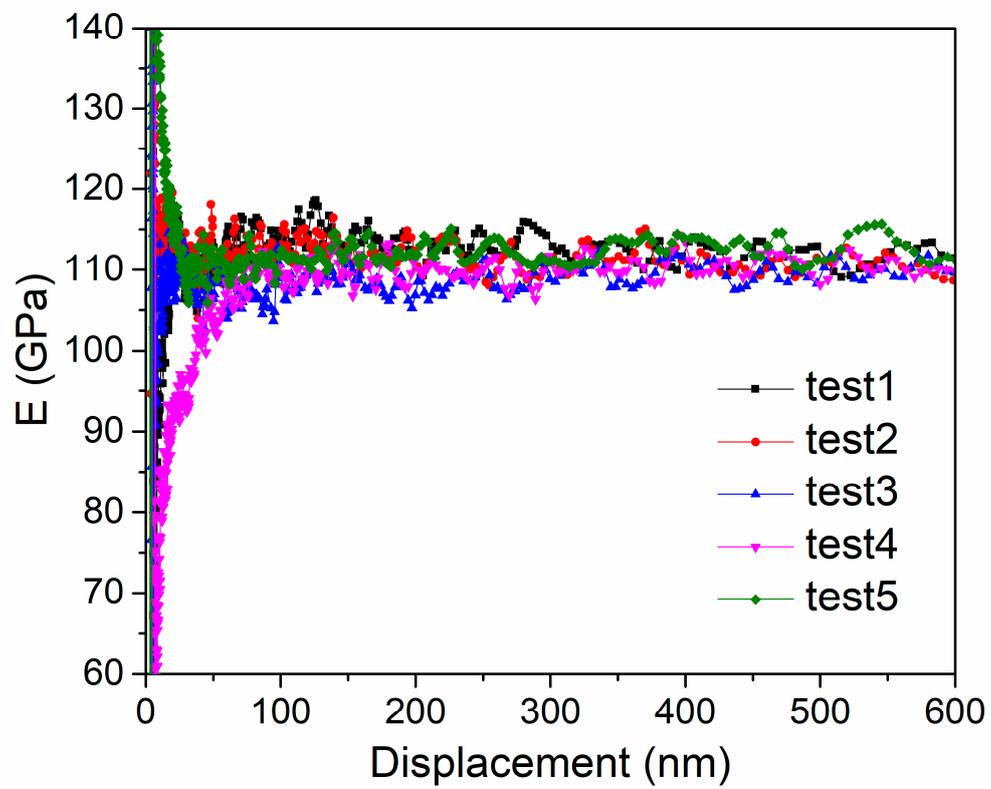


Figure 3. Elastic modulus was measured by continuous stiffness module (CSM) and was depicted as a function of displacement. The mean elastic modulus was 110 GPa.