On-Chip Bead Array for Bio-Analysis

CNF Project # 854-00
Principal Investigator: Hui Huang, Ph.D.

Abstract:
Prototype devices have been fabricated and optimized for multiplex DNA and protein analysis.

Summary:
BioArray Solutions has developed a proprietary BeadChip™ format that combines semiconductor technology, microparticle chemistry and molecular biology to bring unparalleled flexibility and performance to quantitative DNA and protein analysis.

To produce our functional chips, color-coded microparticles (“beads”) are assembled into a silicon chip and immobilized to form a planar array in a designated area. Our continuous effort at CNF has resulted in significantly improved chip design and fabrication process to ensure high quality chips.

The BeadChip™ products have been successfully used for human leukocyte antigen (HLA) molecular typing via hybridization-mediated multiplexed analysis.

References:
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Figure 1: Image of green fluorescent dye coded bead array on chip.

Figure 2: Cy3 fluorescent image of the array after hybridization with fluorescent dye tagged DNA targets.