

# **Numerical studies of the electrical response on defect textures and dynamics in cholesteric droplets.**<sup>1</sup>

Vianney Gimenez-Pinto\*, Shin-Ying Lu, Jonathan Selinger, Robin Selinger.

*Liquid Crystal Institute, Kent State University*

We model defect texture evolution in droplets of cholesteric liquid crystals by solving for the dynamics of the nematic director field in the presence of electrical 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. We studied the switching process and electrical response that drives the transition between both planar and focal conic cholesteric textures. Micro-structural texture evolution on 3-D spherical and cylindrical droplets is studied using different anchoring conditions with the goal to optimize bistable cholesteric liquid crystal displays design.

<sup>1</sup>Supported by Ohio Board of Regents