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Semi-flexible Polymer Dynamics in Nanoslits Smaller than the Persistence Length JEN-FANG CHANG, YENG-LONG CHEN¹, Institute of Physics, Academia Sinica, Taipei, Taiwan — Theories have been developed for the dynamics of confined semi-flexible polymers. When the confinement length is smaller than the chain radius of gyration (R_g) and much greater than the Kuhn length (b_k), the blob scaling regime characterizes the chain dynamics, while Odijk's theory characterizes chain relaxation when the confinement length is much smaller than b_k . Nevertheless, the boundary of these two regimes is not well-defined. This work will characterizes the transition from the blob regime dynamics to the Odijk regime dynamics using Brownian dynamics simulations coupled with the lattice Boltzmann method. In addition, we will examine the effects of confinement on the screening of intra-chain segment hydrodynamic interactions and the distribution of segments in sub-persistence length confinement.

¹Research Center for Applied Science, Academia Sinica, Taipei, Taiwan

Jen-Fang Chang
Institute of Physics, Academia Sinica

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