ESF Exploratory Workshop on

Frontiers in European Research on
Liquid Crystalline Soft Matter

LC Lab Bandol, France, May 27-29th 2009

Session ii. Drops, bubbles, tubes, foams and films

Collective rotations on surfaces, stable boolaamphiphiles monolayers overcoming collapse, incorporation of large objects into LC lyotropic phases, motion of ions in LC: an overview of my recent LC works

Robert Hołyst

Institute of Physical Chemistry
Polish Academy of Sciences
Kasprzaka 44/52
01-224 Warsaw
Poland

http://www.ichf.edu.pl/holyst.html

I will give a brief overview of the LC research done in my experimental group. The first problem discussed will concern monolayers of boolaamphiphiles which overcome monolayer collapse upon compression. Next I will discuss the collective rotations of LC ferroelectric monolayer on water with typical rotation times of the order of minutes. I will also show how to speed up 1000-fold the phase separation process in LC/polymer mixtures using AC electric field of low frequency. Finally I will discuss some results concerning incorporation of carbon nanotubes into hexagonal phases of lyotropic liquid crystals.