

## Numerical and Experimental Investigation of Fluids Motion in the Thermocapillary

박소은, 윤도영\*  
광운대학교  
(yoondy@kw.ac.kr\*)

Microfluids has been recently emerging research fields according to the rapid improvement of MEMS technology. Because the behavior of microfluids is different from that of the traditional or macro fluids such as invisible measurement and etc., it is desirable that the research of microfluidics using the CFD should be achieved. Especially, it is important to analyze the fluids motion induced by temperature-dependence because thermocapillary migration could be used as pump which could migrate fluids in fields of MEMS. For the experiment in this study, nickel wire and power supply were employed to provide heat flux in the capillary and the data acquisition system coupled with Labview package was equipped to acquire temperature data at each position throughout the capillary. In addition, the behavior of fluids motion was investigated by the CCD camera in real-time. In this proposed study, we will investigate the feasibility of lubrication approximations by comparing to the results of experiment. This study will be useful information as a reasonable method to accurately control microfluids and to exactly analyze their behavior than any other models.