Second International Symposium on

Structural Intermetallics

Sunday, September 21, 1997

Opening Session: 8:00 PM

Introductory Remarks
Michael Nathal
Symposium Chairman
NASA Lewis Research Center

Symposium Keynote Address

J.C. Williams
General Electric Aircraft Engines
General Electric Company

Intermetallics for Structural Applications: Potenial, Reality and the Road Ahead

SEVEN SPRING MOUNTAIN RESORT

SEVEN SPRINGS

MOUNTAIN RESORT · CHAMPION, PA., 15622
814/352-7777

GENERAL INFORMATION

APPROPRIATE DRESS FOR THE CONFERENCE

Informal dress is expected at all symposium sessions and activities.

AUTHORS' BREAKFAST/COFFEE

Authors, of oral presentations, late news papers and posters, are requested to attend an authors' breakfast/coffee meeting on the day of their presentation. Tables will be set aside in the dining room for the authors and session chairs to become acquainted or renew old friendships and discuss any last minute changes. These meetings will be held from 7:00 AM to 8:15 AM Monday through Thursday morning. Please plan to attend on the day of your oral presentation.

CONFERENCE PROCEEDINGS

As part of the registration fee for ISSI-97, everyone has received a copy of the conference proceeding which contains the complete text of all the formally refereed oral and interactive presentations. If desired, additional copies of the proceedings can be purchased; these are available at the conference registration desk.

INTERACTIVE SESSIONS

Face-to-face Interactive sessions are scheduled for late Monday and Wednesday afternoons to allow in-depth discussions with the authors of work presented on individual posters. Please refer to the Program Schedule for the list of posters to be presented and their specific discussion times.

LATE NEWS PAPERS

to increase the timeliness and widen the participation in the Second International Symposium on Structural Intermetallics, a small number of abstracts have been selected for presentation as "Late News Papers." While these papers are not documented in the proceedings, posters describing the author's work will be on continuous display during the conference in the Exhibit Hall Annex and the authors will be available for discussion during the scheduled Wednesday afternoon interactive session.

LODGING

Guests may receive faxes while staying at Seven Springs at the Front Desk; Fax: 814-352-7911.
Hotel Check out time is 12:00 PM.

ORAL PRESENTATION SESSIONS

The ISSI-97 technical review committee has selected a number of papers for oral presentation and discussion. These talks will be given in the Exhibit Hall over seven sessions scheduled for Monday morning and evening, Tuesday morning and afternoon, Wednesday morning and evening, and Thursday morning. Please refer to the Program Schedule for the list of oral presentations and their specific time slots, and arrangements for slide preview location.

PANEL DISCUSSION

Following the conference banquet on Tuesday evening, a panel discussion will be convened to discuss the future of structural intermetallics. Refreshments will be served.

POLICY ON AUDIO & VIDEO RECORDING OF TECHNICAL APER PRESENTATIONS/SESSIONS

The Minerals, Metals & Materials Society (TMS) reserves the right to any audio and video reproduction of all presentation at every TMS sponsored meeting. Recording of sessions (audio, video, still photography, etc.) intended for personal use, distribution or copyright without the express written consent of TMS and the individual authors is strictly prohibited. A waiver release form may be obtained at the conference registration desk located in Hotel Lobby/Stag Pass.

SHUTTLE SERVICE

Complimentary departure shuttle service is scheduled on Thursday only and will depart Seven Springs at the following times. Sign up for the return shuttle service, indicating your preference of departure time, at the conference registration desk.

SOCIAL FUNCTIONS

A number of social functions have been scheduled to allow informal situations for friendship and technical discussions. These include:

Sunday Evening — A Reception will follow the Keynote Address.

Monday Evening — A Beer Bash immediately following the conclusion of the evening technical session.

Tuesday Evening — A Cocktail Hour will be held preceding the conference banquet and refreshments will be available during the Panel Discussion.

Wednesday Evening — A Hospitality Suite will be open after conclusion of the evening technical session.

Coffee Breaks — These are scheduled approximately midway through each of the seven oral presentation and two interactive sessions.

ACCOMPANYING PERSONS PROGRAM/TOURS

The Minerals, Metals & Materials Society and Complete Concept have arranged customized tours for attendees and/or accompanying persons during the conference. All tour tickets purchased will be held in your name for pickup at the tour desk located at the conference registration area.

A staff person from Complete Concept will be available at the conference registration area on Sunday, September 21 from 12:00 Noon until 6:00 PM to book reservations for tours that still have availability. Tickets purchased on-site will be assessed a surcharge of $2.00 per ticket.

All tours will depart from the Center Lobby of the hotel.

MEMBERSHIP

Attention Non-TMS Member Attendees

Welcome to membership in TMS! That's right! You are now a member of TMS because your non-member registration fee includes a complimentary membership in TMS for the remainder of 1997! You will now receive a six month subscription to JOM, industry's most read journal of materials science and technology…now you can enjoy immediate benefits, such as discounts on TMS published proceedings…and have easy access to the World Wide Web (WWW) with TMS On-Line…plus an array of other membership benefits and services.

A completed membership application is needed to process your membership. Drop it off at the conference registration desk, and receive your new member packet on the spot, or mail or fax it to TMS Headquarters (address printed on application), fax: 412-776-3770.

Take advantage of this special offer and start to enjoy your complimentary 1997 membership! **Submit your application NOW!**

This special offer is extended to first-time new TMS members, one time only, and applies only to NON-MEMBER registrants.

ISSI PROGRAM OUTLINE

Sunday, September 21, 1997

Arrival and Registration 12:00 PM - 7:00 PM ---------- Hotel Lobby
Dinner (at leisure) ------- 5:00 PM - 8:00 PM --- Main Dining Room
Keynote Address -------- 8:00 PM - 9:30 PM ---------- Exhibit Hall
Reception ---------- 9:30 PM - 11:00 PM ---------- Alpine Room

