

WELCOMING REMARKS:

On behalf of the organizing committee for the Third-International Symposium on Structural Intermetallics (ISSI-3), the Titanium, High Temperature Alloys and Refractory Metals Committees and staff of The Mineral, Metals and Materials Society (TMS) and the staff of the Snow King Resort, it is our pleasure to welcome you to the third quadrennial conference on structural intermetallics. We are delighted that you have chosen to participate in this symposium, and we hope that the technical sessions, activities and beautiful location will make for an eventful and memorable conference.

Following the tradition of earlier ISSI conferences, ISSI-3 will feature plenary oral presentations, interactive poster sessions and extended opportunities for informal discussions and activities. The meeting has been designed to bring together not only researchers but also potential users and producers of intermetallic alloys in a way that will allow us to conduct an open information exchange on matters that will enhance the progress of these materials. It is our hope that ISSI-3 will provide you with the opportunity to renew old acquaintances and to forge new contacts.

The symposium will begin Sunday evening with the Keynote Address entitled "Cast Gamma Titanium Aluminides for Low Pressure Turbine Blades: A Design Case Study for Intermetallics" to be given by Alan Gilchrist of General Electric and Tresa Pollock of the University of Michigan. Oral presentations will be given Monday through Thursday mornings, Monday evening, and late Tuesday and Wednesday afternoons. The oral presentations are divided into short sessions of three or four papers that will be followed by 30-minutes of open discussion. We invite all attendees to participate in the open discussion periods and are looking forward to a lively and meaningful exchange of ideas. Poster sessions will be held on Tuesday and Wednesday. The posters will be available for viewing the entire day and special interactive sessions have been scheduled for Tuesday and Wednesday afternoons. Refreshments will be served and all attendees are encouraged to participate in these interactive sessions and to contact the presenting authors for more lengthy discussions. Each of these papers has been through an extensive review process including both abstract review in the Fall of 2000 and manuscript review this past spring. A small number of "Late News Posters" have been added to the symposium. These posters are not documented in the proceedings, but they will be shown and available for discussion during the poster sessions.

We invite you to join us for the Opening Reception immediately after the Keynote Address on Sunday evening and the conference Banquet at the National Museum of Wildlife Art on Tuesday evening. Monday all afternoon and Tuesday and Wednesday early afternoons have been left open for you to enjoy the Jackson Hole surroundings, to engage in extended discussions or to "rest up" for the late afternoon and evening sessions. Monday through Thursday breakfast buffets are included in your housing package. Monday dinner has been left open to provide you with an opportunity to sample one of the many fine restaurants in Jackson Hole. If you need help in selecting a restaurant or afternoon activity, Snow King and TMS staff stand-by ready to assist you.

We wish to acknowledge the entire ISSI-3 organizing committee and extended TMS staff for their efforts in making this conference a reality. We are looking forward to an exciting week and are pleased that you have chosen to join us in Jackson Hole.

- Kevin Hemker and Dennis Dimiduk, ISSI-3 co-chairs.

SCHEDULE OF EVENTS:

SUNDAY, APRIL 28, 2002

Registration	12:00 PM-8:30 PM	Lobby
Keynote Session	8:00 PM-9:30 PM	Grand Room
Welcoming Reception	9:30 PM-11:00 PM	Pool Side

MONDAY, APRIL 29, 2002

Registration	7:00 AM-12:30 PM	Lobby
Authors' Breakfast	7:00 AM-8:15 AM	Atrium Restaurant
Breakfast (at leisure)	7:00 AM-10:00 AM	Atrium Restaurant
Session #1: <i>Titanium Aluminide Processing and Transition to Use I</i>	8:20 AM-10:00 AM	Grand Room
Coffee Break	10:00 AM-10:30 AM	Outside Grand Room
Session #2: <i>Titanium Aluminide Processing and Transition to Use II</i>	10:30 AM-12:30 PM	Grand Room
On Your Own Lunch & Dinner/Free Time	12:30 PM-7:00 PM	
Registration	6:00 PM-10:00 PM	Lobby
And Emerging Intermetallics		
Session #3: <i>Higher-Temperature Intermetallics - Prospects</i>	7:30 PM-9:50 PM	Grand Room

TUESDAY, APRIL 30, 2002

Registration	7:00 AM-12:30 PM	Lobby
Authors' Breakfast	7:00 AM-8:15 AM	Atrium Restaurant
Breakfast (at leisure)	7:00 AM-10:00 AM	Atrium Restaurant
Poster Viewing	8:00 AM-10:00 PM	Teton Room
Session #4: <i>Processing and Prospects for Intermetallics</i>	8:20 AM-10:00 AM	Grand Room
Coffee Break	10:00 AM-10:30 AM	Outside Grand Room
Session #5: <i>Mechanical Behavior and Modeling Of Titanium Aluminides</i>	10:30 AM-12:40 PM	Grand Room
On Your Own Lunch/Free Time	12:40 PM-3:15 PM	
Registration	2:30 PM-5:00 PM	Lobby
Session #6: <i>Interactive Poster Session I</i>	3:15 PM-4:15 PM	Teton Room
Session #7: <i>Titanium Aluminide Processing and Transition to Use III</i>	4:15 PM-5:45 PM	Grand Room
Buses leave for Conference Dinner	6:00 PM	
Cocktail Hour	6:30 PM-7:30 PM	Museum of Wildlife Art
Conference Dinner	7:30 PM-9:30 PM	Museum of Wildlife Art

WEDNESDAY, MAY 1, 2002

Registration	7:00 AM-12:30 PM	Lodge Room
Authors' Breakfast	7:00 AM-8:15 AM	Atrium Restaurant
Breakfast (at leisure)	7:00 AM-10:00 AM	Atrium Restaurant
Poster Viewing	8:00 AM-10:00 PM	Lodge Room
Session #8: <i>Development of Multiphase Intermetallics I</i>	8:20 AM-10:00 AM	Lodge Room
Coffee Break	10:00 AM-10:30 AM	Outside Lodge Room
Session #9: <i>Development of Multiphase Intermetallics II</i>	10:30 AM-12:30 PM	Lodge Room
On Your Own Lunch/Free Time	12:30 PM-3:15 PM	
Registration	2:30 PM-5:00 PM	Lodge Room
Session #10: <i>Interactive Poster Session II</i>	3:15 PM-4:15 PM	Lodge Room
Session #11: <i>Barriers and Benefits to Intermetallics: The Broader Perspective</i>	4:15 PM-5:45 PM	Lodge Room
On Your Own Dinner	6:00 PM	

THURSDAY, MAY 2, 2002

Registration	7:00 AM-9:00 AM	Lodge Room
Authors' Breakfast	7:00 AM-8:15 AM	Atrium Restaurant
Breakfast (at leisure)	7:00 AM-10:00 AM	Atrium Restaurant
Session #12: <i>Processing and Properties of Gamma TiAl</i>	8:20 AM-10:00 AM	Lodge Room
Coffee Break	10:00 AM-10:30 AM	Outside Lodge Room
Session #13: <i>Elevated Temperature Mechanical Behavior</i>	10:30 AM-12:30 PM	Lodge Room

"at leisure" – indicates meal is provided through the lodging registration, but informally taken at participants' discretion. The Tuesday Banquet is provided through the conference registration.

SPONSORS:

The Organizing Committee is grateful to the following organization, who have graciously provided financial support for the symposium.

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APPROPRIATE DRESS FOR THE CONFERENCE:

Informal dress is expected at all symposium sessions and activities.

AUTHORS' BREAKFAST:

Authors of oral presentations, posters, and late news posters are requested to attend an authors' breakfast on the day of their presentation. Tables will be reserved in the Atrium Restaurant for the authors and session chairs to become acquainted or renew old friendships and discuss any last minute changes. The authors' breakfast will run from 7:00 am-8:15 am in the Atrium Restaurant. Please plan to attend on the day of your presentation.

CONFERENCE PROCEEDINGS:

Copies of the proceedings can be purchased at the conference registration desk.

ORAL PRESENTATION SESSIONS:

The ISSI-3 technical review committee has elected a number of papers for oral presentation and discussion. These talks will be given in the Grand Room over the sessions scheduled for Monday morning and evening and Tuesday morning and afternoon. Wednesday morning and afternoon and Thursday morning sessions will take place in the Lodge Room, which is a 5minute walk from the Snow King Resort. Please refer to the Program Schedule for the list of oral presentations and their specific time slots.

INTERACTIVE SESSIONS:

Face-to-face interactive sessions are scheduled for Tuesday and Wednesday afternoons to allow for 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 on each day and their specific discussion times.

LATE NEWS POSTERS:

To increase the timeliness and widen participation in the Third International Symposium on Structural Intermetallics, a small number of abstracts have been included as "Late News Posters". These posters are not documented in the proceedings, but they will be shown and available for discussion during the poster sessions.

CONFERENCE ARRANGEMENTS:

All technical sessions will take place at the Snow King Resort, Jackson Hole, Wyoming, USA.

The Snow King Resort is the largest year-round facility in Jackson Hole, Wyoming, offering 204 hotel rooms, outdoor heated pool, sauna, whirlpools, exercise room, restaurant, lounge, gift shops, hair salon, game room, and an array of recreational activities.

The Snow King Resort's western hospitality, casual dining, and convenience give the freedom to experience Wyoming's wide open spaces, incredible wilderness and wildlife.

Guests may receive faxes while staying at the Snow King Resort at the Front Desk; Fax: 307-733-4086.

Resort checkout time is 12:00 PM.

Snow King Resort is located in the Town of Jackson at the base of Snow King Mountain. Grand Teton National Park is four miles and Yellowstone National Park is fifty-nine miles from Jackson. Teton Village and the Jackson Hole Ski Area are located twelve miles from our resort. The town of Jackson offers a wonderful variety of restaurants, art galleries and shopping.

