

**The 2nd Workshop
on
Reactive Metal Processing**
– Recent Progress of Materials Processing –

November 16-17, 2006,
Institute of Industrial Science,
The University of Tokyo, Tokyo, Japan



Supported by Core to Core Program “Active Metal Processing”,
Japan Society for the Promotion of Science (JSPS)

Contents

Workshop Program	II
Digest of Oral Presentations	IV
Digest of Poster Presentations	V
List of Participants and Contact Information	VI

Workshop Program

November 16 (Thursday), 2006

Convention Hall (2F), Building A

14:00–14:10

Opening Remarks

Prof. T.H. Okabe, The University of Tokyo

PM1 Session Chair: Prof. T. Uda

14:10–15:10

“Recent Process in the Development of New Electrochemical Processes for the Production of Titanium”

Prof. D.J. Fray, Cambridge University

15:10–16:10

“About Norsk Titanium, and Recent Process on Titanium Research”

Dr. K. Dring, Norsk Titanium AS

16:10–16:20

Coffee Break

PM2 Session Chair: Prof. T.H. Okabe

16:20–17:20

“Calcium in Molten Salts: A Chemical Panacea or an Electrochemical Disaster”

Prof. G.J. Kipouros, Dalhousie University

17:20–18:20

“Towards Sustainable Metals Production by Electrochemical Processing in Oxide Melts”

Prof. D.R. Sadoway, Massachusetts Institute of Technology

18:20–18:30

Close Remarks

Prof. T.H. Okabe, The University of Tokyo

18:30–20:30

Discussion and Reception at Foyer (2F), Building A

Poster Session (Okabe Lab, Morita Lab, and Maeda Lab etc.)

November 17 (Friday), 2006

Convention Hall (2F), Building A

Social event

- | | |
|-------------|--|
| 10:00–11:00 | Lab Tour at IIS
(Prof. Maeda's group, Prof. Morita's group, and Prof. Okabe's group) |
| 11:00–12:00 | Free Discussion |
| 12:00–13:30 | Workshop Lunch |

Digest of Oral Presentations

“Recent Process in the Development of New Electrochemical Process for the Production of Titanium”,

D.J. Fray

Document A

“About Norsk Titanium, and Recent Progress on Titanium Research”,

K. Dring

Document B

“Calcium in Molten Salts: A Chemical Panacea or an Electrochemical Disaster”,

G.J. Kipouros

Document C

“Towards Sustainable Metals Production by Electrochemical Processing in Oxide Melts”,

D.R. Sadoway

Document D

Digest of Poster Presentations

“New Titanium Production Process by Magnesiothermic Reduction of Titanium Subhalides”,

O. Takeda and T.H. Okabe

Document E

“Electrochemical Pulverization of Bulk Metal for Producing Fine Niobium Powder”,

B. Yuan and T.H. Okabe

Document F

“Selective Chlorination of Titanium Ore and Production of Titanium Powder from Titanium Ore by Preform Reduction Process (PRP)”,

H. Zheng and T.H. Okabe

Document G

“Production of Scandium and Al-Sc Alloy by Using CaCl₂ Molten Salt”,

M. Harata and T.H. Okabe

Document H

List of Participants and Contact Information

Akashi, Kazuo, Professor Emeritus, University of Tokyo

Akiyama, Shun-ichiro, Executive Director, Japan Titanium Society

Dring, Kevin, Technical Researcher, Norsk Titanium AS

Fuwa, Akio, Professor, Waseda University

Fray, Derek J., Professor, Department of Materials Chemistry, Cambridge University

Han, Woong-Hee, Graduate Student, Institute of Industrial Science, University of Tokyo

Hara, Takehiro, Ministry of Economy, Trade and Industry

Harata, Masanori, Graduate Student, Institute of Industrial Science,
University of Tokyo

Hasegawa, Nozomu, Mitsubishi Materials Corporation

Horike, Chiyoko, Graduate Student, Institute of Industrial Science,
University of Tokyo

Hosokawa, Yu, Graduate Student, Institute of Industrial Science, University of Tokyo

Iiduka, Masatoshi, Central Research Institute of Electric Powder Industry

Ishigai, Shinya, Kobe Steel, Ltd.

Itasaka, Osamu, ULVAC Materials, Inc.

Ito, Yasuhiko, Professor, Doshisha University

Katayama, Yasushi, Keio University

Kawakami, Masahiro, Professor, Toyohashi University of Technology

Kipouros, Georges J., Professor, Department of Materials Engineering, Faculty of Engineering, Dalhousie University

Kousai, Hitoshi, Researcher, Tanaka Kikinzoku Kogyo K.K.

