



سمینار هفتگی گروه ماده چگال نرم

Study the Collective behavior of F-actin polyelectrolytes using a soft Debye Huckel potential

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Experimental study of rod-like polyelectrolytes shows fantastic structural and dynamics properties. This is due to long range electrostatics interactions and entropy effects. Theoretical Study of problems related to a large number of particles which long range interactions are dominant within them wasn't very successful and computer simulation support was very efficient and effective in recent years. Polyelectrolytes solutions have two very important properties, one is slow dynamics and the other one is orientational ordering. In fact, a main thing which makes the study of polyelectrolytes become difficult via computer simulation is this slow dynamics. With this property their behavior and dynamics study becomes very expensive and time consuming. Especially the time required to reach their orientational ordering. With the aim of accelerating the slow dynamics of rod-like polyelectrolytes, their collective behavior has been studied by means of computer simulation. In this study by adjusting the involved factors with those in experimental studies and using a pseudo- potential, we tried to accelerate the slow dynamics of rod-like polyelectrolytes and compared their dynamics in presence and absence of this potential. Soft potential effectively accelerate the dynamics and reduce the system relaxation time.

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قطب ماده چگال و سیستمهای پیچیده