POLICY ON AUDIO AND VISUAL RECORDING OF TECHNICAL PAPER PRESENTATIONS/SESSIONS:

TMS (The Minerals, Metals & Materials Society) reserves the rights to any audio and video reproduction of all presentations at every TMS sponsored meeting. Recording of sessions (audio, video, still photography, etc.) intended for personal use, distribution, publication, or copyright without the express written consent of TMS and the individual authors is strictly prohibited.

AMERICANS WITH DISABILITY ACT:

TMS strongly supports the Federal Americans with Disability Act (ADA), which prohibits discrimination against, and promotes public accessibility for those with disabilities. In support of this act, we ask that those attendees requiring specific equipment or services contact the registration desk to advise specific needs.

SOCIAL FUNCTIONS:

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

Welcome Reception

Sunday, April 28, 2002
9:30 PM-11:00 PM

On the patio by the outdoor pool at the Snow King Resort – A relaxing place to lounge and view the Grand Teton Mountains.

Conference Banquet

Tuesday, April 30, 2002
6:30 PM-9:30 PM

The National Museum of Wildlife Art – Home to a prestigious collection of fine art devoted to wildlife. The museum houses a hands-on activity area for children, educational videos, traveling exhibits consisting of Native American and western historical material, and a museum shop. The museum building overlooks the National Elk Refuge and the Gros Ventre Mountains.

These functions are included in the registration fee for conference registrants. Tickets for accompanying persons may be purchased at the conference registration desk. Please advise the registration personnel of any special dietary requirements. If you are not able to attend any of these scheduled events, please let the conference registration personnel know to allow for an accurate guarantee. No refunds will be given.

TOURS/ACTIVITIES:

Tours and activities can be arranged through the Snow King Resort Concierge for one guest or a group. The goal of the Concierge is to help you have fun while in Jackson Hole. A diverse array of activities that appeal to all is offered. Please contact the Concierge at the resort for more details. At the end of the day, a great variety of local eateries and fine dining reservations can be coordinated with your plans by the Snow King Resort Concierge.

REGISTRATION:

Conference Registration hours:

Sunday, April 28, 2002	12:00 PM-8:30 PM
Monday, April 29, 2002	7:00 AM-12:30 PM and 6:00 PM-10:00 PM
Tuesday, April 30, 2002.....	7:00 AM-12:30 PM and 2:30 PM-5:00 PM
Thursday, May 2, 2002.....	7:00 AM-9:00 AM

Badges must be worn at all times to gain access to the technical sessions and the social functions.

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TMS is a leading professional society dedicated to the development and dissemination of scientific and engineering knowledge for materials-centered technology. The society is the only professional organization that encompasses the entire spectrum of materials and engineering, from minerals processing through the advanced applications of materials.

TMS has hundreds of publications dealing with materials science, including these titles dealing with structural materials!

CALPHAD AND ALLOY THERMODYNAMICS

Patrice E.A. Turchi, Antonios Gonis, and Robert D. Shull, editors

These proceedings emphasize all theoretical aspects of computational thermodynamics and kinetics and their impact on the science of alloys and materials design. The book will provide an assessment of the CALPHAD (Calculation of Phase Diagrams) approach pioneered by 2002 Hume-Rothery Award recipient Larry Kaufman, a review of the current status of the software applications based on the CALPHAD approach, the impact of CALPHAD on alloy thermodynamics and design, and future prospects. The book will provide a detailed picture of the development of CALPHAD and point to further research.



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CREEP DEFORMATION: FUNDAMENTALS AND APPLICATIONS

Rajiv S. Mishra, James C. Earthman, and Sai V. Raj, editors

These proceedings focus on the application of fundamental creep research to the design and development of high-temperature materials for engineering applications. The book deals with all aspects of creep deformation and high-temperature materials development, specifically the influence of microstructures on various aspects of creep and the application of this information in the design of highly creep-resistant materials. Emphasis will be placed on advanced ceramic and metal matrix composites and advanced intermetallics.



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FATIGUE—THE DAVID L. DAVIDSON SYMPOSIUM

K.S. Chan, P.K. Liaw, R.S. Bellows, T. Zogas, and W.O. Soboyejo, editors

These proceedings from the David L. Davidson Symposium on High-Cycle Fatigue review the current research activities and assess the state-of-the-art in high-cycle fatigue, which has become a major concern in the design of engineering components and structures. This volume will include papers on a basic understanding of failure mechanisms, experimental methods and studies, modeling and simulation, and life-prediction methodology. This volume will also contain papers from the Fatigue of High Temperature Alloys Symposium, which deals with fatigue behavior of high temperature alloys, including crack initiation and propagation modes.



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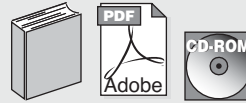
HIGH PERFORMANCE METALLIC MATERIALS FOR COST-SENSITIVE APPLICATIONS

F.H. (Sam) Froes, E. Chen, R.R. Boyer, E.M. Taleff, L. Lu, D.L. Zhang, C.M. Ward-Close, and D. Eliezer, editors

These proceedings examine recent advances in structural materials selection, design, and manufacturing for producing affordable components, with a focus on titanium, aluminum, and other advanced metallic materials. This volume covers melting, casting, powder metallurgy, forging, forming, extrusion, and machining, processing advances, innovative processing techniques, process modeling and materials by design, and new alloys.



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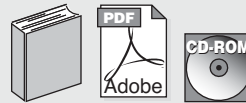
SCIENCE & TECHNOLOGY OF INTERFACES

S. Ankem, C.S. Pande, I. Ovid'ko, and R. Ranganathan, editors

These proceedings present current research and developments on interfaces in materials ranging from advanced nanostructured materials to high T_c superconductors. Special attention is given to the effect of interfaces on the unique, highly desirable properties of advanced materials, with an assessment of current status and future direction. The book acts as a resource, for both researchers and graduate students, on the role of interfaces in advanced materials for research and design.



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ULTRAFINE GRAINED MATERIALS II

Y.T. Zhu, T.G. Langdon, R.S. Mishra, S.L. Semiatin, M.J. Saran, and T.C. Lowe, editors

These proceedings focus on the science and technology of bulk ultrafine-grained materials produced by severe plastic deformation (SPD) techniques. This book details advances in the areas of processing microstructures, microstructural evolution, mechanical and physical properties, superplasticity, computational and analytical modeling, and new SPD technologies and advances.



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STRUCTURAL INTERMETALLICS, THIRD INTERNATIONAL SYMPOSIUM

Kevin J. Hemker and Dennis M. Dimiduk, editors

This volume contains the proceedings from the 3rd International Symposium on Structural Intermetallics to be held April 28–May 2, 2002 (originally scheduled for September 2001). This conference, designed to improve communication between scientists, engineers, and designers for the successful advancement of intermetallic alloys, produced papers that cover: basic characteristics and scientific progress: physical metallurgy; materials production and manufacturing; applications engineering (including design); current status; future directions and needs.

This conference brings together researchers and potential users and producers of intermetallic compounds and composites to conduct an open information exchange.

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ADVANCED TECHNOLOGIES FOR SUPERALLOY AFFORDABILITY

K. M. Chang, S.K. Srivastava, D. Furrer, and K.R. Bain, editors

From the 2000 TMS Annual Meeting & Exhibition, this symposium addresses recent research and development, both industrial and academic, on technologies that reduce component acquisition and system life cycle costs. The proceedings were divided into four sessions: processing improvement, addressing methods to increase the productivity and quality of superalloys; new process/new alloys, covering innovations in manufacturing or enhanced alloy chemistry for superalloy components; process modeling that reduces trial-and-error steps in superalloy melting, casting, forging, heat treatment, machining, and powder processing; and simulation of microstructure/properties providing prediction of alloy microstructure/defect, phase relationship, and expected properties after specific processing operation.

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ADVANCES IN TWINNING

S. Anken and C.S. Pande, editors

Covering developments in twinning mechanisms and the role of twinning in controlling the properties of metals, superconductors, smart materials, intermetallics, and ceramics, these papers presented at the 1999 TMS Annual Meeting & Exhibition will interest materials researchers, university faculty and graduate students, technologists, and manufacturers of materials products.

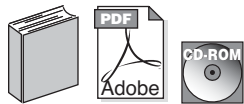
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AFFORDABLE METAL MATRIX COMPOSITES FOR HIGH PERFORMANCE APPLICATIONS

Awadh B. Pandey, Kevin L. Kendig, and Thomas J. Watson, editors

These proceedings from the 2001 TMS Fall Meeting contain papers based on original work in metal-matrix composites (MMCs) for high-performance applications. This publication discusses the technical challenges pertaining to high performance applications and covers all relevant aspects of MMC technology such as selection/development of a suitable matrix alloy, processing techniques, microstructural characterization, and mechanical properties. Issues related to aerospace and space applications of MMCs are emphasized.

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CHEMISTRY AND ELECTROCHEMISTRY OF CORROSION AND STRESS CORROSION CRACKING: A SYMPOSIUM HONORING THE CONTRIBUTIONS OF R.W. STAEHL

Russell Jones, editor

This book includes papers from the symposium on the chemistry and electrochemistry of corrosion and stress corrosion cracking held at the 2001 TMS Annual Meeting & Exhibition. It covers a variety of topics related to stress corrosion cracking including chemistry differences between crack initiation and propagation.

The papers are divided into sections on:

- Mechanisms and Modeling
- Pitting, Crevice Corrosion, and Crack Initiation
- Stress Corrosion Cracking of Iron and Nickel Based Alloys
- Corrosion and Stress Corrosion of Lightweight Alloys
- Stress Corrosion of Waste Container Materials and Other Topics

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DEFORMATION, PROCESSING AND PROPERTIES OF STRUCTURAL MATERIALS

Eric M. Taleff, Chol K. Syn, and Donald R. Lesuer, editors

Held in honor of Professor Oleg D. Sherby, this symposium held at the 2000 TMS Annual Meeting & Exhibition presented new research and review articles on several areas in which Professor Sherby made an impact, such as:

- Processing and Properties of Ultrahigh-Carbon Steels
- Creep Mechanisms and Behavior
- Superplasticity

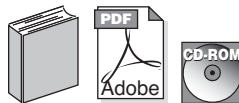
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ELEVATED TEMPERATURE COATINGS IV

Narendra Dahotre, Janet Hampikian, and John Morral, editors

This reference book focuses on the processing and characterization of high-temperature coatings with regard to engineering, physical, and chemical properties. It includes synthesis of new and unconventional coating materials and addresses various existing methods along with novel and innovative techniques of producing coatings and their applications. This volume is available only in Portable Document Format through the TMS Document Ordering Center (DOC).

