Abstract Submitted
for the DFD05 Meeting of
The American Physical Society

Transition in Internally Heated Convection YUJI TASAKA, YOHICHI KUDO, YASUSHI TAKEDA, Hokkaido University, TAKATOSHI YANAGISAWA, IFREE, JAMSTEC — Natural convection induced by internal heat generation in a shallow fluid layer was investigated experimentally. Internal heat generation was realized by passing electric current through ionic liquid. Kalliroscope flakes and thermo-chromic liquid crystal were utilized to clarify a transition of the convection with respect to the Rayleigh number, R_{I}. Visualized flow pattern at higher Rayleigh number show two types of deformed cell shape, double cell structure, which has a small cell in a large cell, and spoke like cell structure, where descending flow neat the center of a cell spread like a spoke. Visualized temperature field was converted to temperature field in order to investigate the transition quantitatively. Variation of horizontal temperature fluctuation with respect to R_{I} may show critical Rayleigh number for the transition.

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Date submitted: 01 Aug 2005 Electronic form version 1.4