Abstract Submitted
for the MAR06 Meeting of
The American Physical Society

On-Chip Integration of Cell-Free Gene Expression AMNON BUXBOIM, Department of Materials and Interfaces, Weizmann Institute of Science, Rehovot, Israel, MARGHERITA MORPURGO, Department of Biological Chemistry, Weizmann Institute of Science, Rehovot, Israel, MAYA BAR-DAGAN, Department of Materials and Interfaces, Weizmann Institute of Science, Rehovot, Israel, VERONICA FRYDMAN, Chemical Research Support, Weizmann Institute of Science, Rehovot, Israel, DAVID ZBAIDA, Department of Materials and Interfaces, Weizmann Institute of Science, Rehovot, Israel, ROY BAR-ZIV, Department of Materials and Interfaces, Weizmann Institute of Science, Rehovot, Israel — We present a synthetic approach for the study of gene networks *in vitro* which is complementary to traditional *in vivo* methodologies. We have developed a technology for submicron integration of functional genes and on-chip protein synthesis using a cell-free transcription/translation system. The interaction between genes is facilitated by diffusion of on-chip gene expression products from 'source' genes towards 'acceptor' genes. Our technology is simple and inexpensive and can serve as an improved platform for a wide variety of protein and DNA biochip applications.

Amnon Buxboim
Department of Materials and Interfaces,
Weizmann Institute of Science, Rehovot, Israel

Date submitted: 03 Dec 2005 Electronic form version 1.4