Abstract Submitted
for the MAR05 Meeting of
The American Physical Society

Dynamics of Dislocations in Anisotropic Pattern[1] CARINA KAMAGA, University of California, Irvine, MICHAEL DENNIN, University of California, Irvine — We report on experimental measurements of dislocation motion in an anisotropic pattern forming system, electroconvection. For electroconvection, nematic liquid crystals are placed between two glass plates. An ac voltage is applied perpendicular to the plates. When the applied voltage greater than a critical value of the voltage is applied suddenly, a striped pattern of convection rolls form. However, a high density of topological defects/dislocations is present immediately after the sudden change in voltage. These dislocations annihilate with each other over the course of time. Topological defects play a major role in the coarsening process, and they are known to exhibit complex dynamics in striped systems. In this report, we focus on the dynamics of dislocations during the coarsening under the influence of different wavevectors in the striped system.

[1]NSF funding

Carina Kamaga
University of California, Irvine

Date submitted: 01 Dec 2004 Electronic form version 1.4