

21st COE Seminar Series #15

Department of Materials Engineering
The University of Tokyo

Development of Low Temperature Superconducting conductors – Direct Reduction of Nb-based superconducting alloys

by

Dr. Bartek A. Glowacki

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February 5, 2004 15:00-

**1st Conference Room, Institute of Industrial Science
(生産技術研究所第 1会議室: 講演会後、研究交流会開催予定)**

"Development of Low Temperature Superconducting conductors
- Direct Reduction of Nb-based superconducting alloys"

B.A. Glowacki , S.C. Hopkins, K.S. Tan and A. Cox

The direct electrochemical reduction of oxides, developed in Cambridge, enables the production of oxygen free alloys and intermetallic compounds directly from stoichiometric oxide mixtures. This is of particular interest for the low cost production of superconducting materials. However, a full understanding of the mechanism of reduction even for oxides of a single metal is not yet available, and the details of intermetallic formation are even less clear. This is particularly true for materials like Nb₃Sn, for which the pure elements have very different melting points. Current understanding of the mechanism of electrochemical reduction is reviewed, the results of recent work presented and plans for further experimentation discussed.

Organizer: Prof. Toru H. OKABE (岡部 徹)

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