

## FLUIDICS and FLUCOME



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FLUIDICS is the combined word of Fluid and Logic. It performs logical judgment based on the information from sensor by using the various fluid phenomena and, the fluid actuator can be operated. The visualization method of the flow inside of FLUIDICS that is flip-flop element (the adhesion system element) and the laminar flow proportional element by using a Coanda effect was variously proposed. The author made visualization of the inclination jet stream by ozone method.

FULCOME is one of the important events of the international conference regarding in fluid measurement, control and visualization. Many famous professors and researchers actively have been participated in this conference. The first FULCOME1985 was held in the national education hall in JAPAN. At that time, FLUIDICS was over the one's best days, and was studied by many researchers.

In 1988, professor R. F. Boucher of Sheffield University in England was the chairman, and many lectures that related in FLUIDICS were performed. Dr Tipetts, the researcher of the Vortex type FLUIDICS, announced the FLUIDICS for the nuclear power plant. This Vortex type FLUIDICS is used widely in the sequence control of the automatic canning machine, ball bearing inner diameter automatic choice machine, the drainage control unit of surface control or the nuclear power generation system and so on.

FULCOME1991 was held in U.S. San Francisco and became the place of the announcement of the top information of the world regarding the fluid measurement, control and visualization. In recent years, unfortunately FLUIDICS is becoming past research, but the physics phenomenon and various visualization techniques clarified by FLUIDICS are used enough now.

Figure 1 shows the non-contact transportation of the object that is sensitive to a stain such as the semiconductor wafer by the vortex cup. The transportation consumption energy by vortex cup became one fourth or one fifth than Bernoulli chuck that was suggested conventionally. There is a characteristic in that the object can be transported by non-contact near the stability equilibrium point.

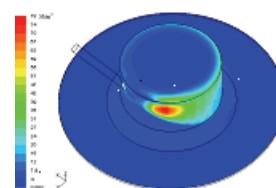


Fig. 1

After obtaining luck to participate in the first visualization symposium in the Institute of Space and Aeronautical of Tokyo University in 1973, being relations for 36 years to the theme with an interesting fluid measurement, control and visualization are favors of FLUIDICS and FLUCOME.

*Managing Editors*

Uemura, T. and Kagawa, T.

**Cover Photo**

**Laboratory-scale blast wave phenomena - optical diagnostics and applications**

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This figure shows simultaneous visualization of color schlieren method and double exposure infinite fringe holographic interferometry of spherical shock wave generated by exploding a 10 mg silver azide pellet with pulse laser beam irradiation on it. The color tune represents density gradient and the fringe pattern represents density distribution. A pronounced jet of combustion products is generated in the direction of laser irradiation.