Simulation studies of defect textures and dynamics in 3-d cholesteric droplets[1] VIANNEY GIMENEZ-PINTO, SHIN-YING LU, JONATHAN SELINGER, ROBIN SELINGER, Liquid Crystal Institute, Kent State Univ. — We model defect texture evolution in droplets of cholesteric liquid crystals by solving for the dynamics of the nematic director field. In order to accommodate defects in the simulated texture, we use a finite difference formulation that is explicitly independent of sign reversal of the director at any position in the sample. Textures are visualized using either the Berreman 4x4 matrix method or by mapping free energy density. We study both planar and focal conic cholesteric textures in 3-d spherical and cylindrical droplets, with the goal to optimize device geometries for bistable display applications.

Robin Selinger
Kent State University

Date submitted: 20 Nov 2009   Electronic form version 1.4