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THE EMERGENCE OF THE TITANIUM INDUSTRY AND THE DEVELOPMENT OF THE TI-6AL-4V ALLOY: COLLECTIONS AND RECOLLECTIONS

Stanley Abkowitz, editor

This well-illustrated monograph published by *JOM* traces the origins of the international titanium industry. Beginning with the U.S. Bureau of Mines pilot efforts in 1946 to process and produce the first quantities of this promising metal, the book progresses through the emergence of titanium as the material of choice in an array of structural and high-temperature applications. The author documents important milestones in research and development and acknowledges important contributions of pioneers in the field. This comprehensive review of the metal and the industry provides a new perspective of titanium's history and development.

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Tenth International Symposium on EXPERIMENTAL METHODS FOR MICROGRAVITY MATERIALS SCIENCE

R. Schiffman, editor

For more than a decade, international science and industry has focused major effort on microgravity research and development, particularly aimed at the production of unique materials. The first International Symposium on Experimental Methods for Microgravity Materials Science Research was held in 1986 at the 115th TMS Annual Meeting. Subsequently, the symposium has evolved into an annual event presenting technological updates on unique investigations into materials processing and behavior in microgravity and high-temperature environments. This compact disc contains 27 text-searchable papers presented during the 1998 TMS Annual Meeting & Exhibition. The collection provides a comprehensive update of the most recent technological advances in reduced gravity materials research.



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FATIGUE BEHAVIOR OF TITANIUM ALLOYS

R.R. Boyer, D. Eylon, and G. Lütjering, editors

This book represents the proceedings of an international symposium held at the 1998 TMS Fall Meeting. The papers are divided into four sections:

- Mechanisms of Fatigue Crack Initiation and Propagation of Conventional Alloys
- Fatigue in Intermetallics
- Environmental and Surface Aspects of Fatigue
- Application, Life Prediction, and Design

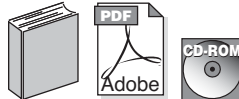
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FATIGUE AND FRACTURE BEHAVIOR OF HIGH TEMPERATURE MATERIALS

P.K. Liaw and M. Huang, editors

These proceedings from the 2000 TMS Fall Meeting will help students, researchers, and practicing engineers develop a fundamental understanding of fatigue and fracture behavior of high-temperature materials including superalloys, intermetallics, ceramics, and composites. The symposium covered: mechanistic understanding of fatigue behavior; mechanistic understanding of fracture characteristics; investigations of fatigue and fracture mechanisms and damage assessment; fatigue crack initiation and growth mechanisms; effects of temperature, interface, loading, processing, and microstructure; life prediction methodology; modeling of fatigue and fracture behavior.

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GAMMA TITANIUM ALUMINIDES 1999

Yong-Wong Kim, Dennis M. Dimiduk, and Michael H. Loretto, editors

This proceedings volume contains 106 papers from the Second International Symposium on Gamma Titanium Aluminides held at the 1999 TMS Annual Meeting & Exhibition. The selected papers cover nearly every aspect of current gamma-alloy technology, including fundamental science, alloy development and design, process development, microstructure and property evaluation, environmental behavior, and applications.

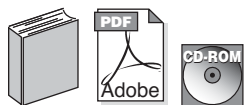
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LIGHTWEIGHT ALLOYS FOR AEROSPACE APPLICATIONS VI

Kumar V. Jata, editor

This proceedings volume from the 2001 TMS Annual Meeting & Exhibition covers advances made in the area of scientific understanding of technological application of lightweight alloys. Papers will focus on fundamental science as well as application and concentrate on scientific advances in aluminum, magnesium, titanium, and beryllium alloys and their composites. Processing, structure-property relationship, failure mechanisms, and advanced joining themes are also discussed.

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LONG TERM STABILITY OF HIGH-TEMPERATURE MATERIALS

G.E. Fuchs, K.A. Dannemann, and T.C. Deragon, editors

The proceedings of this symposium from the 1999 TMS Annual Meeting & Exhibition examine the effects of long-term thermal exposure and long-term service conditions on the microstructure and properties of high-temperature structural materials. A significant number of papers address nickel-based superalloys, elevated-temperature stability of intermetallic alloys, refractory metal alloys, composites, and titanium alloys. Also included are discussions on determining the degree and mechanism of property degradation, correlating laboratory exposure with actual service life, and analyzing properties and methods of component/property refurbishment.

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MAGNESIUM TECHNOLOGY 2001

John Hryn, editor

This second annual symposium proceedings from the 2001 TMS Annual Meeting & Exhibition addresses science and technology issues associated with all aspects of magnesium production and use. The broad scope of this volume covers all aspects of extraction and processing, physical and mechanical properties, alloy development, and applications. Coverage includes:

- Magnesium Reduction
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- Alloy Development
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F.H. Froes and S. Haake, editors

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MATERIALS DESIGN APPROACHES AND EXPERIENCES

J.-C. Zhao, M. Fahrman, and T.M. Pollock, editors

These proceedings from the 2001 TMS Fall Meeting are a unique collection of papers describing both past alloy design experiences and state-of-the-art alloy design methodologies. The papers describing alloy design approaches serve as updates and reviews of the state-of-the-art computational methodologies covering first-principle, neural network, combinatorial, phase-field, thermodynamic, and regression-based alloy design. The papers on alloy development experiences provide an historic perspective on how some of the most successful alloys were developed and the amount of testing and property balance considerations required for the alloys to find commercial applications. Covering both past experiences and new approaches, this book will be useful to alloy developers, metallurgists, and materials scientists in industry and academia.

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MICROSTRUCTURE MODELING AND PREDICTION DURING THERMOMECHANICAL PROCESSING

R. Srinivasan, S.L. Semiatin, Armand Beaudoin, Steven Fox, and Zhe Jin, editors

These proceedings from the 2001 TMS Fall Meeting include papers on recent developments in modeling and prediction of microstructure during thermomechanical processing of titanium, superalloys, aluminum, and ferrous alloys. This volume emphasizes the evolution of microstructure and recrystallization and covers both physical and computer modeling.

Papers are divided into the following major topics:

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MODELING THE PERFORMANCE OF ENGINEERING STRUCTURAL MATERIALS II

D.R. Lesuer and T.S. Srivatsan, editors

These proceedings from the 2001 TMS Fall Meeting examine current research and development efforts in all aspects related to modeling the performance of engineering structural materials. These proceedings cover both analytical and computational modeling of materials, spanning the spectrum of metals, ceramics, polymers, and their composite counterparts. The book includes discussion of elastic and plastic deformation, fracture and fatigue behavior, durability and damage tolerance, and high-strain-rate deformation. Special emphasis is placed on material models, studies involving validation of modeling approaches, and the effective use of modeling to study problems spanning all domains of materials science and engineering.

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NONDESTRUCTIVE EVALUATION AND MATERIALS PROPERTIES IV

P.K. Liaw, R.J. Arsenault, R.E. Green, Jr., K.L. Murty, and R.B. Thompson, editors

This book is a collection of eight papers from a symposium held during the 1999 TMS Annual Meeting & Exhibition. These papers develop and expand on the fundamental understanding of nondestructive evaluation (NDE) signatures with microstructures and properties of structural materials, including advanced materials such as metal-matrix composites, polymer composites, ceramics, and aluminum-lithium alloys.

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PHASE TRANSFORMATIONS AND EVOLUTION IN MATERIALS

P.E.A. Turchi and A. Gonis, editors

This symposium emphasizes both theoretical and experimental aspects of phase transformations and mechanical properties of structurally heterogeneous systems, simulations of structural transformations, large-scale modeling of microstructure evolution in martensites, applying the concentration wave method to predict ordering phenomena in substitutional alloys and ceramic materials, and the phase field method to study coherent transformations.

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SCIENCE OF ALLOYS FOR THE 21ST CENTURY: A HUME-ROTHERY SYMPOSIUM CELEBRATION

Patrice E.A. Turchi, Robert D. Shull, and Antonio Gonis, editors

Intended to serve as a roadmap to the study of alloys, this proceedings volume from the symposium held at the 2000 TMS Fall Meeting offers a clear and concise summary of past advances in the alloy field, current ideas, and future prospects in physical metallurgy. Previous TMS Hume-Rothery Award recipients discuss topics including the impact of atomistic studies on the understanding and the predication of alloy behavior, the advances in knowledge of amorphous and magnetic materials and the prediction of their properties, and the statics, kinetic, and dynamics modeling of alloy phase transformation and evolution. In addition to past award recipients, a number of representatives of funding agencies contributed to the symposium. This proceedings provides a detailed picture of the development of the alloy field on both theoretical and experimental fronts and provides direction for further research.

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STATE OF THE ART IN CAST METAL MATRIX COMPOSITES IN THE NEXT MILLENNIUM

Pradeep K. Rohatgi, editor

This proceedings volume from the 2000 TMS Fall Meeting unites basic researchers with researchers developing industrial applications of metal matrix composites. Coverage includes processing of metal matrix composites, structure-property relationships in cast metal matrix composites, and applications. Specific contributions from North America, Asia, and Europe covered a broad spectrum of topics including:

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STRUCTURAL BIOMATERIALS FOR THE 21ST CENTURY

Henry Rack, Don Lesuer, and Eric Taleff, editors

This volume from the 2001 TMS Annual Meeting & Exhibition provides an overview of the latest technologies and applications of structural metallic, ceramic, plastic, and composite biomaterials leading into the next millennium. The scope of this book includes discussions of materials, special processes, and specific applications, as well as biological environment and fatigue/wear response. This symposium offered a unique opportunity to present research on three basic categories of structural biomaterials (metallic, ceramic, and polymeric) and for researchers from the medical, dental, and engineering fields to interact with each other and further develop the field of advanced structural biomaterials. This symposium covered materials science and engineering issues pertaining to the metallurgy, properties, surface modification, and environmental effects of biocompatible metallic, ceramic, and polymer materials for orthopedic and dental applications and the behavior of bone.

