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Developing A Sensing System for the Measurement of Oxygen Concentration in Liquid Pb-Bi Eutectic: Quarterly Progress Report (May. 01 – July 31, 2003)

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Quarterly Progress Report

(May. 01 – July 31, 2003)

Developing A Sensing System for the Measurement of Oxygen Concentration in Liquid Pb-Bi Eutectic

Principle Investigators:

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Developing A Sensing System for the Measurement of Oxygen Concentration in Liquid Pb-Bi Eutectic

Introduction

The report for Y01 has been prepared and submitted. The final part of our apparatus, the N3Si4 stirrer, was received by the end of May. The assembly of the apparatus has almost been completed. The control plan for our apparatus has been revised. To run FLUENT, a high-end Unix-based Sun workstation has been acquired. Plan has been made to ship our apparatus to LANL.

Personnel

Principal Investigators:

Dr. Yingtao Jiang (Electrical and Computer Engineering)

Dr. Bingmei Fu (Mechanical Engineering)

Dr. Woosoon Yim (Mechanical Engineering)

Professional

Dr. Peng Guo (Mechanical Engineering)

Students:

Mr. Ramkumar Bhavani Sivaraman (Electrical and Computer Engineering)

Mr. Xiaolong Wu (Electrical and Computer Engineering)

Management Progress

Expenditures incurred during this quarter are within the target amount allocated.

Management Problems

Due to various reasons, we shall not be able to conduct our experiment in campus. So plan has been made to ship the apparatus to LANL, and a couple of students shall be working, with a proper supervision from our LANL collaborators, in LANL. The students have been waiting for their security clearance.

Technical Progress

We have completed most of the assembly work of the apparatus. And it is ready to be shipped to LANL.

We have installed the software FLUENT into the newly acquired SUN server. Some preliminary simulation results on 3-D have been obtained for a simplified model.

An initial draft of a Master thesis has been submitted to the faculty researchers for review.

Technical Difficulties

The 3-D simulation shall be continued with more sophisticated software such as FLUENT.

Plans for the Next Quarter

Experiment shall be performed in LANL on both UNLV and LANL setups.

One student shall defend his M. Sc. thesis some time next quarter.

A replacement to Dr. Peng Guo shall be sought.

One new Ph. D. student shall start his simulation work in Sept.