1000-76-224 **Qi Wang** (`wang@math.fsu.edu`), Dept. of Math., Florida State University, Tallahassee, FL 32306, and **Zhenlu Cui*** (`zcui@math.fsu.edu`), Dept. of Math., Florida State University, Tallahassee, FL 32306. *Continuum theory for flows of liquid crystal polymers.*

We develop a continuum theory for flows of liquid crystal polymers based on tensor theory. Some equilibrium patterns are created. For cholesterics, we obtain the governing equations for the flows using the homogenization technique. They are nonhomgenous and different from the existed results. Some results on the permeation mode are obtained. (Received August 25, 2004)