

Abstract Submitted  
for the MAR08 Meeting of  
The American Physical Society

**Meso-scale modeling of block copolymer/colloid nano-composites**

MARCO PINNA, School of Computing, Engineering and Physical Sciences, University of Central Lancashire, Preston, UK, IGNACIO PAGONABARRAGA, Department of Fundamental Physics, University of Barcelona, Spain, ANDREI ZVELINDOVSKY, Centre for Materials Science, University of Central Lancashire, Preston, UK — We develop a coarse grained simulation technique to study dynamics in soft nano-composites. The system consists of block copolymer melt or solution with nano-size colloidal particles. The time evolution of the system is described by a multiscale approach: a field based simulation for block copolymer component and a particle based method for nano-colloids. The block copolymer is modelled by cell dynamics simulation technique, and colloids are modelled in a spirit of dissipative particles dynamics. A cross interaction term is controlling the interplay of dynamics of both components. The influence of colloids on block copolymer morphology is investigated.

Marco Pinna  
School of Computing, Engineering and Physical Sciences,  
University of Central Lancashire, Preston, UK

Date submitted: 04 Jan 2008

Electronic form version 1.4