

Polymers in nanopores

B. Stühn, Condensed Matter Physics, TU-Darmstadt

Materials with structures on the scale of nanometers are of great interest with respect to application as well as for fundamental studies. Here we use porous membranes that are produced by heavy ion tracks in polymers or by electrochemical etching of aluminum. We show how these materials may be characterized using small angle X-ray scattering. The flow of homopolymers into these pores is studied and discussed within classical flow theories. A specific problem arises for the microphase separation of block copolymers within the pore as the domain structure competes with confinement.