Monday, September 22, 1997

Registration ---------- 7:00 AM- 12:00 Noon ---------- Stag Pass
Breakfast (at leisure) --- 7:00 AM - 11:00 AM -- Main Dining Room
Slide Preview -------- 7:00 AM - 12:00 Midnight ---- Seasons Room
Authors' Coffee --------- 7:15 AM - 8:15 AM ---------- Dupre Room
Overview / General Session -
Part I ---------- 8:30 AM - 10:30 AM ---------- Exhibit Hall
Coffee Break ---------- 10:30 AM - 10:50 AM -- Exhibit Hall Annex
Overview / General Session -
Part II ---------- 10:50 AM - 1:00 PM ---------- Exhibit Hall
Lunch (optional) --------- 1:00 PM - 2:00 PM
Free Time ---------- 2:00 PM - 4:00 PM
Interactive Session A --- 4:00 PM - 6:00 PM ---- Exhibit Hall Annex
Dinner (at leisure) ------- 5:30 PM - 7:00 PM --- Main Dining Room
TiAl: Processing - Part I 7:00 PM - 8:20 PM ---------- Exhibit Hall
Coffee Break ---------- 8:20 PM - 8:30 PM ---------- Festival Hall
TiAl: Processing - Part II 8:30 PM - 10:20 PM ---------- Exhibit Hall
Beer Bash ---------- 10:20 PM - 12:30 AM ---------- Ski Lodge

Tuesday, September 23, 1997

Registration ---------- 7:00 AM- 12:00 Noon ---------- Stag Pass
Breakfast (at leisure) --- 7:00 AM - 11:00 AM -- Main Dining Room
Slide Preview -------- 7:00 AM - 12:00 Midnight ---- Seasons Room
Authors' Coffee --------- 7:15 AM - 8:15 AM ---------- Dupre Room
TiAl: Microstructure
& Properties - Part I 8:30 AM - 10:30 AM ---------- Exhibit Hall
Coffee Break ---------- 10:30 AM - 10:50 AM -- Exhibit Hall Annex
TiAl: Microstructure
& Properties - Part II 10:50 AM - 1:00 PM ---------- Exhibit Hall
Lunch (optional) --------- 1:00 PM - 2:00 PM
Ni_3Al and Iron Aluminides -
Part I ---------- 2:00 PM - 3:30 PM ---------- Exhibit Hall
Coffee Break ---------- 3:30 PM - 3:40 PM ---- Exhibit Hall Annex
Ni_3Al and Iron Aluminides -
Part II ---------- 3:40 PM - 5:30 PM ---------- Exhibit Hall
The Cocktail Hour ------- 6:00 PM - 7:00 PM ------- Convention Hall
Informal Banquet -------- 7:00 PM - 8:30 PM ------- Convention Hall
Panel Discussion -------- 8:30 PM - 10:30 PM ------ Convention Hall

Wednesday, September 24, 1997

Registration ---------- 7:00 AM- 12:00 Noon ---------- Stag Pass
Breakfast (at leisure) --- 7:00 AM - 11:00 AM -- Main Dining Room
Slide Preview -------- 7:00 AM - 12:00 Midnight ---- Seasons Room
Author's Coffee --------- 7:15 AM - 8:15 AM ---------- Dupre Room
Advanced Intermetallics -
Part I ---------- 8:30 AM - 10:30 AM ---------- Exhibit Hall
Coffee Break ---------- 10:30 AM - 10:50 AM -- Exhibit Hall Annex
Advanced Intermetallics -
Part II ---------- 10:50 AM - 1:00 PM ---------- Exhibit Hall
Lunch (optional) --------- 1:00 PM - 2:00 PM
Free Time ---------- 2:00 PM - 4:00 PM
Interactive Session B / Late News
Papers ---------- 4:00 PM - 6:00 PM ---- Exhibit Hall Annex
Bar-B-Q Dinner --------- 5:30 PM - 7:00 PM ---------- Ski Lodge
NiAl - Part I ---------- 7:00 PM - 8:20 PM ---------- Exhibit Hall
Coffee Break ---------- 8:20 PM - 8:30 PM ---- Exhibit Hall Annex
NiAl - Part II ---------- 8:30 PM - 10:30 PM ---------- Exhibit Hall
Hospitality Suite ---- 10:30 PM - 12:00 Midnight

Thursday, September 25, 1997

Breakfast (at leisure) --- 7:00 AM - 11:00 AM -- Main Dining Room
Authors' Coffee --------- 7:15 AM - 8:15 AM ----- Seasons 2 Room
TiAl: Properties
and Applications - Part I 8:30 AM - 10:30 AM -------- Exhibit Hall
Coffee Break ---------- 10:30 AM - 10:50 AM -- Exhibit Hall Annex
TiAl: Properties
and Applications - Part II 10:50 AM - 1:00 PM ------- Exhibit Hall
Symposium Close ---------- 1:00 PM

"at leisure" - indicates meal is provided through the lodging registration, but informally taken at participants discretion. The Tuesday Banquet and Wednesday Bar-B-Q are provided through hotel registration.

"optional" - indicates meal not provided, but hotel food service is available at participants discretion.

PROGRAM SCHEDULE

Keynote Address, 8:00 PM Sunday Evening, September 21, 1997

Intermetallics for Structural Applications: Potential, Reality and the Road Ahead
J.C. Williams, G.E. Aircraft Engines, Cincinnati, OH 45241, USA

Overview/General Session, Monday Morning, September 22, 1997

Session Chairs: Dr. Man Yoo, Oak Ridge National Lab, PO Box 2008, Oak Ridge TN 37831-6115; Dr. Mohamed Nazmy, ABB Power Generation, Mat. Tech. KWRM, Baden, Switzerland CH 5401

8:30 AM, INVITED PAPER
Ductility and Toughness Considerations in Intermetallics
Y. Kimura, D.P. Pope, Department of Materials Science and Engineering, University of Pennsylvania, Philadelphia, PA 19104, USA

9:00 AM, INVITED PAPER
Constraint Effects on Fracture Toughness of Intermetallic Alloys and In-Situ Composites
K.S. Chan, Southwest Research Institute, P.O. Drawer 28510, San Antonio, TX 78228-0510, USA

9:30 AM, INVITED PAPER
Surface Damage Due to Impact and Fatigue Strength Reduction in Gamma Titanium Aluminides
P.S. Steif, J.W. Jones[1], T. Harding[1], M.P. Rubal, V.Z. Gandelsman, N. Biery[2], T.M. Pollock[2]; Department of Mechanical Engineering, [2]Department of Material Science and Engineering, Carnegie Mellon University, Pittsburgh, PA 15213; [1]Department of Material Science and Engineering, University of Michigan, Ann Arbor, MI 48109, USA

10:00 AM, INVITED PAPER
Fatigue Crack Growth in Intermetallics
N.S. Stoloff, Rensselaer Polytechnic Institute, Troy, NY 12180-3590, USA

10:30 AM, COFFEE BREAK

10:50 AM, INVITED PAPER
Mechanisms of Dislocation Creep in Single Phase Nickel and Titanium Aluminides
K.J. Hemker, W.D. Nix,* Department of Mechanical Engineering, Johns Hopkins University, Baltimore, MD 21218; *Department of Materials Science and Engineering, Stanford University, Stanford, CA 94305-2205, USA

