

Tuesday 30 June 2015 (Day 2)

Auditorium A

09:30~12:00

Plenary Lecture 1 - 4 -----

Chairpersons: *M. IGARASHI* (Nippon Steel & Sumitomo Metal Corporation, Japan)

K. KIMURA (National Institute for Materials Science, Japan)

09:30~ 1P-01 **Past, Present and Future Roles of JSPS 123rd Committee for the R & D of Heat-resistant Materials and Alloys in Japan**

Masao TAKEYAMA

10:00~ 1P-02 **Progress of High Temperature Alloys in Japan**

Michio OKABE

10:40~ 1P-03 **Contribution of High-Temperature Materials to Energy Mix for Achieving S+3Es in Japan**

Akito NITTA

11:20~ 1P-04 **Indonesia's Challenges To Built 35.000 MW Power Plant in 2015-2019**

Susilo SISWOUTOMO

14:00~15:15

Heat Resisting Steels 1 Fundamental 1 (New Ferritic Steels) -----

Chairperson: *H. OKADA* (Nippon Steel & Sumitomo Metal Corporation, Japan)

14:00~ 1H-01 **Keynote On the Nucleation and Growth of Laves Phase Particles in Tempered Martensite Ferritic Chromium Steels**

M.I. ISIK, A. KOSTKA, A. AGHAJANI, G. EGgeler

14:25~ 1H-02 **Invited Microstructure Control Using Laves Phase Precipitation for Further Improving Creep Resistance of Ferritic Steels**

Satoru KOBAYASHI, Takaaki HIBARU, Kazuhiro KIMURA

14:50~ 1H-03 **Evolution of Microstructures of High Temperature Fully Ferritic Steels**

J. LOPEZ BARRILAO, B. KUHN, M. TALÍK, E. WESSEL

17:20~ 19:00

Heat Resisting Steels 2 Fundamental 2 (Austenitic Steels) -----

Chairperson: *G. EGgeler* (Ruhr-Universität Bochum, Germany)

- 17:20~ 1H-04 **Invited** Power Austenite - A sigma-phase hardened and grain boundary strengthened heat resistant stainless steel
M. SPIEGEL, J. MENTZ, J. KONRAD, P. SCHRAVEN
- 17:45~ 1H-05 **Invited** Effects of Phosphorus Addition on Formation of Carbide in Austenitic Heat Resisting Steels
Katsuhiko OHISHI, Toshihiro UEHARA, Masao TAKEYAMA
- 18:10~ 1H-06 **Experimental and Molecular Dynamics Simulations of Linear Thermal Expansion Coefficient of Fe-Ni-Cr Austenitic Steels**
Shun OINUMA, Kiyoshi IMAI, Yujiro NAKATANI, Reki TAKAKU, Kenichi IMAI, Satoshi IZUMI, So TAKAMOTO
- 18:35~ 1H-07 **GB Precipitation Hardening and Its Effect on Heat-to-Heat Variation in Creep Life of JIS SUS 347HTB Stainless Steel**
Fujio ABE

Auditorium B

14:00~15:40

Superalloys 1 Single Crystal -----

Chairperson: *R. C. REED* (University of Oxford, UK)

14:00~ 1S-01 **Invited Material Technology Evolution and Living Issues of Heavy-Duty Gas Turbine Hot Gas Path Components**

Yomei YOSHIOKA

14:25~ 1S-02 **Development of Ni-base Single-Crystal Superalloy for High Efficiency Gas Turbine blade**

Hidetaka OGUMA, Masaki TANEIKE, Ikuo OKADA, Tadaharu YOKOKAWA, Hiroshi HARADA

14:50~ 1S-03 **The Formation Mechanisms and Influencing Factors of Casting Defects for Nickel-Based Single Crystal Superalloys**

