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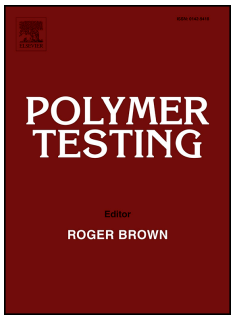

Thermal-mechanical behavior of styrene-based shape memory polymer tubes

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Thermal-mechanical behavior of styrene-based shape memory polymer tubes

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Abstract: Styrene-based shape memory polymer (SMP) tubes were fabricated and their basic mechanical properties in different deformation states were investigated. The tensile, compression, bending and twisting shape memory properties of the tubes were analyzed and discussed, and the results indicated that SMP tubes exhibit good shape fixity ratio and shape recovery ratio. In addition, the shape recovery behavior was investigated at different heating rates. These experimental results will provide guidance for future applications of SMP tube structures.

Keywords: Shape memory tubes; Thermal-mechanical behavior; Deformation; Free-recovery and constrained recovery