

[P23] Chain miscibility of ring polymers trapped inside cylindrical pore*Juin Kim, KAIST*

We report molecular dynamics simulations of two ring-shaped self-avoiding polymers trapped inside a closed cylindrical pore, as a coarse-grained model of bacterial chromosomes. In particular, we study how confinement influences chain miscibility of such chains by compressing two polymers against each other. Our results show that the chains overlap partially in wide parameter space and segregate better under strong confinement. The chain miscibility diagram of the ring polymers is well consistent to the case of the linear polymers, implying that the effect of ring topology, in the context of the miscibility diagram, is equivalent to rescaling the pore diameter.