11:20 AM, INVITED PAPER
Environmental Resistance of Intermetallics
L. Singheiser, Research Center Jülich, Institute for Materials in Energy Systems, 52425 Jülich, Germany

11:50 AM
Equilibrium Point Defects in NiAl and Similar B2 Intermetallics Studied by PAC
G.S.Collins, J. Fan, B. Bai*, Dept. of Physics, Washington State Univ., Pullman, WA 99164-2814, USA; *Now with North American Scientific, North Hollywood, CA, USA

12:15 PM
Characterization of Segregation in Nickel and Titanium Aluminides
M.K. Miller, D.J. Larson, K.F. Russell, Metals and Ceramics Division, Oak Ridge National Laboratory, Oak Ridge, TN 37831-6376, USA

12:40 PM
Vaporization Studies of Nickel and Titanium Aluminides
K. Hilpert, M. Albers, M. Eckert, D. Kath, Research Center Jülich, Institute for Materials in Energy Systems, 52425 Julich, Germany

Interactive Session A: Monday Afternoon, September 22, 1997

Ni_3Al and Iron Aluminides

1) How to Obtain Some Room Temperature Ductility of FeAl (B2) Intermetallic Alloys
A. Fraczkiewicz, A.-S. Gay, S. Launois, M. Biscondi, Ecole des Mines de Saint-Etienne, Centre SMS, 158 Cours Fauriel, 42-100 St-Etienne, France

2) Observation of Quenched-in Vacancies in the B2 Intermetallic Compound FeAl
T. Haraguchi, M. Kogachi, Department of Materials Science, College of Integrated Arts and Sciences, Osaka Prefecture University, Sakai 593, Japan

3) High Temperature Mechanical Properties and Microstructure of Fe3Al-Based Intermetallic Alloys
A. A. Couto, P.I. Ferreira, Instituto de Pesquisas Energéticas e Nucleares, Comissâo Nacional de Energia Nuclear, P.O. Box 11049-Sâo Paulo, SP, 05422-970, Brazil

4) Protective Coatings Based on FeAl Intermetallic Obtained by a Gas Detonation Method
Z. Bojar[1], W. Przetakiewicz[1], R.A. Varin[2], J. Bystrzycki[1,2], [1]Institute of Materials Technology and Applied Mechanics, Military University of Technology, Kaliskiego 2, Warsaw 01-489, Poland; [2]Department of Mechanical Engineering, University of Waterloo, Waterloo, Ontario, Canada N2L 3G1

Advanced Intermetallics and Composites

5) Environmental Effects on the Fracture Toughness of Ternary Cubic (Ll_2) Titanium Trialuminide Intermetallics
R.A. Varin, L. Zbroniec, Department of Mechanical Engineering, University of Waterloo, Waterloo, Ontario, Canada, N2L 3G1

6) Platinum Group Metals-Base Refractory Superalloys for Ultra-High Temperature Use
Y. Yamabe-Mitarai, Y. Ro, T. Maruko, T. Yokokawa, H. Harada,* National Research Institute for Metals, 1-2-1 Sengen, Tsukuba, Ibaaraki, 305, Japan; *Furuya Metals Co. Ltd., 1915 Morizoeshima, Shimodate, Ibaraki, 308, Japan

7) Structure-Property-Application Relationships in Ruthenium Aluminide RuAl
I.M. Wolff[1], G. Sauthoff[2], L.A. Cornish[3] H.DeV. Steyn[1], R. Coetzee[1], [1]Physical Metallurgy Division, Mintek, P. Bag X3015, Randburg, 2125 South Africa; [2]Max-Planck-Institut für Eisenforschung GmbH, Düsseldorf, D-40074, Germany; [3]University of the Witwatersrand, Johannesburg, South Africa

8) Effects of Al on Omega Formation in Transition Metal Intermetallic Alloys
G. Shao[1], E. Passa[1], P. Tsakiropoulos[1], A.P. Miodownik[1], D. N. Manh[2], D.G. Pettifor[2], [1]Department of Materials Science and Engineering, University of Surrey, Guildford, Surrey GU2 5XH,United Kingdom; [2]Department of Materials, University of Oxford, Parks Rd., Oxford OX1 3PH, United Kingdom

9) A Study of the Microstructure and Mechanical Behavior of Ductile Nb-Al-V Alloys
D.N. Horspool, D.K. Tappin, M. Aindow, School of Metallurgy and Materials and IRC in Materials for High Performance Applications, The University of Birmingham, Birmingham, B15 2TT, United Kingdom

10) Atomic Structure and Deformation of Nb-Ti-Al Alloys
R. Wheeler, S. Perungulam, S. Bannerjee, D.-H. Hou, R.J. Grylls, H.L. Fraser,* Department of Materials Science and Engineering, The Ohio State University, 2041 College Rd., Columbus, OH 43210, USA; *Bhabha Atomic Research Centre, Bombay, India 400 085

11) Oxidation Studies on MoSi2-X (X=Al, Ta, W) Alloys
A. Stergiou, P. Tsakiropoulos, Department of Materials Science and Engineering, University of Surrey, Guildford, Surrey GU2 5XH, England, United Kingdom

12) Structure and Mechanical Properties of Ti-Al-Fe Alloys at Ambient and High Temperatures
M. Palm, A. Gorzel, D. Letzig, G. Sauthoff, Max-Planck-Institut für Eisenforschung Gmbh, D-40237 Düsseldorf, Germany

13) An Investigation of Fatigue and Fracture in NiAl/Mo Composites
P. Ramasundaram[1], R. Bowman[2], W.O. Soboyejo[3], [1]Wyman-Gordon Forgings, Houston, TX 77095; [2]NASA Lewis Research Center, 21000 Brookpark Rd., Cleveland, OH 44135; [3]Department of Materials Science and Engineering, The Ohio State University, 2041 College Rd., Columbus, OH 43210, USA

14) Molybdenum and Titanium Silicide Based Composites and Alloys
R. Mitra, N.E. Prasad, A.V. Rao, Y.R. Mahajan, Defence Metallurgical Research Laboratory, Kanchanbagh, Hyderabad 500 058, India

15) Fabrication and Mechanical Behaviors of SiC_{cvd}/TiAl Composite
Y. Mizuhara[1], K. Hashimoto[1], H. Nakatani[2], Y. Shimada[3], [1]Nippon Steel Corporation, Ida, Kawasaki, Kanagawa, 211, Japan; [2]Kawasaki Heavy Industries, LTD, Kakamigahara, Gifu, 504, Japan; [3]Kawasaki Heavy Industries, LTD, Akashi, 673, Japan

