ODSEK ZA KOMPLEKSNE SNOVI

Seminar

of the Department of Complex matter F7

Thursday, 10.10.2019 at 13:00

Seminar room F7

The evolution order parameters in an auxetic Liquid Crystal Elastomers under strain

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Liquid crystal elastomers combine the fields of liquid crystal physics with polymer physics with surprising consequences. Our group has reported a negative order parameter of the polymer backbone of an LCE based on stress strain curves. This coincides with a negative Poisson ratio and occurs during a reorientation of the nematic director.

The evolution of order parameters, P2 and P4, for an LCE under strain has been determined using Raman spectroscopy. This revealed that, for our LCE, P4>P2 for certain values of strain. A behaviour not seen in conventional nematic thermotropic liquid crystals. The region where P4>P2 coincides with the beginning of the mechanical Freedericksz transition. Subsequent experiments on the LCE prepared in different states to understand the deformation modes. These are reported herein.

The lecture will be held in English.

Cordially invited to attend.