

## Rheological Modeling for Shape-Memory Thermoplastic Polymers

**Authors :** H. Hosseini, B. V. Berdyshev, I. Iskopintsev

**Abstract :** This paper presents a rheological model for producing shape-memory thermoplastic polymers. Shape-memory occurs as a result of internal rearrangement of the structural elements of a polymer. A non-linear viscoelastic model was developed that allows qualitative and quantitative prediction of the stress-strain behavior of shape-memory polymers during heating. This research was done to develop a technique to determine the maximum possible change in size of heat-shrinkable products during heating. The rheological model used in this work was particularly suitable for defining process parameters and constructive parameters of the processing equipment.

**Keywords :** elastic deformation, heating, shape-memory polymers, stress-strain behavior, viscoelastic model

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