

Abstract Submitted  
for the MAR06 Meeting of  
The American Physical Society

**Study of structure and thermophysical properties of molten BaGe by using electrostatic levitation technique** AKIKO ISHIKURA, Gakushuin University, TADAHIKO MASAKI, TAKEHIKO ISHIKAWA, Japan Aerospace Exploration Agency, NORIYUKI KOIKE, Chiba Institute of Technology, SHINJI KOHARA, Japan Synchrotron Radiation Research Institute (SPring-8/JASRI), AKI-TOSHI MIZUNO, MASAHIITO WATANABE, Gakushuin University — BaGe alloys with two compositions around their eutectic point form open framework structures called clathrate structure. However, the formation mechanism of clathrate structure has not yet been clarified due to lack of study and understanding of their liquid state structure and properties. Therefore, in order to clarify the formation mechanism of the clathrate structure, thermophysical properties (density, surface tension, and viscosity) of BaGe alloys melts around eutectic compositions were measured by using the electrostatic levitation (ESL) technique and also the structure of them was observed by using the high-energy X-ray diffraction method combined with the ESL. We found that from experimental results, the short range order based on the clathrate structure would exist even in the liquid state at the clathrate forming compositions.

Akiko Ishikura  
Gakushuin University

Date submitted: 03 Dec 2005

Electronic form version 1.4