Abstract Submitted
for the MAR06 Meeting of
The American Physical Society

Microfluidic device for bacterial genome extraction and analysis
PETER GALAJDA, ROBERT RIEHN, YAN-MEI WANG, JUAN KEYMER, Department of Physics, Princeton University, IDO GOLDING, EDWARD C. COX, Department of Molecular Biology, Princeton University, ROBERT H. AUSTIN, Department of Physics, Princeton University — Although single molecule DNA manipulation and analysis techniques are emerging, methods for whole genome extraction from single cells, genomic length DNA handling and analytics is still to be developed. Here we present a microfabricated device to address some of these needs. This microfluidic chip is suitable for culturing bacteria and subsequently retrieve their genetic content. As a next step, the extracted DNA can be introduced in a nanostructured segment of the chip for precise handling, stretching and analysis. We hope that similar microdevices can be useful in studying genetic aspects of the cell lifecycle in a variety of organisms.

Peter Galajda
Department of Physics, Princeton University

Date submitted: 04 Dec 2005 Electronic form version 1.4