

Thermomechanical properties of shape memory polymer SMP subjected to tension and simple shear process

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Abstract

Thermomechanical and functional properties of shape memory polymer (SMP) have been presented. A background of the polymer shape memory effects was described. Taking advantages from high quality testing machine and infrared camera, mechanical characteristics and temperature changes of the shape memory polyurethane specimens subjected to tension and simple shear processes were clarified and discussed. Basing on the mechanical characteristics and the relevant temperature changes, the shape memory polyurethane thermomechanical properties have been studied. Taking into account the tests carried out with various strain rates, the influence of the strain rate on the polymer mechanical behavior was discussed.

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