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SUPERALLOYS 2000

Kenneth A. Green, Tresa M. Pollock, and Robert D. Kissinger, editors

This proceedings volume from the International Symposium on Superalloys provides a forum for researchers, producers, and users to exchange recent technical information on superalloys and related high-temperature, high-performance materials used in gas turbines for aircraft, power generation, and other applications. Held once every four years, this conference covers all aspects of development, production, behavior, and integration of superalloys and highlights new initiatives and future growth opportunities for superalloys, recent advances in the understanding of their behavior, and progress in integrating them into new systems.

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SUPERALLOYS 718, 625, 706, AND VARIOUS DERIVATIVES (2001)

Edward Loria, editor

This proceedings volume is from the 5th International Special Emphasis Symposium on Superalloys 718, 625, 706 & Derivatives, the fifth in a series of meetings that successfully provide state-of-knowledge on these important superalloys. This volume is expected to continue the tradition of the four previously published Superalloys 718, 625, 706 & Derivatives volumes, which are acknowledged as the single-source reference on progress and problems in the field from 1989–1997. This new volume will include discussion on melting, solidification, casting, forming technology, thermal processing, physical metallurgy, alloy development, deformation, creep, fatigue, rupture, environmental effects, corrosion, joining, repairs/rejuvenation, service life, life prediction methods, powder metallurgy, and applications.

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SURFACE ENGINEERING: SCIENCE AND TECHNOLOGY I

A. Kumar, Y-W. Chung, and J.J. Moore, editors

These papers from the 1999 TMS Annual Meeting & Exhibition emphasize fundamental issues related to properties and synthesis, as well as vapor-based coatings developed for specific applications. Coverage includes:

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SYNTHESIS OF LIGHTWEIGHT METALS III

F.H. Froes, C.M. Ward-Close, D. Eliezer, and P. McCormick, editors

These papers from the 1999 TMS Annual Meeting & Exhibition focus on the development of new and improved lightweight, metallic materials. Materials covered include aluminum, magnesium, beryllium, titanium, nanostructured materials, and metal-matrix composites. Rapid solidification, mechanical alloying, vapor deposition, thermochemical processing, ingot/casting techniques, melting methods, rolling, extrusions, forging, and drawing are discussed.

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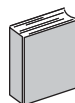
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ISSI-3 TECHNICAL PROGRAM

KEYNOTE ADDRESS

8:00 PM SUNDAY EVENING
APRIL 28, 2002

Session Chairs: Dennis Dimiduk, Air Force Research Laboratory, Matls. & Mfg. Direct., WPAFB, OH 45433 USA; Kevin Hemker, Johns Hopkins University, Dept. of Mechl. Eng., Baltimore, MD 21218 USA

Cast Gamma Titanium Aluminides for Low Pressure Turbine Blades: A Design Case Study for Intermetallics: *Alan Gilchrist*¹; *Tresa M. Pollock*²; ¹GE Engine Services–West Coast Operations, 1923 E. Avion St., Ontario, Canada 91761 USA; ²University of Michigan, Dept. of Matls. Sci. & Eng., 2300 Hayward St., H. H. Dow 2042, Ann Arbor, MI 48109 USA

9:30 - 11:00 PM, WELCOMING RECEPTION

TITANIUM ALUMINIDE PROCESSING AND TRANSITION TO USE - I

MONDAY MORNING
APRIL 29, 2002

Session Chairs: Bob Schafrik, General Electric Aircraft Engines, One Neuman Way, MD H85, Cincinnati, OH 45215-6301 USA; Mike Nathal, NASA–Glenn Research Center, Matls. Div., MS 49-1, 21000 Brookpark Rd., Cleveland, OH 44135 USA

8:20 AM, INVITED PAPER

Applications of Intermetallics in the Gas Turbine: N. A. Walker¹; N. E. Glover¹; *Amit Chatterjee*²; ¹Technology, Aerofoils and Structures, Rolls-Royce PLC, PO Box 31, Derby DE24 8BJ England; ²Rolls-Royce Corporation, 2001 S. Tibbs Ave., Speed Code W05, Indianapolis, IN 46241 USA

8:50 AM

Gamma TiAl Meltstock Technology: Development of Plasma Arc Melting and Controlling Aluminum Content: D. R. Clemens¹; *Paul McQuay*¹; ¹Howmet Research Corporation, 1500 S. Warner St., Whitehall, MI 49461-1832 USA

9:10 AM

Microstructure and Defects in γ -TiAl Based Vacuum Arc Remelted Ingot Materials: *V. Guether*¹; R. Joos²; H. Clemens³; ¹GfE Metalle und Materialien GmbH, R&D, Hoefener Str. 45, Nuernberg, Bavaria 90431 Germany; ²DaimlerChrysler AG, HPC R901, Stuttgart, Baden-Wuerttemberg 70546 Germany; ³GKSS

Research Center, Inst. for Matls. Rsrch., Max-Planck-Strasse, Geesthacht 21502 Germany

9:30 AM, DISCUSSION

10:00 AM, COFFEE BREAK

TITANIUM ALUMINIDE PROCESSING AND TRANSITION TO USE - II

MONDAY MORNING
APRIL 29, 2002

Session Chairs: Heinrich Kestler, Plansee Aktiengesellschaft, A-6600 Reutte, Tirol, Austria; Ken Wright, GE–Aircraft Engines, Matls. & Proc. Eng. Dept., Cincinnati, OH 45215 USA

10:30 AM, INVITED PAPER

Using Titanium Aluminides in the “Real World”: *R. I. Prihar*¹; ¹Pratt & Whitney, Adv. Engines, Aircraft Rd., MiddleTown, CT 06457 USA

11:00 AM

PM-Processing of an Advanced γ -TiAl Alloy: Technologies, Microstructures and Mechanical Properties: *R. Gerling*¹; H. Clemens¹; F.-P. Schimansky¹; G. Wegmann¹; ¹GKSS Research Centre, Inst. for Matls. Rsrch., Max-Planck-Strasse, Geesthacht 21502 Germany

11:20 AM

Development of TiAl-Base Alloys with Improved Foreign Object Damage Resistance: *H. Kawaura*¹; K. Nishino¹; T. Saito¹; ¹Toyota Central Research & Development Laboratories, Inc., Matls. Div. 1, 41-1 Yokomichi, Nagakute, Aichi-gun, Aichi 480-1192 Japan

11:40 AM

The Role of Impact Damage and Fatigue Strength Reduction in Gamma Titanium Aluminide Alloys: R. Smith¹; T. Harding²; J. W. Jones¹; P. Steif³; *T. M. Pollock*¹; ¹University of Michigan, Dept. of Matls. Sci. & Eng., 1261 Lurie Engineering Ctr., Ann Arbor, MI 48109 USA; ²Kettering University, 1700 W. Third Ave., Flint, MI 48504 USA; ³Carnegie Mellon University, Dept. of Mechl. Eng., Pittsburgh, PA USA

12:00 PM, DISCUSSION

HIGHER-TEMPERATURE INTERMETALLICS—PROSPECTS

MONDAY EVENING
APRIL 29, 2002

Session Chairs: Dan Thoma, Los Alamos National Laboratory, Matls. Sci. & Tech., MS G770, Los Alamos, NM 87545-0001 USA; Shela Woodard, Pratt & Whitney, 400 Main St., MS 114-51; East Hartford, CT 06108-0968 USA

7:30 PM, INVITED PAPER

Materials Beyond Superalloys—Exploiting High-Temperature Composites: S. J. Balsone¹; B. P. Bewlay¹; M. R. Jackson¹; P. R. Subramanian¹; J.-C. Zhao¹; A. Chatterjee²; T. M. Heffernan³; ¹GE Power Systems, Matls. & Proc. Eng., One River Rd., Bldg. 55, Rm. 119, Schenectady, NY 12345 USA; ²Rolls Royce Corporation, Matls. & Proc., Speed Code W-05, 2001 S. Tibbs Ave., Indianapolis, IN 46268 USA; ³Allison Advanced Development Company, Indianapolis, IN 46241 USA

8:00 PM

The Thermal Stability of Nb/Nb₅Si₃ Microlaminates in Vacuum and Ar: D. Van Heerden¹; T. P. Weihs¹; ¹Johns Hopkins University, Dept. of Matls. Sci. & Eng., Baltimore, MD 21218 USA

8:20 PM

Multiphase Microstructures and Stability in High Temperature Mo-Si-B Alloys: J. H. Perepezko¹; R. Sakidja¹; S. Kim¹; Z. Dong¹; J. S. Park¹; ¹University of Wisconsin—Madison, Dept. of Matls. Sci. & Eng., 1509 University Ave., Madison, WI 53706 USA

8:40 PM

The Precipitate Morphology and Lattice Mismatch of Ternary (Pt)/Pt₃Al Alloys: P. J. Hill¹; Y. Yamabe-Mitarai²; H. Murakami²; L. A. Cornish³; M. J. Witcomb³; I. M. Wolff¹; H. Harada²; ¹Mintek, Physl. Metall. Div., PB X3015, Randburg 2125 S. Africa; ²National Research Institute for Metals, HTM-21 Proj., 1-2-1 Sengen, Tsukubashi, Ibaraki-ken 305-0047 Japan; ³University of the Witwatersrand, PB3, WITS 2050 S. Africa

