

Abstract Submitted
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Conformation and dynamics of chained molecules in nanoscopic cylinders KYUSOON SHIN, JIUN-TAI CHEN, DUYEOL RYU, AMANDA LEACH, UMASS Amherst, PAPPANNAN THIYAGARAJAN, Argonne National Laboratory, THOMAS RUSSELL, UMASS Amherst, KYUSOON SHIN, JIUN-TAI CHEN, DUYEOL RYU, AMANDA LEACH, THOMAS P. RUSSELL COLLABORATION¹, PAPPANNAN THIYAGARAJAN COLLABORATION² — So far thin film has been the main repertoire of study to understand the structure of chained molecules in confined environment. Recently, we have explored the physical properties of chained molecules confined in nanopores that have different dimensionality from thin films. We used anodized aluminum oxide membrane with hexagonally packed, regular-sized nanopores with the pore diameter of 15 nm. Via strong capillary action, we have successfully filled different size polystyrene (molecular weight range 20,000 to 3,000,000) in these membranes. In order to characterize the conformation and the dynamics of polystyrene chain in the anodized aluminum oxide nanopores, we are doing neutron and light scattering etc., and they will be discussed on the presentation.

¹UMASS Amherst

²Argonne National Laboratory

Kyusoon Shin
UMASS Amherst

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