NiAl Alloys

16) Misfit Control in NiTi/Ni2TiAl ββ' Alloys
M.A. Peters, C.J. Humphreys, Department of Materials Science and Metallurgy, University of Cambridge, Pembroke St., Cambridge, UK CB2 3QZ

17) Deformation and Microstructure of Ni-Rich and Hf-Doped NiAl Single Crystals in the Hard Orientation
R. Srinivasan[1], M.F. Savage[1], M.S. Daw[2], R.D. Noebe[3], A. Garg[3], M.J. Mills[1], [1]Department of Materials Science and Engineering, The Ohio State University, Columbus, Oh 43210; [2]Department of Physics and Astronomy, Clemson University, Clemson, SC 29634-1911; [3]NASA Lewis Research Center, Cleveland, OH 44135, USA

18) Effect of Chemistry, Microstructure and Orientation on 1100 - 1400 K Plastic Flow Properties of Hf-Doped NiAl Single Crystals
J.D. Whittenberger[1], A. Garg[2], R.D. Noebe[1], W.S. Walston[3], R. Darolia[3], [1]NASA Lewis Research Center, Cleveland, OH; [2]AYT Corporation at NASA Lewis Research Center, Cleveland, OH; [3]General Electric Aircraft Engines, Cincinnati, OH, USA

19) Point Defect Concentrations and Solid Solution Hardening in NiAl with Fe Additions
L.M. Pike, C.T. Liu, Y.A. Chang,* Department of Materials Science and Engineering, University of Wisconsin, Madison, WI 53706-1595; *Metals and Ceramics Division, Oak Ridge National Laboratory, Oak Ridge, TN 37831-6115, USA

Overview/General

20) Ductility Enhancement in Structural Intermetallics from First Principles Calculation
R. Asokamani, R. Rita*, Physics Department, Anna University, Chennai, India; *C.T. Thomas Elizabeth College for Women, Perambur, Chennai, India

21) Complicated Kinetics of LI_0-Ordering and -Disordering Due to Structural Changes Caused by Lattice Distortion
M. Spanl[1], B. Sprusil[2], W. Pfeiler[1], [1]Institut für Materialphysik, University of Vienna, Strudlhofgasse 4, A-1090 Vienna, Australia; [2]Institute of Metal Physics, Charles University, Ke Karlovu 5, CZ-121 16 Praha, Czech Republic

22) Constitution of Ternary Aluminide Systems as Basis for Materials Development
M. Palm, G. Inden, Max-Planck-Institut für Eisenforschung GmbH, D-40237 Düsseldorf, Germany

Processing of TiAl, Monday Evening, September 22, 1997

Session Chairs: Dr. Hamish Fraser, Ohio State University, Dept. of Materials Science & Engineering, 116 West 19th Ave, Columbus OH 43210; Dr. Michael Loretto, IRC in Materials for High Performance Applications, University of Birmingham, Edgbaston B15 2TT, United Kingdom

7:00 PM, INVITED PAPER
Processing of Intermetallic Alloys
S.L. Semiatin[1], J.C. Chesnutt[2], C.M. Austin[2], V. Seetharaman[3]; [1]Materials Directorate, Wright Laboratory, WL/MLLM, Wright-Patterson AFB, OH 45433; [2]G.E. Aircraft Engines, Cincinnati, OH 45215; [3]UES, Inc., 4401 Dayton-Xenia Rd., Dayton, OH 45432, USA

7:30 PM
Processing and Properties of Gamma Titanium Aluminides
H. Clemens[1], N. Eberhardt[2], W. Glatz[1], H.-P. Martinz[1], W. Knabl[1], N. Reheis[1], [1]Plansee Aktiengesellschaft, A-6600 Reutte, Austria; [2]Institut für Metallkunde und Werkstoffprufung, Montanuniversität, A-8700 Leoben, Austria

7:55 PM
Scale-up of Ingot Metallurgy Wrought γ-TiAl
P.L.Martin, D.A. Hardwick, D.R. Clemens[1], W.A. Konkel[2], M.A. Stucke[3], Rockwell Science Center, 1049 Camino Dos Rios, Thousand Oaks, CA 91360; [1]Pratt & Whitney, 17900 Beeline Hwy., Jupiter, FL 33478; [2]Wyman-Gordon Forgings, 10825 Telge Rd., Houston, TX 77095; [3]Wright Laboratories/MLLN, Wright Patterson Air Force Base, Dayton, OH 45433, USA

8:20 PM
Numerical Simulation of Thermal Stress Formation in Investment Cast γ-TiAl
L. Wüerker, M. Fackeldey, P.R. Sahm, Giesserei-Institut RWTH Aachen, Intzestr. 5, D-52072 Aachen, Germany

8:45 PM, COFFEE BREAK

9:00 PM
Multilayer Coating for Protection of Titanium Aluminides from Oxidation and Hydrogen Embrittlement
B.D. Prasad, S.N. Sankaran, K.E. Wiedemann, D.E. Glass, Analytical Services & Materials, Inc. 107 Research Dr., Hampton, VA 23666, USA

9:25 PM
Directional Solidification of TiAl-Based Alloys
D.R. Johnson, Y. Masuda, Y. Shimada, H. Inui, M. Yamaguchi, Department of Materials Science and Engineering, Kyoto University, Sakyo-ku, Kyoto 606-01, Japan

9:50 PM
New Surface Treatment Using a Fluidized Bed Furnace for Improving Oxidation Resistance of TiAl-Base Alloys
H. Kawaura, K. Nishino, T. Saito, Toyota Central Research & Development Laboratories, Inc., 41-1 Yokomichi, Nagakute, Aichi, 480-11, Japan

TiAl: Microstructure & Properties, Tuesday Morning, September 23, 1997

Session Chairs: Helmut Clemens, Plansee Aktiengesellschaft, A-6600 Reutte, Austria; Dr. Young-Won Kim, Universal Energy Systems, 4401 Dayton-Xenia Road, Dayton, OH 45432-1805

8:30 AM, INVITED PAPER
TiAl Microstructure and Properties of TiAl Alloys
R. Wagner, GKSS Research Center, GmbH Max-Planck-Strasse D-21502, Geesthacht, Germany

9:00 AM
Microstructural Design of Near γ-TiAl for Creep Resistance
J. Beddoes, L. Zhao, P. Au*, D. Dudzinski, J. Triantafillou,* Department of Mechanical & Aerospace Engineering, Carleton University, 1125 Colonel By Drive, Ottawa, K1S 5B6, Canada; *Structures, Materials and Propulsion Laboratory, Institute for Aerospace Research, National Research Council, Ottawa, K1A 0R6, Canada