9:00 PM

Deformation and Dislocation Structure of Single Crystals of Binary and Some Ternary MoSi₂ with the C11_b Structure: H. Inui¹; M. Yamaguchi¹; ¹Kyoto University, Dept. of Matls. Sci. & Eng., Sakyo-ku, Kyoto 606-8501 Japan

9:20 PM, DISCUSSION

PROCESSING AND PROSPECTS FOR INTERMETALLICS

TUESDAY MORNING
APRIL 30, 2002

Session Chairs: Harry Lipsitt, Wright State University, Dept. of Mechl. & Matls. Eng., 209 Russ Engineering Ctr., 3640 Colonel Glenn Hwy., Dayton, OH 45435-0001 USA; Andrew Rosenberger, Air Force Research Laboratory, Matls. & Mfg. Direct., AFRL/MLLMN, 2230 Tenth St., WPAFB, OH 45433-7817 USA

8:20 AM, INVITED PAPER

A Perspective on Intermetallic Commercialization for Aero-Turbine Applications: R. E. Schafrik¹; ¹General Electric Aircraft Engines, Mgr., Matls. & Proc. Eng., One Neumann Way, MD H85, Cincinnati, OH 45215-6301 USA

8:50 AM

Microstructure and Mechanical Properties of a Boron Containing Gamma Titanium Aluminide Alloy in Different Hot Working Stages: M. Oehring¹; U. Lorenz¹; F. Appel¹; D. Roth-Fagaraseanu²; ¹GKSS Research Centre, Inst. for Matls. Rsrch., Max-Planck-Str., Geesthacht D-21502 Germany; ²Rolls-Royce Deutschland GmbH, Eschenweg 11, Dahlewitz D-15827 Germany

9:10 AM

Characterization and Processing of an Advanced Intermetallic NiAl-Base Alloy for High-Temperature Applications: M. Palm¹; G. Sauthoff¹; ¹Max-Planck-Institut für Eisenforschung GmbH, Max-Planck-Str. 1, D-40237 Düsseldorf, Germany

9:30 AM, DISCUSSION

10:00 AM, COFFEE BREAK

MECHANICAL BEHAVIOR & MODELING OF TITANIUM ALUMINIDES

TUESDAY MORNING
APRIL 30, 2002

Session Chairs: Jim Larsen, Air Force Research Laboratory, Matls. & Mfg. Direct., AFRL/MLL N, Bldg. 655, 2230 Tenth St., Ste. 1, WPAFB, OH 45433-7817 USA; Kevin Hemker, Johns Hopkins University, Dept. of Mechl. Eng., 122 Latrobe Hall, 3400 N. Charles St., Baltimore, MD 21218 USA

10:30 AM

Fracture Behavior of Binary Lamellar Ti-46Al: K. S. Kumar¹; P. Wang¹; K. Chan²; J. Arata¹; N. Bhate¹; J. Onstott¹; W. Curtin¹; A. Needleman¹; ¹Brown University, Div. of Eng., Box D, Providence, RI 02912 USA; ²Southwest Research Institute, 3rd Floor, Bldg. 128, 6220 Culebra Rd., San Antonio, TX 78238 USA

10:50 AM

Dynamic Deformation and Damage in Cast γ -TiAl During Taylor Cylinder Impact: Experiments and Model Validation: *G. T. Gray*¹; *P. S. Steif*²; *T. M. Pollock*³; ¹Los Alamos National Laboratory, Dept. of Mechl. Eng., Los Alamos, NM 87545 USA; ²Carnegie Mellon University, Dept. of Mechl. Eng., Schenley Park, Pittsburgh, PA 15213 USA; ³University of Michigan, Matls. Sci. & Eng., 2300 Hayward St., H. H. Dow 2042, Ann Arbor, MI 48109 USA

11:10 AM

Deformation Behavior of Gamma Titanium Aluminides—Micromechanical Modeling of Polycrystalline Materials: *W. T. Markert*¹; *F. D. Fischer*¹; *H. Clemens*²; ¹University of Leoben, Inst. of Mech., Franz-Josef-Strasse 18, Leoben, Styria A-8700 Austria; ²GKSS Research Centre, Inst. for Matls. Rsrch., Max-Planck-Strasse, Geesthacht D-21502 Germany

11:30 AM

Elastic-Plastic Stress Analysis of Gamma Titanium Aluminides Polycrystals: *R. A. Brockman*¹; *G. J. Frank*¹; *S. E. Olson*¹; ¹University of Dayton Research Institute, Aeros. Mech., Structures Grp., MS CSC-327, 300 College Park Ave., Dayton, OH 45469-0110 USA

11:50 AM

Mechanisms and Effect of Microstructure on Creep of TiAl-Based Alloys: *S. Karthikeyan*¹; *G. B. Viswanathan*¹; *Y.-W. Kim*²; *V. K. Vasudevan*³; *M. J. Mills*¹; ¹Ohio State University, Dept. of Matls. Sci. & Eng., 477 Watts Hall, 2041 College Rd., Columbus, OH 43210 USA; ²UES, Inc., 4401 Dayton Xenia Rd., Dayton, OH 45432-1805 USA; ³University of Cincinnati, Matls. Sci. & Eng., Cincinnati, OH 45221-0012 USA

12:10 PM, DISCUSSION

INTERACTIVE POSTER SESSION - I

TUESDAY AFTERNOON, 3:15 PM – 4:15 PM
APRIL 30, 2002

1) **Commissioning of a Prototype Plant for the Economical Mass Production of TiAl-Valves:** *M. Blum*²; *H. G. Fellmann*²; *H. Franz*²; *G. Jarczyk*²; *T. Ruppel*²; *P. Busse*¹; *K. Segtrop*³; *H.-J. Laudenberg*³; ¹ACCESS, Intzestrasse 5, Aachen 52072 Germany; ²ALD Vacuum Technologies AG, Vacuum Metall., Rueckinger Strasse 12, Erlensee 63526 Germany; ³TRW Deutschland GmbH, Hannoversche Strasse, Barsinghausen 30890 Germany

2) **Primary Melting Issues Related to Gamma Titanium Aluminides:** *W. J. Porter, III*¹; *Y.-W. Kim*²; *K. Li*¹; *A. H. Rosenberger*³; *D. M. Dimiduk*³; ¹The University of Dayton Research Institute, Structl. Integrity, 300 College Park, Dayton, OH 45469-0128 USA; ²UES, Inc., 4401 Dayton-Xenia Rd., Dayton, OH 45432 USA; ³USAF, Matls. & Mfg. Direct., AFRL/MLLM, Air Force Rsrch. Lab., 2230 Tenth St., Wright-Patterson AFB, OH 45433-7817 USA

3) **Progress Towards the Production of High Quality γ -TiAl Castings:** *R. A. Harding*¹; *M. Wickins*¹; *Y. G. Li*¹; ¹University of Birmingham, IRC in Matls., Elms Rd., Edgbaston, Birmingham, B15 2TT UK

4) **Microstructure and Chemical Homogeneity of High Nb Gamma Based TiAl Alloys in Different Conditions of Processing:** *U. Brossmann*¹; *M. Oehring*¹; *F. Appel*¹; ¹GKSS Research Center, Inst. for Matls. Rsrch., Max Planck Str., Geesthacht D-21502 Germany

5) **Electronic Structure and Electronic Mechanisms of Impurity-Dislocation Interactions in Intermetallics:** *O. Y. Kontsevoi*¹; *Y. N. Gornostyrev*¹; *A. J. Freeman*¹; ¹Northwestern University, Dept. of Phys. & Astron., 2145 N. Sheridan Rd., Evanston, IL 60208-3112 USA

6) **Alloying and Phase Stability in Niobium Silicide In-Situ Composites:** *J.-C. Zhao*¹; *B. P. Bewlay*¹; *M. R. Jackson*¹; *L. A. Peluso*¹; ¹GE Corporate Research & Development, PO Box 8, Schenectady, NY 12301 USA

7) **A Study of the Oxidation Behaviour of Mo-Si-Al Intermetallic Alloys at Low, Intermediate and High Temperatures:** *A. Arvanitis*¹; *M. J. Whiting*¹; *P. Tsakiroopoulos*¹; ¹University of Surrey, Sch. of Mechl. & Matls. Eng., Guildford, Surrey GU2 7XH UK

8) **Oxidation Resistance of Spark Plasma Sintered Compacts in Nb-Si-Cr and Nb-Si-Al Systems:** *T. Murakami*¹; *S. Sasaki*¹; *K. Ichikawa*¹; *A. Kitahara*²; *K. Ito*³; *H. Inui*³; *M. Yamaguchi*³; ¹Mechanical Engineering Laboratory, Matl. Design Div., 1-2 Namiki, Tsukuba, Ibaraki 305-8564 Japan; ²Kyushu National Industrial Research Institute, 807-1 Shuku, Tosu, Saga 841-0052 Japan; ³Kyoto University, Dept. of Matl. Sci. & Eng., Sakyo-ku, Kyoto 606-8501 Japan

9) **High Temperature Oxidation Mechanisms in Nb-Silicide Bearing Multicomponent Alloys:** *E. S.K. Menon*^{1,2}; *M. G. Mendiratta*^{1,2}; *D. M. Dimiduk*²; ¹UES, Inc., Matls. & Proc., 4401 Dayton-Xenia Rd., Dayton, OH 45432-1894 USA; ²Air Force Research Laboratory, AFRL/MLLM, Matls. & Mfg. Direct. Wright-Patterson AFB, OH 45433 USA

10) **Development of Tough, Strong and Pest-Resistant MoSi₂-BSi₃N₄ Composites for High-Temperature Structural Applications:** *M. G. Hebsur*¹; *S. R. Choi*¹; *J. A. Salem*¹; *J. D. Whittenberger*¹; *R. D. Noebe*¹; ¹NASA-Glenn Research Center, Matls. Div., MS 49-1, 21000 Brookpark Rd., Cleveland, OH 44135 USA

