

Microfluidic Chip for Single-Cell Isolation

Euisik Yoon (PI), Young-Ji Kim, Jaehoon Chung, Hyung-Kew Lee
Electrical & Computer Engineering, University of Minnesota
NNIN Facility utilized: Nanofabrication Center

- Microfluidic Chip for Single-Cell Isolation
 - ◆ Composed of 3 step operation: trapping, loading and isolation
 - ◆ Single-cell isolation provides identical cell culture environment to each single-cell

- MAJOR OBSERVATIONS

- ◆ Multiple single-cells are successfully trapped at capture sites, loaded into microwells and completely isolated without leakage.

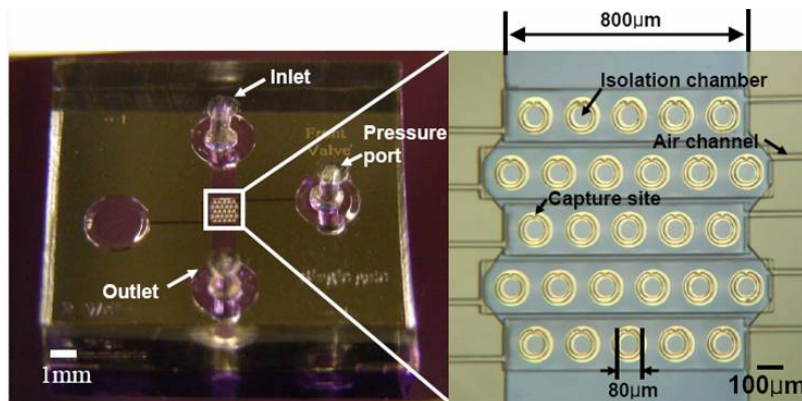


Fig. 1. Fabricated Microfluidic Chip

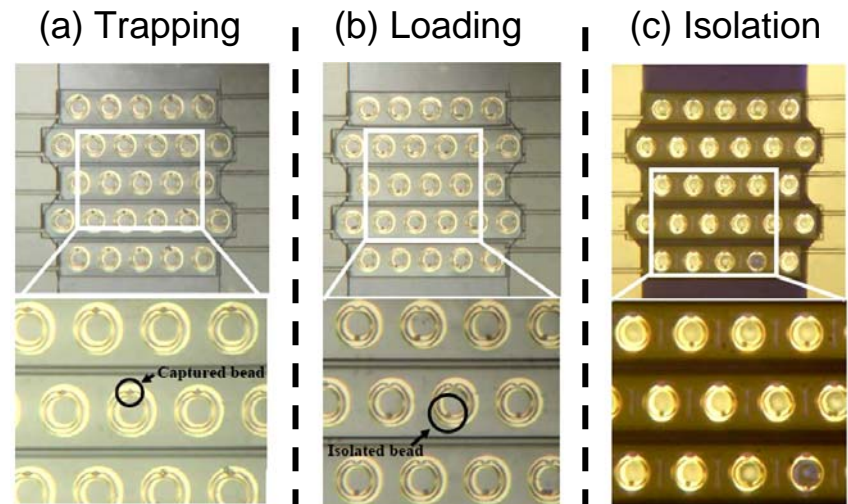


Fig. 2. Operation of device

- Publications

- ◆ Y.-J. Kim, J. Chung, H.-K. Lee and E. Yoon, "Microfluidic Array Chip for Single Cell Isolation using Two-Way Pneumatic Actuation," IEEE International Conference on Micro Electro Mechanical Systems (MEMS 2008), Conference Proceeding pp. 14-17, January 13-17, 2008