9:25 AM
The Role of Interfacial Substructure on the Creep Deformation of a Fully-Lamellar TiAl Alloy
L.M. Hsiung, T.G. Nieh, Lawrence Livermore National Laboratory, P.O. Box 808, L-370, Livermore, CA 94551-9900, USA

9:50 AM
Defect Sub-Structures in Lamellar Ti48Al After "Hard" Orientation Loading at Room and Elevated Temperatures
J.M.K. Wiezorek, X-D. Zhang, H.L. Fraser, The Ohio State University, Department of Materials Science and Engineering, 2041 College Rd., Columbus, OH 43210-1179, USA

10:15 AM
The Effect of Heat Treatments on Microstructures and Primary Creep Properties of Four Investment Cast Titanium Aluminide Alloys
D.Y. Seo, T.R. Bieler, D.E. Larsen,* Department of Materials Science and Mechanics, Michigan State University, East Lansing, MI 48824-1126; *Howmet Corporation, Whitehall, MI 49461, USA

10:40 AM, COFFEE BREAK

11:00 AM
Structural Evolution of Titanium Di-Borides in Wrought Ti-47at%Al-2Mo-0.2B
M. De Graef[1], D.A. Hardwick[2], P.L. Martin[2], [1]Department of Materials Science and Engineering, Carnegie Mellon University, Pittsburgh, PA 15213; [2]Rockwell International Science Center, Thousand Oaks, CA 91305, USA

11:25 AM
The Effect of Cooling Rate on Microstructural Development in Cast Ti-48Al-2Cr-2Nb Type Alloys
K. Muraleedharan, L.L. Rishel, M. De Graef, A.W. Cramb, T.M. Pollock, G.T. Gray III,* Department of Materials Science and Engineering, Carnegie Mellon University, Pittsburgh, PA 15213; *Los Alamos National Laboratory, MST-5, MS G755, Los Alamos, NM 87545, USA

11:50 AM
The α-γ Phase Transformation Mechanisms in Two-Phase γ-TiAl Based Intermetallic Alloys
E. Abe, T. Kumagai, M. Nakamura, The 3rd Research Group, National Research Institute for Metals, 1-2-1 Sengen, Tsukuba 305, Japan

12:15 PM
A Preliminary Study on the Decomposition of the Beta Phase in Ti-44Al-8Nb and Ti-44Al-4Ta-4Zr-0.2Si Alloys
T.T. Cheng, M.H. Loretto, IRC in Materials for High Performance Applications, The University of Birmingham, Birmingham B15 2TT, United Kingdom

12:40 PM
Microstructure Evolution in Gamma Titanium Aluminides Containing Beta-Phase Stabilizers and Boron Additions
M. Krishnan[1], B. Natarajan[1], V.K. Vasudevan[1], D.M. Dimiduk[2], [1]Dept. of Materials Science and Engineering, University of Cincinnati, Cincinnati, OH 45221-0012; [2]Wright Laboratories, Materials Directorate, WPAFB, Dayton, OH 45433, USA

Ni_3Al and Iron Aluminides, Tuesday Afternoon, September 23, 1997

Session Chairs: Dr. Robert Cahn, University of Cambridge, Dept. of Materials Science & Metallurgy, Pembroke Street, Cambridge CB23QZ, United Kingdom; Dr. Jack Westbrook, Brookline Technologies, 5 Brookline Road, Ballston Spa, NY 12020

2:00 PM, INVITED PAPER
Mechanical Properties of Ni_3Al and FeAl: Recent Developments
E.P. George, C.T. Liu, Metals and Ceramics Division, Oak Ridge National Laboratory, Oak Ridge, TN 37831-6093, USA

2:30 PM
Elasticity and Internal Friction of Fe_{70} Al_{30}-Single Crystals
W. Hermann, T. Ort, H.-G. Sockel, Institut für Werkstoffwissenschaften, Lehrstuhl I, Universitat Erlangen-Numberg, Martensstrasse 5, D-91058 Erlangen, Germany

2:55 PM
Microstructure and Mechanical Properties of Fe-40Al-0.6C
L. Pang, K.S. Kumar, Division of Engineering, Brown University, Providence, RI 02912, USA

3:20 PM
Defect Properties and Defect Analysis in Iron Aluminides
J. Wolff, M. Franz, A. Broska, B. Köhler, Th. Hehenkamp, Institut für Metallphysik, Georg-August Universität, Hospitalstraße, 3-7, 37073 Gottingen, Germany

3:45 PM, COFFEE BREAK

4:05 PM
High Temperature Yield Strength of Binary Stoichiometric and Al-Rich Ni3Al Single Crystals
D. Golberg, M. Demura, T. Hirano, National Research Institute for Metals, 1-2-1 Sengen, Tsukuba, Ibaraki 305, Japan

4:30 PM
Development and Engineering Application of a DS Cast Ni_3Al Alloy IC6
Y.F. Han[1], Z.P. Xing[1], M.C. Chaturvedi[2], [1]Bejing Institute of Aeronautical Materials, Beijing 100095, China; [2]Department of Mechanical and Industrial Engineering, University of Manitoba, Winnipeg, Manitoba, Canada R3T 2N2

4:55 PM
Progress in the Modeling of NiAl-Based Alloys and In-situ Composites Using the BFS Method for Alloys
G. Bozzolo[1], R.D. Noebe[2], J. Ferrante[2], A. Garg[3], [1]Ohio Aerospace Institute, Cleveland, OH 44135; [2]NASA Lewis Research Center, Cleveland, OH 44135; [3]AYT Corporation, NASA Lewis Research Center, Cleveland, OH 44135, USA

Advanced Intermetallics and Composites, Wednesday Morning, September 24, 1997

Session Chairs: Dr. John Perepezko, University of Wisconsin, Dept. of Materials Science & Engineering, 1509 University Ave., Madison, WI 53706; Prof. Shuji Hanada, Tohoku University, Institute for Materials Research, Katahire 2-1-1, AOBA-KU, Sendai 980-77, Japan

8:30 AM
Phase Stability in High Temperature Mo-Rich Mo-B-Si Alloys
C.A. Nunes[1,2], R. Sakidja[1], J.H. Perepezko[1], [1]Department of Materials Science and Engineering, University of Wisconsin-Madison, 1509 University Ave., Madison, WI 53706, USA; [2]Department of Materials Engineering-DEMAR, Chemical Engineering College-FAENQUIL, Polo Urbo-Industrial s/n°, Mondesir, 12600-000, Lorena (SP), Brazil

