

Abstract Submitted  
for the DFD09 Meeting of  
The American Physical Society

**Dynamics of rotating high viscous droplet by using electrostatic levitator** TOMOYUKI MAEKAWA, Tsukuba University, SATOSHI MATSUMOTO, Japan Aerospace Exploration Agency, YUTAKA ABE, AKIKO KANEKO, Tsukuba University, TADASHI WATANABE, Japan Atomic Energy Agency, KATSUHIRO NISHINARI, University of Tokyo — The electrostatic levitation is one of the containerless processing techniques. Thermo-physical properties of extreme high temperature molten metals have been measured with an oscillating drop method based on linear approximations. For example, a viscosity has been estimated from the damping constant of oscillation after the deformation imposed. However, this method is limited to the low viscosity fluid because the oscillation is not excited on viscous liquid drop. Thus, the objective is to develop a new method to measure the wide range of viscosity liquid. In the present study, several different droplets with different viscosity were levitated by the electrostatic force. Drop deformation was imposed applying rotation. Dynamics of rotating droplet was investigated. The time dependence of drop midpoint radius for drop breakup when the rotation speed increased was experimentally measured. The effect of viscosity on the deformation was made clear.

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Date submitted: 05 Aug 2009

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