

CURRICULUM VITAE

NAME: Kazuo HOSOKAWA 細川和生

EDUCATION: 1983-1887, The University of Tokyo, Department of Mechanical Engineering
1990-1996, Graduate Course, The University of Tokyo

DEGREES: Dr. Engineering (1996), The University of Tokyo (東京大学)



APPOINTMENTS:

1996-1999: Special Postdoctoral Researcher, Biochemical Systems Lab. (生化学システム研究室), RIKEN
1999-2001: Researcher, Mechanical Engineering Laboratory (機械技術研究所), AIST
2001- : Senior Research Scientist, Bioengineering Laboratory (前田バイオ工学研究室), RIKEN

ACADEMIC ACTIVITIES:

Membership: The Chemical Society of Japan
The Japan Society of Mechanical Engineers
The Institute of Electrical Engineers of Japan

PUBLICATIONS (selected):

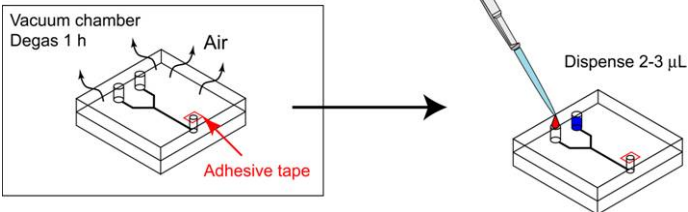
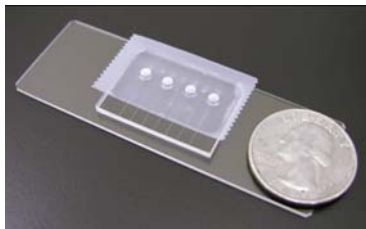
- 1) Inoue A, Han A, Makino K, Hosokawa K & Maeda M: SNP genotyping of unpurified PCR products by sandwich-type affinity electrophoresis on a microchip with programmed autonomous solution filling. **Lab Chip** 9: 3297-3302, 2009
- 2) Hosokawa K, Omata M & Maeda M: Immunoassay on a power-free microchip with laminar flow-assisted dendritic amplification. **Anal. Chem.** 79: 6000-6004, 2007
- 3) Hosokawa K, Omata K, Sato K & Maeda M: Power-free sequential injection for microchip immunoassay toward point-of-care testing. **Lab Chip** 6: 236-241, 2006
- 4) Ito T, Inoue A, Sato K, Hosokawa K & Maeda M: Autonomous polymer loading and sample injection for microchip electrophoresis. **Anal. Chem.** 77: 4759-4764, 2005
- 5) Hosokawa K, Sato K, Ichikawa N & Maeda M: Power-free poly(dimethylsiloxane) microfluidic devices for gold nanoparticle-based DNA analysis. **Lab Chip** 4: 181-185, 2004

Power-Free Microfluidic Pumping

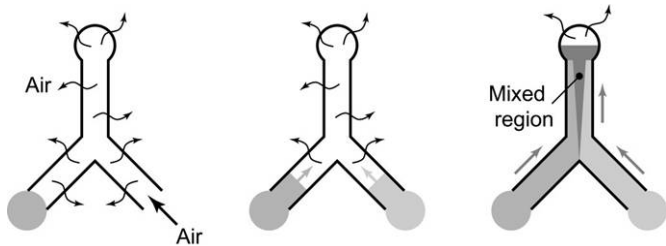
Microfluidic chips (microchips) are small plates containing microchannels. Microchips are useful for chemical analysis. I invented a fluid pumping method for microchips without external power sources, and have been exploring the applications of the power-free pumping method.

Technology

Image of a power-free microchip.



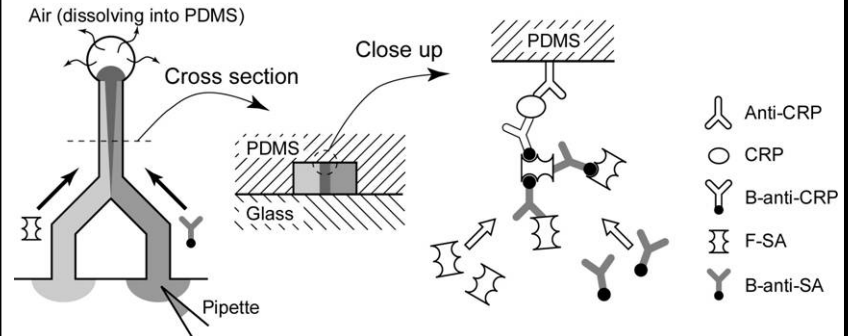
Operation of the power-free microchip.



Principle of the power-free microchip.

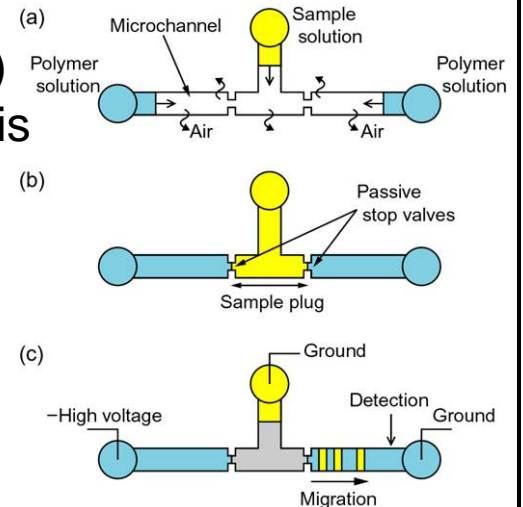
Lab Chip **2004**, 4, 181.

Application (1) Immunoassay



Lab Chip **2006**, 6, 236; *Anal. Chem.* **2007**, 79, 6000.

Application (2) Electrophoresis



Anal. Chem. **2005**, 77, 4759; *Anal. Chem.* **2007**, 79, 2168.