8:55 AM
Strong, Tough, and Pest Resistant MoSi2-Base Hybrid Composite for Structural Applications
M.G. Hebsur[1], M.V. Nathal[2], [1]NYMA Inc., NASA-LeRC Group, Brookpark, OH 44142; [2]NASA-LeRC, Cleveland, OH 44135, USA

9:20 AM
Mechanical Properties and Oxidation Resistance of Binary Al2Ti Intermetallic Compound
J.E. Benci, J.C. Ma,* Materials Science and Engineering, Wayne State University, Detroit, MI 48202; *Research and Engineering, Preformed Line Products Co., Cleveland, OH 44101, USA

9:45 AM
Microstructural Characterization of NiTi based β2/Ni2TiAl-Based β' Two Phase Alloys
H. Murakami, P.J. Warren[1], T. Kumeta[2], Y. Koizumi, H. Harada, National Research Institute for Metals, Advanced High Temperature Materials Research Group, 1-2-1, Sengen, Tsukuba, 305 Japan; [1]University of Oxford, Department of Materials, Parks Rd., Oxford, OX1 3PH, United Kingdom; [2]Department of Materials Science, Ibaraki University, 4-12-1, Nakanarusawa, Hitachi 316, Japan

10:10 AM
Microstructure and Mechanical Properties of Ultra SCS™ Fiber Reinforced Orthorhombic Ti-22Al-26Nb Composites
A. Chatterjee[1], J.R. Roessler[1], L.E. Brown[1], P.W. Heitman[1], G.E. Richardson[2], [1]Allison Engine Company, Indianapolis, IN 46241; [2]Allison Advanced Development Company, Indianapolis, IN 46241, USA

10:35 AM, COFFEE BREAK

10:55 AM
Phase Evolution, Stability, and Microstructure-Property Relations in Two-Phase Orthorhombic Ti-23Al-27Nb Alloy
C.J. Boehlert[1], B.S. Majumdar[1], V. Seetharaman[1], D.B. Miracle[2], R. Wheeler[1], [1]UES, Inc., 4401 Dayton-Xenia Rd., Dayton, OH 45432-1894; [2]USAF Wright Laboratory Materials Directorate, Wright-Patterson AFB, OH 45433-7817, USA

11:20 AM
The Mechanical Behaviour of the Intermetallic Ti2AlNb
T.K. Nandy, D. Banerjee, Defence Metallurgical Research Laboratory, Hyderabad-500058, India

11:45 AM
Microstructural Evolution, Phase Transformations and Oxidation of an Orthorhombic Titanium Aluminide Alloy
J. Kumpfert, C. Leyens, DLR-German Aerospace Research Establishment, Institute of Materials Research, 51140 Köln, Germany

12:10 PM
Mission Cycle Behavior of Orthorhombic Titanium Matrix Composite
T.P. Gabb[1], J. Gayda[1], A. Chatterjee[2], R. Ress[2], [1]NASA Lewis Research Center, Cleveland, OH 44135; [2]Allison Engine Company, Indianapolis, IN 46241, USA

12:35 PM
Microstructure and Creep Resistance of Nb3Al/Nb *in-situ* Composites
N. Nomura, K. Yoshimi, S. Hanada*,* Department of Materials Processing, Tohoku University, Sendai 980-77, Japan; *Institute for Materials Research, Tohoku University, Sendai 980-77, Japan

Interactive Session B: Wednesday Afternoon, September 24, 1997

Processing of TiAl

23) Measurement of Deformation-Induced Residual Strains and Stresses in PST-Crystals of the Intermetallic Alloy TiAl
M. Riemer, H. Biermann, R. Kowalewski, H. Mughrabi, Institut für Werkstoffwissenschaften, Lehrstuhl 1, Universität Erlangen-Nurnberg, Martensstr. 5, D-91058 Erlangen, Fed. Rep. Germany

24) Diffusion Brazing of Ti-45Al-2Nb-2Mn+0.8vol.%TiB2 XD Alloy
Q. Xu, M.C. Chaturvedi, N.L. Richards, N. Goel,* Department of Mechanical and Industrial Engineering, The University of Manitoba, Winnipeg, Manitoba, Canada R3T 2N2; *Bristol Aerospace Limited, Winnipeg, Manitoba, Canada

25) Microstructural Evolution During Thermomechanical Processing of TiAl
D.L. Anton, United Technologies Research Center, 411 Silver Lane, E. Hartford, CT 06108, USA

26) Spray Processing and Mechanical Behavior of γ-TiAl
B. Li, E.J. Lavernia, Department of Chemical and Biochemical Engineering and Materials Science, University of California at Irvine, Irvine, CA 92697-2575, USA

27) Oxidation Behaviour of Highly Alloyed γ-TiAl Alloys
A. Partridge, M.R. Winstone,* *IRC for Advanced Materials, Birmingham University, Edgbasaton, Birmingham, B15 2TT; Structural Materials Centre, Defence Research Agency, Farnborough, GU14 OXL, United Kingdom

28) The Influence of Ion Implantation upon High Temperature Oxidation Behavior of Ti-48at.%Al Alloy
Y.G. Zhang, X.Y. Li, C.Q. Chen, X.J. Zhang, T.H. Zhang*, H.X. Zhang*,* Department of Materials Science and Engineering, Beijing University of Aeronatuics and Astronautics, Beijing, 100083, P.R. China; *Radiation Beams & Material Engineering Laboratory, The Institute of Low Energy Nuclear Physics, Beijing Normal University, Beijing, 100875, P.R. China

29) Infrared Brazing of a TiAl-Base Alloy Using Ti and Al Foils and the Joint Microstructural Evolution
S. Annaji, R.Y. Lin, Dept. of Materials Science and Engineering, University of Cincinnati, M.L. 12, Cincinnati, OH 45221-0012, USA

30) HREM Investigation on Deformation Twinning and Twin Intersection in a Ti-45Al-10Nb Alloy Deformed at Elevated Temperatures
J.G. Wang[1,2], L.C. Zhang[1], G.L. Chen[1], H.Q. Ye[2], T.G. Nieh[3], [1]State Key Laboratory for Advanced Metals and Materials, University of Science and Technology Beijing, Beijing, 100083, P.R. China; [2]Laboratory of Atomic Imaging of Solids, Institute of Metal Research, Academia Sinica, Shenyang, 110015, P.R. China; [3]Lawrence Livermore National Laboratory, P.O. Box 808, L-369, Livermore, CA 94551-9900, USA

