

Sample of Proceedings for the International Forum at the JAST

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1. Introduction

Measurement of disjoining pressure of a molecularly thin lubricant film with a micro fabricated groove has been demonstrated. The meniscus shape of a thin film on the groove was measured by atomic force microscopy, and the disjoining pressure was obtained from the Laplace pressure that was obtained from the curvature of the meniscus. The measured relationship between the disjoining pressure on the perfluoropolyether lubricant on a silicon substrate and the film-thickness agrees well with theoretical results. Moreover, we have demonstrated that the surface property change can be evaluated by the method.

2. Materials and methods

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3. Results and discussion

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Table 1 Specifications of bearings

Sample number	1	2	3
Radius [inch]	3/8		11/32
Number of asperity [asperities/mm ²]	330	365	

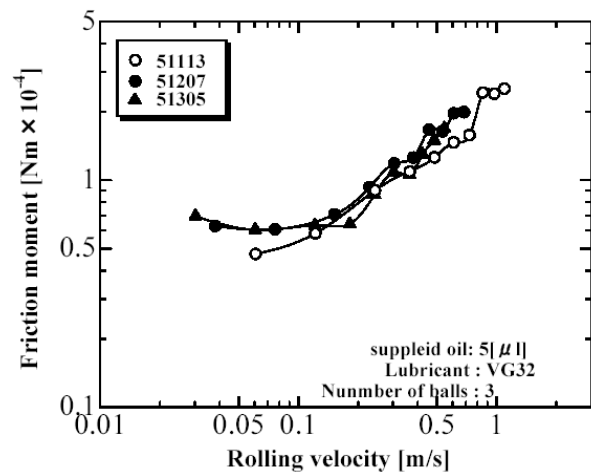


Fig. 1 Experimental result