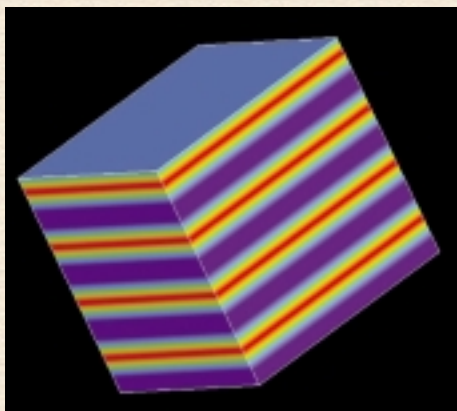
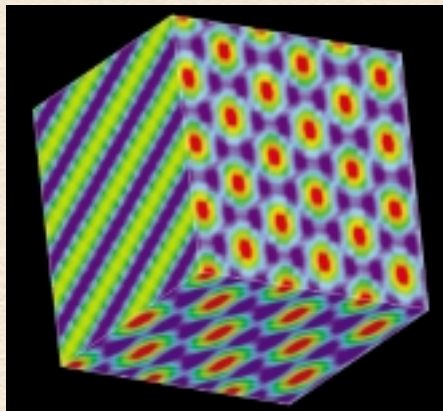


# SUSHI

(Simulation Utilities for Soft and Hard Interfaces )

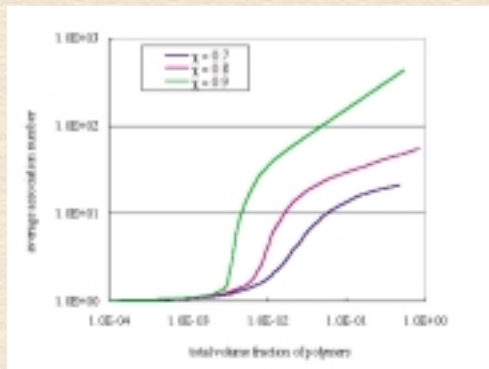
SUSHI calculates the equilibrium and non-equilibrium structures in polymer blends and block copolymers by solving the self-consistent Edwards equation.

SUSHI can deal with a variety of polymers; linear polymer, branched polymers with any topology, copolymers with any monomer sequences (block, random, tapered-random) and the polymers grafted on a solid surface. SUSHI can be used to study the surface modification caused by polymer grafting or polymer adsorption, and the self-assembly of block polymers (micellar formation).



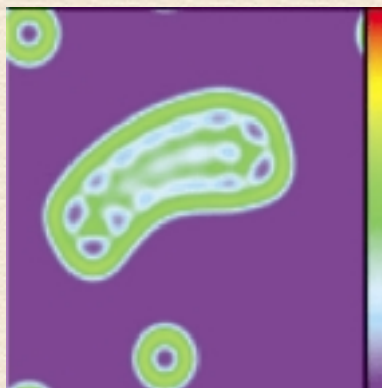
### Self-assembly of block copolymer :

Block copolymers form various nanostructures by micro-phase separation. The figure shows the hexagonal cylindrical structure of ABC star block copolymer (left) and the lamellar structure of ABC tri-block copolymer (right).



### Micellar formation of block copolymer :

The critical micellar concentration of block copolymers in a selective solvent can be determined by SUSHI.



### Reaction induced phase separation :

Simultaneous polymerization and graft copolymerization in polybutadiene and polystyrene system creates a salami-like structure. This phenomena, observed in high-impact- polystyrene, is reproduced by SUSHI.

### Examples of applications

- \* Micro phase separation of polymer blends
- \* Interfacial tension of polymer blends
- \* Micelle and critical micellar concentration
- \* Polymer brush on a solid surface
- \* Polymer adsorptions to a solid surface
- \* Polymer thin film on a solid surface
- \* Reaction-induced phase separations