

Abstract Submitted
for the MAR07 Meeting of
The American Physical Society

Single DNA electrophoresis in Pluronic F127 in a real-time fluorescence microscopy SEUNGYONG YOU, DAVID VAN WINKLE, Dept. of Physics and Center for Materials Research and Technology, Florida State University — Electrophoresis is the separation of bio-molecules in a sieving medium by applying an electric field. The Pluronic F127 gel was introduced as a new sieving medium for electrophoresis. The mobility of DNA in this gel is not fully explained by conventional reptation theories. Here, in our work, the migration of single DNA molecule pre-stained was studied on the gel electrophoresis by real-time fluorescence microscopy. Separations were performed on dsDNA fragments ranging in length from 200 base pairs (bp) to 2500 bp in pluronic gel in various concentrations. Evidence is presented that in some cases DNA fragments electrophorese along gel crystallite grain boundaries and in other cases directly through gel crystallites. This is direct observation of DNA migration through the pluronic gel on a microscopic scale.

Seungyong You
Dept of Physics and Center for Materials Research and Technology,
Florida State University

Date submitted: 02 Dec 2006

Electronic form version 1.4