11) **Flow, Fracture and Fatigue of Nb and Nb Silicide Intermetallic Composites:** *J. J. Lewandowski*¹; *D. Padhi*¹; *S. Solv'yev*¹; ¹Case Western Reserve University, Dept. Matls. Sci. & Eng., Cleveland, OH 44106 USA

12) **Effect of Impact Damage on the Fatigue Response of TiAl Alloy-ABB-2:** *S. L. Draper*¹; *B. A. Lerch*¹; *J. M. Pereira*¹; *M.V. Nathal*¹; *M. Y. Nazmy*²; *M. Staubli*²; *D. R. Clemens*³; ¹NASA-Glenn Research Center, Matls. Div., MS 49-1, 21000 Brookpark Rd., Cleveland, OH 44135 USA; ²Alstom Power, CH, Ltd., Borden CH5401 Switzerland; ³Howmet Research Corporation, Operhall Rsrch. Ctr., 1500 S. Warner St., Whitehall, MI 49461-1895 USA

13) **Near-Threshold Fatigue Crack Growth Mechanisms in TiAl Alloys:** *G. Henaff*¹; A. Tonneau¹; C. Mabru¹; ¹ENSMA, LMPM, 1 Ave. C. Ader, BP 40109, Futuroscope, Chasseneuil 86961 France

14) **Defect Behavior in Gamma Titanium Aluminides:** *P. K. Wright*¹; S. Gilbert¹; A. Chatterjee²; T. Cook³; M. R. Mitchell⁴; A. H. Rosenberger⁵; ¹GE Aircraft Engines, 1 Neumann Way, G50, Cincinnati, OH 45215 USA; ²Rolls-Royce Corporation, 2001 S. Tibbs Ave., Speed Code W05, Indianapolis, IN 46241 USA; ³Allison Advanced Development Company, PO Box 7162, MC S-50, Indianapolis, IN 45206 USA; ⁴Rockwell Science Center, 1049 Camino Dos Rios, Thousand Oaks, CA 91360 USA; ⁵Air Force Research Laboratory, Matls. & Mfg. Direct., AFRL/MLLMN, Bldg. 655, 2230 Tenth St., Ste. 1, WPAFB, OH 45433-7817 USA

15) **Effect of Shot Peening on Fatigue Performance of Gamma Titanium Aluminides:** *J. Lindemann*¹; D. Fagaraseanu²; L. Wagner¹; ¹BTU Cottbus, Chair of Physl. Metall. & Matls. Tech., Universitaetsplatz 3-4, Cottbus 03044 Germany; ²Rolls-Royce GmbH, Eschenweg 11, Dahlewitz 15827 Germany

16) **Colony Property Determination in a Gamma Titanium Aluminide:** *R. John*¹; W. J. Porter, III²; S. Olson²; ¹Air Force Research Laboratory, Matls. & Mfg. Direct. (AFRL/MLLMN), Wright-Patterson AFB, OH 45433 USA; ²University of Dayton Research Institute (UDRI), Dayton, OH 45469 USA

17) **Fatigue Crack Propagation in γ -TiAl Sheets: Intrinsic and Extrinsic Contribution to the Fatigue Resistance:** *R. Pippan*¹; A. Tesch¹; P. Hageneder²; T. Hebesberger¹; H. Kestler³; H. Clemens⁴; ¹Erich Schmid Institut für Materialwissenschaft der Österreichische Akademie der Wissenschaften, 8700 Leoben, Austria; ²Institut für Metallphysik, Montanuniversität Leoben, Austria; ³Plansee AG, 6600 Reutte, Austria; ⁴GKSS Research Center, Inst. of Matl. Rsrch., 21502 Geesthacht, Germany

18) **The Effect of Crystal Orientation on Deformation Transfer at γ - γ Boundaries in a Near- γ TiAl Based Alloy:** *B. A. Simkin*¹; M. A. Crimp¹; T. R. Bieler¹; D. E. Mason¹; ¹Michigan State University, 3536 Engineering, E. Lansing, MI 48824-1226 USA

19) **Optimization of Hot Workability and Hot Deformation Mechanisms in FeAl and Fe₃Al Based Alloys:** *Y.V.R.K. Prasad*¹; D. H. Sastry²; R. S. Sundar²; S. C. Deevi²; ¹Indian Institute of Science, Dept. of Metall., Bangalore 560012 India; ²Chrysalis Technologies, Inc., Richmond, VA USA

20) **Environmental Embrittlement of a FeAl Alloy Prepared by Mechanical Alloying Under Monotonic and Cyclic Loading:** *G. Henaff*¹; A. Tonneau²; ¹ENSMA, LMPM, 1 ave. C. Ader, BP 40109, Futuroscope, Chasseneuil 86961 France; ²ENSAM, LPMI, 2 Bd Ronceray, BP3525, Angers, Cedex 49035 France

21) **Processing and Properties of TiC-Ni₃Al Composites:** *T. N. Tieg*¹; J. L. Schroeder¹; P. A. Menchhofer¹; F. C. Montgomery¹; D. L. Barker¹; F. Goranson²; *D. E. Wittmer*²; ¹Oak Ridge National Laboratory, Metals & Cer. Div., PO Box 2008, MS 6087, Oak Ridge, TN 37831 USA; ²Southern Illinois University, Carbondale, IL 62901 USA

22a) **Oxidation Mechanisms in Mo-Si-B Ductile-Phase Reinforced Intermetallic Alloys:** *T. A. Parthasarathy*¹; M. G. Mendiratta¹; D. M. Dimiduk²; ¹Air Force Research Laboratory, Matls. & Mfg. Direct., AFRL/MLLM, Wright-Patterson AFB, OH 45433-7817 USA

22b) **Hydrogen Effect on the Elastic Modulus of a γ -TiAl Sheet:** *E. C. Herrera*¹; D. Martell¹; M. C. Ruales¹; F. A. Just¹; P. A. Sundaram¹; ¹University of Puerto Rico, Dept. of Mechl. Eng., Mayaguez 00680 Puerto Rico

TITANIUM ALUMINIDE PROCESSING AND TRANSITION TO USE - III

TUESDAY AFTERNOON
APRIL 30, 2002

Session Chairs: Patrick Martin, Air Force Materials Laboratory, Matls. & Mfg. Direct., WPAFB, OH 45433 USA; Dennis M. Dimiduk, Air Force Research Laboratory, Matls. & Mfg. Direct., WL/MD, 2230 10th St. Rsrch. Lab., AFRL/MLLM Bldg. 655, Ste. 1, WPAFB, OH 45433 USA

4:15 PM, INVITED PAPER

Cast Gamma TiAl Alloys: Are We There Yet?: *P. A. McQuay*¹; ¹Howmet Research Corporation, Adv. Tech., 1500 S. Warner St., Whitehall, MI 49461 USA

4:45 PM, INVITED PAPER

Titanium Aluminides for Automotive and Gas Turbine Applications: *W. Smarsly*¹; H. Baur²; G. Glitz²; H. Clemens³; T. Khan⁴; M. Thomas⁴; ¹MTU Aeroengines, Matls. Dept., Dachauer Strasse 665, Munich 80995 Germany; ²DaimlerChrysler AG, Structl. Matls., Wilhelm-Runge-Strasse 11, Ulm 89013 Germany; ³GKSS Research Center, Inst. for Matls. Rsrch., Max Planck Strasse, Geesthacht 21502 Germany; ⁴ONERA, BP72, 92322 Chatillon, Cedex, France

5:15 PM DISCUSSION

DEVELOPMENT OF MULTIPHASE INTERMETALLICS - I

WEDNESDAY MORNING
MAY 1, 2002

Session Chairs: Amit Chatterjee, Rolls-Royce Corporation, 2001 S. Tibbs Ave., Speed Code W05, Indianapolis, IN 46241 USA; Dan Whittenberger, NASA-Glenn Research Center, Matls. Div., MS 24-1, 21000 Brookpark Rd., Cleveland, OH 44135 USA

8:20 AM, INVITED PAPER

Engineering Multiphase Intermetallics: *D. Banerjee*¹; R. G. Baligidad¹; A. K. Gogia¹; J. L. Strudel²; ¹Defense Metallurgical Research Laboratory, Kanchanbagh, Hyderabad 500058 India; ²Centre des Materiaux, Ecole des Mines, 91003 Evry, Cedex, France

8:50 AM

Structure, Properties and Application of NiAl Eutectic Alloys: *W. S. Walston*¹; *R. Darolia*¹; ¹GE Aircraft Engines, 1 Neumann Way, H85, Cincinnati, OH 45215 USA

9:10 AM

Development and Evaluation of Directionally-Solidified NiAl/(Cr,Mo)-Based Eutectic Alloys for Airfoil Applications: *S. V. Raj*¹; *I. E. Locci*²; *J. D. Whittenberger*¹; ¹NASA Glenn Research Center at Lewis Fields, Matls. Div., MS 24-1, 21000 Brookpark Rd., Cleveland, OH 44135 USA; ²Case Western Research University, MS 49-1, 21000 Brookpark Rd., Cleveland, OH 44135 USA

9:30 AM, DISCUSSION

10:00 AM, COFFEE BREAK

DEVELOPMENT OF MULTIPHASE INTERMETALLICS - II

WEDNESDAY MORNING

MAY 1, 2002

Session Chairs: Vijay Vasudevan, University of Cincinnati, Dept. of Matls. Sci. & Eng., Cincinnati, OH 45221-0012 USA; Helmut Clemens, GKSS Research Centre, Inst. for Matls. Rsrch., Max-Planck-Strasse, Geesthacht D-21502 Germany

