Abstract Submitted
for the MAR05 Meeting of
The American Physical Society

A Light Driven Artificial Goldfish J. NEAL, Liquid Crystal Institute, Kent State University, Kent, OH, USA, H. FINKELMANN, Institute fuer Macromoleculare Chemie, Albert-Ludwigs Universitat, Freiburg, Germany, P. PALFFY-MUHORAY, Liquid Crystal Institute, Kent State University, Kent, OH, USA, M. SHELLEY, Courant Institute of Mathematical Sciences, New York University, New York, USA, T. TOTH-KATONA, Liquid Crystal Institute, Kent State University, Kent, OH, USA , LIQUID CRYSTAL INSTITUTE, KENT STATE UNIVERSITY, KENT, OH, USA COLLABORATION, INSTITUTE FUER MACROMOLECULARE CHEMIE, ALBERT-LUDWIGS UNIVERSITAT, FREIBURG, GERMANY COLLABORATION, COURANT INSTITUTE OF MATHEMATICAL SCIENCES, NEW YORK UNIVERSITY, NEW YORK, USA COLLABORATION — Liquid crystalline elastomers (LCEs) undergo large and rapid shape changes when illuminated by light. We have immersed an azo-dye doped LCE in a fluid and alternately illuminate either side of the LCE with light to create an artificial goldfish of sorts. These light induced deformations allow the LCE to interact with a fluid environment in novel ways. We use a fluid flow visualization technique to attempt to understand the dynamics of these interactions. We describe our experimental setup, the LCE drive scheme used, and our observations of induced motion in both the LCE sample and the surrounding fluid.

Peter Palffy-Muhoray
Liquid Crystal Institute, Kent State University, Kent, OH, USA

Date submitted: 06 Dec 2004 Electronic form version 1.4