TiAl: Microstructure and Properties

31) Improvement on Oxidation Resistance of Titanium Aluminide Intermetallics by Coatings
Z. Tang, F. Wang, W. Wu, State Key Laboratory for Corrosion and Protection, Institute of Corrosion and Protection of Metals, Academia Sinica, Shenyang 110015, P.R. China

32) Study on Superplasticity of Deformed Ti3Al and TiAl Base Alloys
S. Li, J. Zhang, B. Wang, J. Zhang, D. Zou, T. Jia, Z. Gong, Department of Superalloys, Central Iron & Steel Research Institute (CISRI), Beijing 100081, P.R. China

33) Deformation Processes and Dislocation Motion in γ-TiAl
K.J. Hemker, M. Lu, M. Zupan, Department of Mechanical Engineering, Johns Hopkins University, Baltimore, MD 21218, USA

34) Mechanical Behavior and Microcrack Formation in γ-TiAl Alloys as a Function of Strain Rate and Temperature
Z. Jin[1], G.T. Gray III[1],Y.-W. Kim[2], M. Yamaguchi[3], [1]Los Alamos National Laboratory, Los Alamos, NM 87545; [2]UES, Inc., Dayton, OH 45432,USA; [3]Kyoto University, Sakyo-ku, Kyoto 606, Japan

35) Morphology of Discontinuous Coarsening in Fully Lamellar Ti-44Al (at%) Alloy
S. Mitao[1], L.A. Bendersky[2], [1]Advanced Materials Engineering Lab., Materials & Processing Research Center, NKK Corporation, Fukuyama 721, Japan; [2]Metallurgy Division, National Institute of Standards and Technology, Gaithersburg, MD 20899-0001, USA

36) Atomic Mobility and Point Defects in Gamma Titanium Aluminides
G. Sattonnay, C. Dimitrov, O. Dimitrov, CECM-CNRS, 15 rue Georges Urbain, F-94407 Vitry-sur-Seine Cedex, France

37) Stability of Ultrafine Lamellar Microstructures During Aging in Two-Phase γ-TiAl Alloys
P.J. Maziasz, C.T. Liu, J. L. Wright, Oak Ridge National Laboratory, P.O. Box 2008, Oak Ridge, TN 37831-6115, USA

38) Deformation Substructure Evolution Pertaining to 1/2<110] Unit Dislocations in TiAl Alloys
S. Sriram[1], D.M. Dimiduk[2], P.M. Hazzledine[3], [1]SYSTRAN Corporation, 4126 Linden Ave., Dayton, OH 45432; [2]Materials Directorate, Wright Laboratory, WL/MLLM Wright Patterson AFB, OH 45433-7817; [3]UES, Inc., 4401 Dayton-Xenia Rd., Dayton, OH 45432, USA

39) Improvement on Oxidation Resistance of Titanium Aluminide Intermetallics by Coatings
Z. Tang, F. Wang, W. Wu, State Key Laboratory for Corrosion and Protection, Institute of Corrosion and Protection of Metals, Academia Sinica, Shenyang 110015, China

TiAl Properties and Applications

40) Effects of Alloying on the Mechanical Properties of Gamma-Based Titanium Aluminides
W.O. Soboyejo, C. Mercer, Y. Ni, A.B.O. Soboyejo, Department of Materials Science and Engineering, The Ohio State University, 2041 College Rd., Columbus, OH 43210, USA

41) Tensile and Low Cycle Fatigue Properties of Ti-48Al-2W-0.5Si Gamma Titanium Aluminide
V. Recina, B. Karlsson,* Volvo Aero Corporation, SE-461 81 Trollhättan, Sweden; *Department of Engineering Metals, Chalmers University of Technology, SE-412 96 Göteborg, Sweden

42) Application of Cast Gamma Alloys for Turbochargers
T. Tetsui, Nagasaki Research and Development Center, Mitsubishi Heavy Industries, Ltd., Nagasaki, Japan, 851-03

43) An Approach to Ductility Improvement of TiAl and Ti3Al Titanium Aluminides Based on Microstructure Control
V.M. Imayev, G.A. Salishchev, R.M. Imayev, M.R. Shagiev, N.K. Gabdullin, A.V. Kuznetsov, Institute for Metals Superplasticity Problems, Russian Academy of Sciences, Khalturina 39, Ufa 450001, Russian Federation

44) Manufacturing-Performance-Cost Relationships in Gamma TiAl Castings
P. McQuay, D. Larsen, Howmet Research Corporation, 1500 S. Warner St., Whitehall, MI 49461USA

45) Alloying Effects and Deformation Processes in Duplex γ-TiAl Alloys
C.T. Forwood, M.A. Gibson, P.R. Miller, C.J. Rossouw, A.J. Morton, CSIRO, Division of Materials Science and Technology, Private Bag 33, Clayton South MDC, Victoria 3169, Australia

46) Threshold Fatigue Crack Growth Behavior of the Gamma Titanium Alloy Ti-46.5Al-3Nb-2Cr-0.2W Under High Cycle Fatigue Conditons
B.D. Worth, J.M. Larsen, A.H. Rosenberger*, Air Force Research Laboratory-Materials Directorate, Wright-Patterson Air Force Base, OH 45433; *The University of Dayton Research Institute, Dayton, OH 45419, USA

LATE NEWS SESSION
Wednesday, Afternoon, September 24, 1997

Room: Exhibit Hall Annex
To Be Distributed On Site With Final Program

NiAl Alloys, Wednesday Evening, September 24, 1997

Session Chairs: Dr. Ben Oliver, University of Tennessee, Dept. of Materials Science & Engineering
434 Dougherty Bldg, Knoxville, TN 37996-2200; Dr. Ron Gibala, University of Michigan, Dept. of Materials Science & Engineering, 2300 Hayward, HH Dow Bldg, Ann Arbor, MI 48109

7:00 PM, INVITED PAPER
Prospects for the Development of Structural NiAl Alloys
R.D. Noebe, W.S. Walston,* NASA Lewis Research Center, Cleveland, OH 44135; *G.E. Aircraft Engines, Cincinnati, OH 45215, USA

7:30 PM
Development and Characterization of High Strength NiAl Single Crystal Alloys
R. Darolia, W.S. Walston, GE Aircraft Engines, 1 Neumann Way, Cincinnati, OH 45215, USA

7:55 PM
The Effect of Volume Fraction Reinforcement and Annealing on the Strength of Cryomilled NiAl Containing AlN Particles
M. G. Hebsur[1], J.D. Whittenberger[2], A. Garg[3], [1]NYMA Inc., LeRC Group, Brookpark, OH 44142; [2]NASA-Lewis Research Center, Cleveland, OH 44135; [3]AYT Corp. at NASA-Lewis Research Center, Cleveland, OH 44135, USA