10:30 AM, INVITED PAPER

The State of Intermetallics Development and Use in Japan—With Particular Emphasis on TiAl-Base Alloys and Transitional Metal Silicides: *T. Abe*²; *H. Hashimoto*²; *H. Ishikawa*²; *H. Kawaura*³; *K. Murakami*⁴; *T. Noda*⁵; *S. Sumi*²; *T. Tetsui*⁶; *M. Yamaguchi*¹; ¹Kyoto University, Dept. of Matls. Sci. & Eng., Kyoto 606-8501 Japan; ²Tohoku National Industrial Research Institute, Nigatake 4-2-1, Miyagino-ku, Sendai 983-0036 Japan; ³Toyota Central R&D Laboratories, Inc., Matls. Div. 1, Yokomichi 41-1, Nagakute, Aichi 480-1192 Japan; ⁴Mechanical Engineering Laboratory, Tsukuba 305-8564 Japan; ⁵Daido Steel Company, Ltd., R&D Div./Special Steel Rsrch. Dept., Daidocho, Minami-ku, Nagoya 457-8545 Japan; ⁶Mitsubishi Heavy Industry, Ltd., Nagasaki R&D, Fukahori 5-717-1, Nagasaki 851-0392 Japan

11:00 AM

Al-Ti Alloys with Al-Rich Titanium Aluminides: Phase Equilibria, Evolution of Phases, and Strength of Lamellar Ti-Al +r-Al₂Ti Alloys: *F. Stein*¹; *L. C. Zhang*¹; *M. Palm*¹; *G. Sauthoff*¹; ¹Max-Planck-Institut für Eisenforschung GmbH, Max-Planck-Str. 1, D-40237 Düsseldorf, Germany

11:20 AM

Microstructure and Microhardness of Mo₃Si₃-Based Alloys: *E. Ström*¹; *J. Zhang*²; *C. Li*¹; *S. Eriksson*³; *D. Feng*²; ¹Eng. Metals, Chalmers University of Technology, SE-412 96 Gothenburg, Sweden; ²Central Iron and Steel Research Institute, Div. of Superalloys, No. 76 Xue Yuan Nan Rd., Beijing 100081 China; ³Chalmers University of Technology, Inorganic Chem., SE-412 96 Gothenburg, Sweden

11:40 AM

Alloy Development and Industrial Processing of Iron Aluminide Sheets: *S. C. Deevi*¹; *H. Sastry*¹; *V. K. Sikka*²; ¹Chrysalis Technologies, Inc., Rsrch. Ctr., Richmond, VA 23234 USA; ²Oak Ridge National Laboratory, Metals & Cer. Div., Oak Ridge, TN 37830 USA

12:00 PM, DISCUSSION

INTERACTIVE POSTER SESSION - II

WEDNESDAY AFTERNOON, 3:15 PM – 4:15 PM

MAY 1, 2002

1) **Effects of Minor Alloying Additions on the Microstructure, Toughness and Creep Strength of Directionally Solidified NiAl-31Cr-3Mo:** *J. D. Whittenberger*¹; *S. V. Raj*¹; *I. E. Locci*²; *J. A. Salem*³; ¹NASA–Glenn Research Center, Matls. Div., 21000 Brookpark Rd., MS 24-1, Cleveland, OH 44135 USA; ²CWRU at NASA–Glenn Research Center, Matls. Div., 21000 Brookpark Rd., MS 49-1, Cleveland, OH 44135 USA; ³NASA–Glenn Research Center, Structures Div., 21000 Brookpark Rd., MS 49-7, Cleveland, OH 44135 USA

2) **Mechanisms of Shearing of γ Precipitates During High Temperature/Low Stress Creep of Superalloy Single Crystals:** *R. Srinivasan*¹; *M. V. Nathal*²; *M. S. Daw*³; *G. F. Eggeler*⁵; *M. J. Mills*¹; ¹The Ohio State University, Matls. Sci. & Eng., 477 Watts Hall, 2041 College Rd., Columbus, OH 43210 USA; ²NASA–Glenn Research Center, Cleveland, OH 44135 USA; ³Clemson University, Dept. of Phys. & Astron., Clemson, SC 29634-0001 USA; ⁵Ruhr-Universität Bochum, Institut für Werkstoffe, Bochum 44801 Germany

3) **Creep and Internal Friction of γ -TiAl-Based Alloys:** *M. Weller*¹; *A. Chatterjee*¹; *G. Haneczok*²; *A. Wanner*³; *F. Appel*⁴; *H. Clemens*⁴; ¹Max-Planck-Institut fuer Metallforschung, Seestrasse 92, Stuttgart 70174 Germany; ²Silesian University, Inst. of Phys. & Chem. of Met., Katowice, Poland; ³Universität Stuttgart, Institut für Metallkunde, Seestrasse 71, Stuttgart 70174 Germany; ⁴GKSS–Research Centre, Inst. for Matls. Rsrch., Geesthacht 21502 Germany

4) **An Overview on the Rate Limiting Factors in the Creep of TiAl:** *W. J. Zhang*¹; *S. C. Deevi*¹; ¹Chrysalis Technologies, Inc., Rsrch. Ctr., 4201 Commerce Rd., Richmond, VA 23234 USA

5) **The Creep Behavior of TiAl+W as a Function of the Fully Lamellar Morphology:** *D. Y. Seo*¹; *H. Saari*¹; *J. Beddoes*¹; *L. Zhao*²; ¹Carleton University, Dept. of Mechl. & Aeros. Eng., Ottawa, Canada; ²Institute for Aerospace Research, Structures, Matls. & Propulsion Lab, Nat'l. Rsrch. Council, Ottawa, Canada

6) **The Effects of Microstructure on the Mechanical Properties of Macroalloyed γ -TiAl Based Alloys:** *J. R.A. Grenfell*¹; *I. P. Jones*¹; *P. Bowen*¹; *W. Voice*²; ¹University of Birmingham, IRC in High Perf. Matls., Elms Rd., Edgbaston, Birmingham, W. Midlands B15 2TT UK; ²Rolls-Royce, Derby UK

7) **A Possibility for Enhancing the Application Temperature of Ti₂AlNb-Based Intermetallic Alloy:** *F. Tang*¹; S. Emura¹; S. Nakazawa¹; M. Hagiwara¹; ¹National Research Institute for Metals, 3rd Rsrch. Grp., 1-2-1 Sengen, Tsukuba, Ibaraki 305-0047 Japan

8) **Phase Transformations and Microstructure Evolution in Multicomponent Gamma Titanium Aluminides:** *Z. Zhang*¹; K. J. Leonard¹; D. M. Dimiduk²; V. K. Vasudevan¹; ¹University of Cincinnati, Matls. Sci. & Eng., Cincinnati, OH 45221-0012 USA; ²Air Force Research Laboratory, Matls. Direct., WL/MLLM, Bldg. 655, WPAFB, Dayton, OH 45433 USA

9) **Microstructure Change in Fully Lamellar Ti-48Al-8Nb Single Crystal During Aging at Elevated Temperatures:** *Y. Yamamoto*¹; M. Takeyama¹; T. Matsuo¹; ¹Tokyo Institute of Technology, Dept. of Metall. & Cer. Sci., 2-12-1 Ookayama, Meguro-ku, Tokyo 152-8552 Japan

10) **Structural Developments in Sputter Deposited TiAlCr Coatings:** *S. Z. Wang*¹; *G. Shao*¹; T. Grosdidier²; B. Bolle²; F. Wang³; P. Tsakirooulos¹; ¹University of Surrey, Sch. of Mechl. & Matls. Eng., Guildford, Surrey GU2 7XH UK; ²Universite de Metz, LETAM CNRS URA-2090, Ile du Saulcy, 57045 Metz, France; ³Academia Sinica, Inst. for Metals Rsrch., Wencui Rd., Shenyang 110015 China

11) **Development of Orthorhombic Aluminide Based Laminated Composites:** *S. Suwas*¹; T. K. Nandy¹; V. V. Bhanu Prasad¹; S. V. Kamati¹; *D. Banerjee*¹; ¹Defence Metallurgical Research Laboratory, Kanchanbagh, Hyderabad 500058 India

12) **Effect of Cooling Rate and Grain Size on Massive Transformation in Ti-Al-Based Alloys:** *U. Prasad*¹; Q. Xu²; M. C. Chaturvedi¹; ¹University of Manitoba, Dept. of Mechl. & Indl. Eng., Winnipeg, Manitoba R3T 5V6 Canada; ²Industrial Technology Centre, 1329 Niakwa Rd. E., Winnipeg, Manitoba R2J 3T4 Canada

13a) **Indentation Creep Studies on Fe3Al Based Iron Aluminides:** *Garima Sharma*¹; R. V. Ramanujan¹; T. R.G. Kutty²; ¹Bhabha Atomic Research Centre, Matls. Sci. Div., C Block, Mod. Labs., BARC, Trombay, Mumbai, Maharashtra 400085 India; ²Bhabha Atomic Research Centre, Radiometall. Div., Trombay, Mumbai, Maharashtra 400085 India

13b) **Creep Damage under Creep-Fatigue Deformation in Lamellar Structured TiAl Alloy:** *Soo Woo Nam*¹; *Young Sam Park*¹; Sun Keun Hwang²; ¹Korea Advanced Institute of Science and Technology, Dept. of Metall. & Ceram. Eng., Yuseong, Taejeon 305-390 Korea; ²19b) **Characterizing the Mechanical Behavior of MEMS Serpentine Springs:** *Carolina L. Elmufdi*¹; K. J. Hemker¹; ¹Johns Hopkins University, Dept. of Mech. Eng., Baltimore, MD 21218 USA

14a) **Thermal Processing of Sputter-Deposited Ni(Al)/Ni3Al Multilayer Films into Ni-Base Superalloys with a Gamma Prime Precipitate Morphology:** *Peter Anderson*¹; *Evan Sperling*¹; *Rajarshi Banerjee*¹; *Hamish Fraser*¹; ¹Ohio State University, Dept. MSE, 2041 College Rd., Columbus, OH 43210-1179 USA

14b) **Mechanical Properties and Deformation Substructure in RuAl Alloys:** *T. K. Nandy*; Q. Feng; M. F.X. Gigliotti; T. M. Pollock; ¹University of Michigan, Matls. Sci. & Eng. Dept., H. H. Dow 2042, 2300 Hayward St., Ann Arbor, MI 48109-2136 USA

