

Abstract Submitted  
for the MAR08 Meeting of  
The American Physical Society

**Well-Oriented NanoWell Array Metrics for Digital NanoBioChip**

HEAYEON LEE, BONGKUK LEE, TOMOJI KAWAI, The Institute of Scientific and Industrial Research (ISIR-SANKEN), Osaka University, THE INSTITUTE OF SCIENTIFIC AND INDUSTRIAL RESEARCH (ISIR-SANKEN), OSAKA UNIVERSITY TEAM — Recently many researchers have sought new paradigm for nanobiochip that can be miniaturized and integrated to produce intelligent analysis systems in numerous biotechnology. We have been tried to develop biocompatible materials based nanopatterning, self-assembly array to address challenging problem in nanobioscience. In this time, we describe the nanometrics geometry of a well-oriented nanowell (ONW) array derived from nanofabrication technology which can easily be employed for digital detection with a high S/N ratio, miniaturization, integrated assays and single molecule analysis. We fabricated the self-organized nanopatterning of copolymer as a platform of biomolecular nanoarray using nanolithography. We also present a strong specific antibody-antigen interaction on lipid-membrane modified gold surface using ONW. We believe these findings can be related to various nanobiochip applications. References 1. H.Y. Lee, T. Kawai, K.Y.Suh et al, *Advanced Materials*, In press (2007). 2. H.Y. Lee, T. Kawai et al, *Appl. Phys. Lett.* 89, (2006) 113901.

HeaYeon Lee  
The Institute of Scientific and Industrial Research  
(ISIR-SANKEN), Osaka University

Date submitted: 23 Nov 2007

Electronic form version 1.4