Lin LIU, Taiwen HUANG, Yafeng LI, Dejian SUN, Jun ZHANG, HengZhi FU

15:15~ 1S-04 **Development of the advanced TBC for High Efficiency Gas Turbine**

Yoshifumi OKAJIMA, Taiji TORIGOE, Masahiko MEGA, Ikuo OKADA, Junichiro MASADA, Keizo TSUKAGOSHI

17:20~19:00

Superalloys 2 Fundamental 1 (Phase Diagram and Kinetics) -----

Chairperson: *A. SUZUKI* (GE Global Research, USA)

17:20~ 1S-05 **Keynote Rapid Acquisition of 3D Data at the Mesoscale: Rapid TriBeam Tomography for Material Property Modeling**

Tresa M. POLLOCK

17:45~ 1S-06 **Application of 3D Phase Diagrams in Alloy Design**

Shuanglin CHEN, Fan ZHAN, Weisheng CAO, Chuan ZHANG, Jun ZHU

18:10~ 1S-07 **Evolution Simulation of γ' Precipitates in Alloy 720 Li**

Takaaki HARA, Yoshiharu KANEGAE, Hiroshi MORIYA, Chunyu AOKI, Tomonori UENO

18:35~ 1S-08 **Precipitation Simulation of Nickel-base Superalloys and Aluminum Alloys in the Framework of ICME**

Fan ZHANG, Weisheng CAO, Shuanglin CHEN, Chuan ZHANG, Jun ZHU ...

Conference Room 1

14:00~ 15:40

Advanced Materials & Processing 1 TiAl & Ti Alloys 1 -----

Chairperson: *S. NAKA* (ONERA, France)

- 14:00~ 1A-01 **Invited Current Status and Issues of Forged TiAl Alloys**
Satoshi TAKAHASHI, Keiji KUBUSHIRO, Masao TAKEYAMA
- 14:25~ 1A-02 **Challenges of Utilizing TiAl Alloys for Industrial Gas Turbine Blades**
Ji ZHANG, Xiwen ZHANG, Chunlei ZHU
- 14:50~ 1A-03 **In-Situ Monitoring of Thermal Treatments and Hot Deformation of a γ -TiAl Alloy by High Energy X-Ray Diffraction**
Florian PYCZAK, Marcus RACKEL, Heike GABRISCH, Uwe LORENZ, Andreas SCHREYER, Andreas STARK
- 15:15~ 1A-04 **Effect of Different Strain Rates on Microstructure and Mechanical Properties of Ti-Al-Nb Alloys Subjected to Plain Strain Compression Test**
Anna JASTRZEBSKA, K.S. SURESH, T. KITASHIMA, Y. YAMABE-MITARAI, Z. PAKIELA

17:20~ 19:00

Advanced Materials & Processing 2 TiAl & Ti Alloys 2 -----

Chairperson: *F. PYCZAK* (Helmholtz-Zentrum-Geesthacht, Germany)

- 17:20~ 1A-05 **Phase Equilibria among β -Ti/ α -Ti/ γ -TiAl Phases at 1473 K and 1373 K in the TiAl Alloys with the Combined Addition of Transition Metals**
Hirotoyo NAKASHIMA, Satoru KOBAYASHI, Masao TAKEYAMA
- 17:45~ 1A-06 **Effect of Beta-Stabilizing Elements on Mechanical Properties and Oxidation Resistance of Near- α Ti Alloys**
T. KITASHIMA, K.S. SURESH, Y. YAMABE-MITARAI
- 18:10~ 1A-07 **Oxidation Behavior of High Temperature Ti Alloys**
Yoko YAMABE-MITARAI, Ryo ZEMPO, Tomonori KITASHIMA, Satoshi EMURA, Hideyuki MURAKAMI
- 18:35~ 1A-08 **Oxidation Resistance of Thermally Sprayed TiAl Based Coating**
Judyta SIENKIEWICZ, Maciej GIZYNSKI, Seiji KURODA, Hiroshi ARAKI, Hideyuki MURAKAMI, Krzysztof J. KURZYDŁOWSKI, Zbigniew PAKIELA