

||||| 小特集 1 : マランゴニ対流 |||||  
(解説)

## 低 $Pr$ 数流体液柱の振動マランゴニ対流遷移過程の実験研究

林田 均<sup>A</sup>・松本 聡<sup>A</sup>・夏井秀定<sup>B</sup>・依田真一<sup>A</sup>・今石宜之<sup>C</sup>

### Experimental Study on Transition to Oscillatory Thermocapillary Flow in the Half-Zone Liquid Bridge of Low Prandtl Number Fluid

Hitoshi HAYASHIDA<sup>A</sup>, Satoshi MATSUMOTO<sup>A</sup>, Hidesada NATSUI<sup>B</sup>,  
Shinichi YODA<sup>A</sup> and Nobuyuki IMAISHI<sup>C</sup>

#### Abstract

The experimental study on thermocapillary convection of low Prandtl number fluid was carried out to investigate the transition behavior to oscillatory flow. The half-zone liquid bridge of molten tin was used as a test configuration. It could be experimentally detected that the axisymmetric steady flow changes to three-dimensional steady one with increasing the temperature difference between hot and cold disks. At higher temperature difference, oscillatory transition was also observed. Aspect ratio dependence on critical Marangoni number was made. The experimental result of a first critical Marangoni number agreed very well with numerical one.