Kosemura, Susumu, Principal Engineer, Toho Titanium Co., Ltd.

Koyama, Kazuya, Researcher, National Institute of Advanced Industrial Science and Technology (AIST)

Kubo, Junichi, Graduate Student, Institute of Industrial Science, University of Tokyo

Masuko, Noboru, Professor Emeritus, University of Tokyo

Matsuoka, Ryosuke, Cabot Supermetals K.K.

Matsuura, Haruaki, Research Associate, Tokyo Institute of Technology

Mi, Guomin, Kyousetsu Ltd.

Miyazaki, Yoshimasa, Manager, Nippon Steel Corporation

Mori, Ken-ichi, Senior Engineer, Nippon Steel Corporation

Nagai, Takashi, Graduate Student, Institute of Industrial Science, University of Tokyo

Nakada, Hideko, Graduate Student, Tokyo Institute of Technology

Nikami, Kaoru, NKR

Ogasawara, Yasushi, Graduate Student, Institute of Industrial Science, University of Tokyo

Oi, Taiji, Graduate Student, Institute of Industrial Science, University of Tokyo

Okabe, Susumu, General Secretary, Mining and Materials Processing Institute of Japan

Okabe, Toru H., Associate Professor, Institute of Industrial Science,
University of Tokyo

Okura, Takahiko, Professor, Akita University

Ono, Yuichi, Technical Researcher, Toho Titanium Co., Ltd.

Powell, Adam C. IV, Thomas B. King Assistant Professor of Materials Engineering,
Massachusetts Institute of Technology

Saegusa, Kunio, Senior Engineer, Sumitomo Chemical Co., Ltd.

Saito, Masaru, Arumu Publish Co., Ltd.

Sadoway, Donald R., John F. Elliott Professor of Materials Chemistry,
Massachusetts Institute of Technology

Serizawa, Nobuyuki, Keio University

Sasaki, Hideaki, Graduate Student, Institute of Industrial Science, University of Tokyo

Sasaki, Toru, Associate Professor, Institute of Industrial Science, University of Tokyo

Sato, Nobuaki, Associate Professor, Institute of Multidisciplinary Research for
Advance Materials, Tohoku University

Sato, Yuzuru, Professor, Department of Metallurgy, Graduate School of Engineering,
Tohoku University

Shindo, Yuichiro, Nippon Mining and Metals Co., Ltd.

Shirayama, Sakae, Undergraduate, University of Tokyo

Takahata, Masahiro, Nippon Mining & Metals Co., Ltd.

Takeda, Osamu, Research Associate, Department of Metallurgy, Graduate School of Engineering, Tohoku University

Takenaka, Toshihide, Associate Professor, Department of Production Systems Engineering, Toyohashi University of Technology

Tsumura, Masashi, Graduate Student, Waseda University

Tsunashima, Sakae, Honda R&D Co., Ltd.

Uda, Tetsuya, Associate Professor, Materials Science and Engineering, Kyoto University

Watanabe, Kazuki, Graduate Student, Keio University

Watanabe, Tadashi, Professor, Institute of Industrial Science, University of Tokyo

Yagi, Shunsuke, Graduate Student, Kyoto University

Yamaguchi, Shun-ichiro, General Manager, Toho Titanium Co., Ltd.

Yamaguchi, Masanori, Senior Engineer, Toho Titanium Co., Ltd.

Yamaguchi, Makoto, Manager, Sumitomo Titanium Corporation

Yamamoto, Shinya, Sumitomo Titanium Corporation

Yanagisawa, Tomoko, Tanaka Kikinzoku Hanbai K.K.

Yasuda, Kouji, Postdoctoral Fellow, Kyoto University

Yoshino, Masayori, Undergraduate, Wasesa University

Yuan, Boyan, Graduate Student, Institute of Industrial Science, University of Tokyo

Zheng, Haiyan, Graduate Student, Institute of Industrial Science, University of Tokyo

Administrative Support Staff

Higuchi, Kazunori, Administrative Staff, Research Cooperation Division II,
International Program Department, Japan Society for the Promotion of Science

Mitsui, Sachiko, Administrative Staff, Research Cooperation Division II, International
Program Department, Japan Society for the Promotion of Science

Miyazaki, Tomoko, Administrative Staff, Institute of Industrial Science,
University of Tokyo

Oshima, Junji, Administrative Staff, Institute of Industrial Science,
University of Tokyo

Ono, Hiroko, Administrative Staff, Institute of Industrial Science, University of Tokyo

Yamamoto, Mieko, Administrative Staff, Institute of Industrial Science,
University of Tokyo