15a) **Influence of Thermal Cycling on the Mechanical Properties of Nickel Platinum Aluminide Bond Coats for Thermal Barrier Coatings:** *Deng Pan*¹; M. W. Chen¹; P. K. Wright²; K. J. Hemker¹; ¹Johns Hopkins University, Dept. of Mechl. Eng., Baltimore, MD 21218 USA; ²GE Aircraft Engines, Matls. & Proc. Eng. Dept., Cincinnati, OH 45215 USA

15b) **High Temperature Deformation of Thermal Barrier Coatings Based on Creep of a Nickel Platinum Aluminide Bond Coat:** *Michael Glynn*¹; K. T. Ramesh¹; Kevin Hemker¹; Ken Wright²; ¹Johns Hopkins University, Dept. of Mechl. Eng., G. W. C. Sch. of Eng., 200 Latrobe Hall, 3400 N. Charles St., Baltimore, MD 21218-2686 USA; ²GE Aircraft Engines, 1 Neumann Way, G50, Cincinnati, OH 45215 USA

16a) **Influence of Ion Irradiation on Phase Transformation Behavior of Quenched Ti-48Al-2Nb Alloy during Aging:** *V. D. Melikhov*¹; S. E. Romankov¹; T. V. Volkova¹; ¹Institute of Physics & Technology, 480082, Almaty, Kazakstan

16b) **Thermal Stability of a Full γ -Lamellar-TiAl Based Alloy:** *M. Beschiessner*¹; H. Kestler²; H. Clemens³; F. Jeglitsch⁴; ¹Materials Center Leoben (MCL), Franz-Josef-Str. 13, A-8700 Leoben, Austria; ²Plansee AG, Tech. Ctr., A-6600 Reutte, Austria; ³GKSS Research Centre, Inst. for Matls. Rsrch., Max-Planck Str., D-21502 Geesthacht, Germany; ⁴University of Leoben, Dept. of Physl. Metall. & Matls. Testing, Franz-Josef-Str. 18, A-8700 Leoben, Austria

17a) **High Temperature Creep of Nickel-Base Superalloys: Correlation of the Structural Changes with Deformation:** *A. Epishin*; T. Link; U. Brückner; P. D. Portella;

17b) **Enhanced Superplasticity of High Strength TiAl-(Mo,Si) Alloys for Lightweight Engine Components:** *Sven Knippscheer*¹; Georg Frommeyer¹; José A. Jimenez²; ¹Max-Planck-Institut für Eisenforschung GmbH Max-Planck-Str. 1 40237 Düsseldorf, Germany; ²Centro Nacional de Investigaciones Metallurgicas CENIM, Madrid Spain

18a) **Creep Strengthening of K5 Gamma TiAl Alloy: Formation and Role of Carbide and Silicide Precipitates:** *M. Karadge*¹; Y.-W. Kim²; P. I. Gouma¹; ¹State University of New York, Dept. of Matls. Sci. & Eng., Stony Brook, NY 11794-2275 USA; ²UES Inc., Dayton, OH 45432 USA

18b) **Effect of Lamellar Microstructure Alignment on Mechanical Properties of TiAl Alloys:** *Seung Eon Kim*¹; ¹Korea Institute of Machinery and Materials, Mats. Proc., 66 Sangnam Changwon, Kyungnam 641-010 Korea

19a) **The Combined Effect of Cr and Ag on Oxidation Resistance of Gamma-TiAl Based Alloys:** *Zhaolin Tang*¹; L. Niewolak¹; V. Shemet¹; W. J. Quadackers¹; L. Singheiser¹; ¹Research Center Jülich, Inst. of Matls. & Proc. in Energy Sys. (IWW2), Jülich D-52425 Germany

19b) **Characterizing the Mechanical Behavior of MEMS Serpentine Springs:** *Carolina L. Elmufdi*¹; K. J. Hemker¹; ¹Johns Hopkins University, Dept. of Mechl. Eng., Baltimore, MD 21218 USA

20a) **Decomposition and Formation of β -Ti Phase in Gamma TiAl Base Alloys:** *Satoru Kobayashi*¹; Masao Takeyama¹; Takashi Matsuo¹; ¹Tokyo Institute of Technology, Dept. of Metall. & Ceram. Sci., 2-12-1 Ookayama, Meguro-ku, Tokyo 152-8552 Japan

BARRIERS AND BENEFITS TO INTER-METALLICS: THE BROADER PERSPECTIVE

WEDNESDAY AFTERNOON
MAY 1, 2002

Session Chairs: Doug Berczik, Pratt & Whitney, 400 Main St., MS 114-51, E. Hartford, CT 06108 USA; Ram Darolia, GE Aircraft Engines, 1 Neumann Way, H85, Cincinnati, OH 45215 USA

4:15 PM, INVITED PAPER

Commercializing Intermetallic Alloys: Seeking a Complete Technology: *H. A. Lipsitt*¹; M. J. Blackburn²; D. M. Dimiduk³; ¹Wright State University, Dept. of Mechl. & Matls. Eng., 209 Russ Engineering Ctr., 3640 Colonel Glenn Hwy., Dayton, OH 45435-0001 USA; ²Pratt & Whitney Aircraft, USA; ³Wright-Patterson AFB, 2230 10th St. Rsrch. Lab., AFRL/MLLM, Bldg. 655, Ste. 1, WPAFB, OH 45433 USA

4:45 PM, INVITED PAPER

Opportunities for Intermetallic Compounds in Gas Turbine Demonstrators: *Pat Martin*¹; ¹US Air Force, AFRL/MLLM, 2230 Tenth St., Bldg. 655, Wright-Patterson AFB, OH 45433 USA

5:15 PM, DISCUSSION

PROCESSING AND PROPERTIES OF GAMMA TiAl

THURSDAY MORNING
MAY 2, 2002

Session Chairs: Dennis M. Dimiduk, Air Force Research Laboratory, Matls. & Mfg. Direct., AFRL/MLLM, Wright-Patterson AFB, OH 45433 USA

8:20 AM, INVITED PAPER

Design, Properties and Processing of Novel TiAl Alloys: *F. Appel*¹; M. Oehring¹; J. D.H. Paul¹; U. Lorenz¹; ¹GKSS Research Centre Geesthacht, Inst. for Matls. Rsrch., Max-Planck-Str., Geesthacht, Schleswig-Holstein D-21502 Germany

8:50 AM

Effect of Boron Addition on Grain Refinement and Lamellar Formation in Wrought-Processed Gamma TiAl Alloys: *Y.-W. Kim*¹; D. M. Dimiduk²; ¹UES, Inc., Matls. & Proc. Div., 4401 Dayton-Xenia Rd., Dayton, OH 45432 USA; ²Air Force Research Laboratory, Matls. & Mfg. Direct., AFRL/MLLM, Wright-Patterson AFB, OH 45433 USA

9:10 AM

The Sheet Gamma TiAl Technology Developed Under the Enabling Propulsion Materials/High Speed Civil Transport (EPM/HSCT) Program: Sheet Production and Component Fabrication: *G. Das*¹; P. A. Bartolotta²; H. Kestler³; H. Clemens⁴; ¹Pratt & Whitney, 400 Main St., MS 114-43, E. Hartford, CT 06108 USA; ²NASA GRC, 21000 Brookpark Rd., Cleveland, OH 44135 USA; ³Plansee Aktien-Gesellschaft, A-6600 Reutte, Tirol Austria; ⁴GKSS Research Center, Max-Planck Strasse, D-21502 Geesthacht Germany

9:30 AM, DISCUSSION

10:00 AM, COFFEE BREAK

ELEVATED TEMPERATURE MECHANICAL BEHAVIOR

THURSDAY MORNING
MAY 2, 2002

Session Chairs: Mike Mills, Ohio State University, Dept. of Matls. Sci. & Eng., 477 Watts Hall, 2041 College Rd., Columbus, OH 43210 USA; Haruyuki Inui, Kyoto University, Dept. of Matls. Sci. & Eng., Sakyo-ku, Kyoto 606-8501 Japan

10:30 AM, INVITED PAPER

Optimization of Microstructural Variables for Creep Resistance and Yield Strength in Fully-Lamellar TiAl Alloys: *K. Maruyama*¹; H. Y. Kim¹; D. E. Luzzi²; ¹Tohoku University, Dept. of Matls. Sci., 02 Aobayama, Aoba-ku, Sendai 980-8579 Japan; ²University of Pennsylvania, Dept. of Matls. Sci. & Eng., 3231 Walnut St., Philadelphia, PA 19104-6272 USA

11:00 AM

Creep Behaviour and Mechanisms in a Fully Lamellar Ti-44Al-1Mn-2.5Nb-0.15Gd Alloy: *X. Wu*¹; D. Song²; *K. Xia*¹; ¹University of Melbourne, Dept. of Mechl. & Mfg. Eng., Victoria 3010 Australia; ²Northeastern University, Sch. of Matls. & Metall. Eng., Shenyang, Liaoning 110006 China

11:20 AM

Work Hardening Characteristics of Gamma Based Titanium Aluminides: *J. D.H. Paul*¹; U. Sparka¹; F. Appel¹; ¹GKSS Research Centre Geesthacht, WFP, Geb 45, Inst. for Matls. Rsrch., Max Planck Strasse, Geesthacht D-21502 Germany

11:40 AM

High Temperature Deformation of T₂ Single Crystals in Mo-Si-B System: *K. Ito*¹; K. Ihara¹; M. Fujikura²; M. Yamaguchi¹; ¹Kyoto University, Matls. Sci. & Eng., Yoshida-Honmachi, Sakyo-ku, Kyoto 606-8501 Japan; ²Japan Ultra-High Temperature Materials Research Center, Ltd., 1-3 Higashimachi 3-chome, Tajimi-City, Gifu 507-0801 Japan

12:00 PM, DISCUSSION

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