



Polymers under Multiple Constraints

Polymer- & Soft-Matter-Seminar

Tuesday,
5th April 2016

at: 5.15pm

VDP4 1.27,
Von-
Danckelmann-
Platz 4,
06120 Halle

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“Invertible shape-memory effect in linear polyethylene and poly(ϵ -caprolactone)”

The experimental and theoretical investigation of invertible shape-memory (SM) effect in crystallizable covalent networks is in focus due to fundamental interest of underlying molecular mechanisms and various applications of SM polymers as sensors and actuators. This work studies the invertible SM behavior of crosslinked high-density polyethylene (HDPE) and poly(ϵ -caprolactone) (PCL) with various crosslink densities under different programming conditions. Furthermore, thermal properties of the samples as well as morphology and orientation of the crystalline structure formed under load in HDPE and PCL are analyzed as well. The results of modeling the invertible SM effect in HDPE on the basis of recently developed theory are in good accordance with the experimental data.