8:20 PM
Toughening Mechanisms in Directionally Solidified B2 NiAl-Based Eutectic Alloys
A. Misra[1], Z.L. Wu[2], R. Gibala, R.D. Noebe[3], B.F. Oliver[4], Department of Materials Science and Engineering, University of Michigan, Ann Arbor, MI 48109-2136; [1]Present address: Center for Materials Science, Los Alamos National Laboratory, MS K765, Los Alamos, NM 87545; [2]Present address: Electric and Fuel Handling Division, Ford Motor Company, Yipsilanti, MI 48197; [3]NASA Lewis Research Center, Cleveland, OH 44135; [4]Department of Materials Science and Engineering, University of Tennessee, Knoxville, TN 37996-2200, USA

8:45 PM, COFFEE BREAK

9:00 PM
Impact Resistance of NiAl Alloys
W.S. Walston, R. Darolia, GE Aircraft Engines, 1 Neumann Way, Cincinnati, OH 45215

9:25 PM
Microscopic Fracture Behavior of Single Crystalline Intermetallics
M. Göken, M. Maßmann, F. Thome, H. Vehoff, University of Saarland, Dept. of Material Science and Process Technology, Bldg. 43B, PO Box 151150, D-66041, Saarbrücken, Germany

9:50 PM
Creep Deformation Behavior and Microstructure Evolution of NiAl/Ni_3Al Multiphase Alloys
H. Senba, M. Igarashi*, Corporate Research and Development, Sumitomo Metal Industries, Ltd., 1-8, Fuso-cho, Amagasaki, Hyogo, 660, Japan; *Present address: Frontier Research Center for Structural Materials, National Research Institute for Metals, 1-2-1, Sengen, Tsukuba, Ibaraki, 305, Japan

10:15 PM
Tensile Behavior of β-NiAl: Intrinsic vs. Extrinsic Properties
V.I. Levit, M.J. Kaufman, Department of Materials Science and Engineering, University of Florida, Gainesville, FL 32611, USA

TiAl: Properties and Applications, Thursday Morning, September 25, 1997

Session Chairs: Dr. Tasadduq Khan, Materials Engineering Division, ONERA, BP 72, F-92322 Chattillon CEDEX; Dr. Don Anton, United Technologies Research Center, MS-22, Hartford, CT 06108

8:30 AM, INVITED PAPER
Aircraft Engine Applications for Gamma Titanium Aluminide
C.M. Austin, K.G. McAllister, T.J. Kelly, J.C. Chesnutt, G.E. Aircraft Engines, One Neumann Way, M89, Cincinnati, OH 45215 USA

9:00 AM, INVITED PAPER
Automotive Applications of TiAl Intermetallics
S. Isobe, T. Noda, Research & Development Division, Daido Steel Co., Ltd., 2-30 Daido-cho, Minami-ku, Nagoya, Japan 457

9:25 AM
Production of Titanium Aluminide Valves for Automotive Engines by Reactive Sintering
D. Schneider[1], T. Jewett [2], C. Gente[1], K. Segtrop[3], M. Dahms[4], [1]GKSS Research Center GmbH, Max-Planck-Straße, D-21502 Geesthacht, Germany; [2]Thermal Spray Laboratory, State University of New York-Stony Brook, Stony Brook, NY, USA; [3]TRW Engine Components, D-30881 Barsinghausen, Germany; [4]Flensburg Polytechnic Institute, Kanzleistraße 91-93, D-24943 Flensburg, Germany

9:50 AM
Creep Behaviour of a Cast γ-TiAl Based Alloy for Gas Turbine Applications
D. Lundström, B. Karlsson, Dept. of Engineering Metals, Chalmers University of Technology, SE-412 96 Göteborg, Sweden

10:15 AM
Influence of Microstructure, Environment and Temperature on Fatigue Crack Propagation in TiAl Alloys
G. Hènaff, C. Mabru, A. Tonneau, J. Petit, Laboratoire de Mècanique et de Physique des Matèriaux-UMR CNRS 6617, ENSMA-Teleport 2-Ave. 1-B.P. 109, Chasseneuil du Poitou, F-86960 Futuroscope, Cedex, France

10:40 AM, COFFEE BREAK

11:00 AM
Designing Gamma TiAl Alloys: Fundamentals, Strategy and Production
Y.-W. Kim, D.M. Dimiduk,* Wright Laboratory Materials Directorate, WL/MLLM, Wright-Patterson AFB, OH 45433; *UES, Dayton, OH 45432, USA

11:30 AM
Fatigue Crack Growth in TiAl Intermetallics with Equiaxed, Duplex and Lamellar Microstructures at Elevated Temperatures
Y. Mutoh, S. Kurai, T. Hansson, T. Moriya, S.J. Zhu, Y. Mizuhara[1],* Nagaoka University of Technology, Nagaoka, 940-21, Japan; *Presently Volve Aero Corp., Trollhättan, Sweden; [1]Nippon Steel Corporation, Nakahara-ku, Kawasaki, 211, Japan

11:55 AM
High Temperature Mechanical Properties Evaluation of a γ-TiAl Base Industrially Developed Intermetallic Alloy
V. Lupinc[1], M. Marchionni[1], M. Nazmy[2], G. Onofrio[1], L. Remy[3],M. Staubli[2], W.M. Yin[1,4], [1]CNR-TEMPTE, Via Cozzi 53, Milano, Italy; [2]ABB Power Generation Baden, Switzerland; [3]EMP, URA CNRS 866, Evry, France; [4]Institute of Metal Research, Chinese Academy of Sciences, Shenyang, China

12:20 PM
Effects of Microstructure, Temperature and Environmental on Fatigue Crack Growth in Ti-46.5Al-3Nb-2Cr-0.2W γTitanium Aluminide
A.H. Rosenberger[1], B.D. Worth[2], J.M. Larsen[1], [1]Air Force Research Laboratory-Materials Directorate, Wright-Patterson Air Force Base, OH 45433-7817; [2]The University of Dayton Research Institute, Dayton, OH 45419-0128, USA

12:45 PM
Development of Third Generation Castable Gamma Titanium Aluminides: Role of Solidification Paths
S. Naka, M. Thomas, C. Sanchez, T. Khan, Office National d'Etudes et de Recherches Aèrospatiales 29, Av. de la Division Leclerc, 92322 Châtillon CEDEX, France

1:10 PM Symposium Close