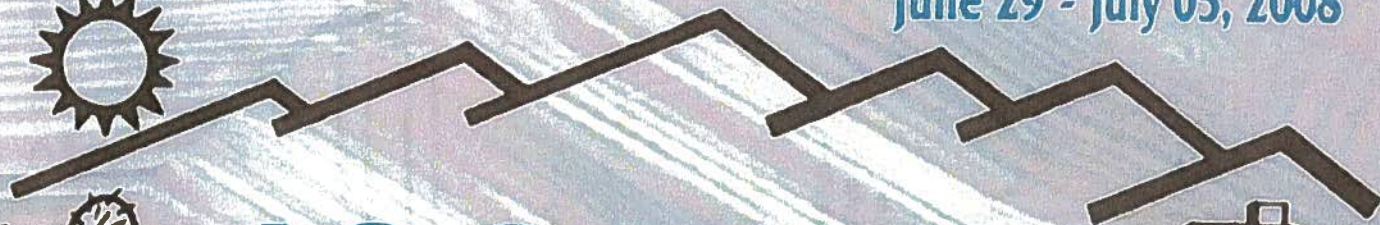
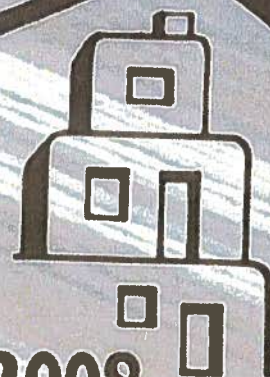


International Conference on Martensitic Transformations

June 29 - July 05, 2008



ICOMAT



SANTA FE, New Mexico, USA • 2008

Conference Proceedings

International Conference on Martensitic Transformations

June 29 - July 05, 2008



Session talks will be held in three concurrent sessions in three rooms: **La Terraza Room**, **New Mexico Room**, and **Santa Fe Room** (each room with about 100 person capacity). All other events, including lunch and breaks, will be held in the **Main Ballroom** unless otherwise stated. The **Stiha Room**, adjacent to the South entrance of the ballroom is also available for discussions or break time.

Sunday, June 29, 2008

6:00-10:00 pm Reception & Registration

Monday, June 30, 2008

7:30-8:15 am CONTINENTAL BREAKFAST & REGISTRATION
8:15-10:15 am Plenary Session
10:15-10:40 am COFFEE BREAK
10:40-12:10 pm Morning sessions
12:10-2:00 pm LUNCH
2:00-3:30 pm Afternoon sessions
3:30-4:00 pm COFFEE BREAK
4:00-5:50 pm Late afternoon sessions
8:15-10:15 pm Poster session – Mezzanine

Tuesday, July 1, 2008

7:30-8:30 am CONTINENTAL BREAKFAST
8:30-10:10 am Plenary Session
10:10-10:30 am COFFEE BREAK
10:30-12:10 pm Morning sessions
12:10-2:00 pm LUNCH
2:00-3:30 pm Afternoon sessions
3:30-4:00 pm COFFEE BREAK
4:00-5:20 pm Late afternoon sessions
5:30-6:00 pm Special Plenary Talk
8:15-10:15 pm Poster session – Mezzanine

Wednesday, July 2, 2008

8:30am-7:00pm Excursion to Taos or Bandelier
8:00-10:30am International Advisory Committee Meeting (El Dorado)

Thursday, July 3, 2008

7:30-8:30 am FULL BREAKFAST
8:30-10:10 am Early Morning Sessions
10:10-10:30 am COFFEE BREAK
10:30-12:10 pm Morning sessions
12:10-2:00 pm LUNCH – ON YOUR OWN
2:00-3:30 pm Afternoon sessions
3:30-4:00 pm COFFEE BREAK
4:00-5:20 pm Late afternoon sessions
6:30-7:30 pm RECEPTION – LA TERRAZA
7:30-10:00 pm BANQUET – MAIN BALLROOM

Friday, July 4, 2008

7:30-8:30 am FULL BREAKFAST
8:30-10:10 am Early Morning Sessions
10:10-10:30 am COFFEE BREAK
10:30-12:10 pm Morning sessions
12:10-2:00 pm LUNCH – ON YOUR OWN
2:00-3:30 pm Afternoon sessions
3:30-4:00 pm COFFEE BREAK
4:00-5:20 pm Late afternoon sessions
5:30-5:45 pm Plenary – Conference closing

Cover image provided by: Michael Morin (Lyon, France)

THEME

We aspire to new heights in bringing the International Conference on Martensitic Transformations (ICOMAT) to Santa Fe's elevation of 7000 feet (2100 meters). The area boasts a unique multicultural fusion of Spanish, Pueblo Indian, and Wild West Cowboy, fostering a spirit of creative innovation best expressed in its famous art colonies.

This creative spirit grounded in intellectual diversity transcends art in the historic and current role of the region's national laboratories of Los Alamos and Sandia, pacing the forefront of interdisciplinary science-based technology creation.

In the spirit of Santa Fe, a central theme of this ICOMAT is INTEGRATION across many dimensions. First and foremost is the tighter integration of science and engineering in the adaptation of predictive science to the creation of new martensitic materials. Second is the integration of diverse scientific disciplines in the creative science that has so effectively advanced our fundamental understanding of martensitic phenomena. Third is the transfer of fundamental knowledge across classes of materials and areas of applications. Our fourth dimension is the integration of theory and experiment as both computational power and novel instrumentation continue to advance in parallel.

An allied local theme of COMPLEXITY draws on the leading role of Santa Fe Institute and Los Alamos scientists in bringing the predictive theory of complex systems to a new level of realism in support of technological applications.

The allied theme of INNOVATION appeals to the culture of intellectual diversity that underpins human creativity in art, science and engineering, offering the greatest potential to deliver responsible technology meeting our ever-evolving societal needs. A "Grand Masters" panel discussion is planned for senior contributors to our field to assess lessons learned from historic creative innovations in the science and technology of martensite. This will include a 55-year perspective on the seminal contribution of the Wechsler-Lieberman-Read and Bowles-Mackenzie theories of martensite crystallography.

SCOPE

While invited speakers will be selected to emphasize these conference themes and contributed papers are also encouraged to consider these themes, we welcome papers from the full range of topics traditionally covered by the ICOMAT conference series.

This includes:

- (i) the science and technology of martensitic transformations across all classes of materials including biological systems,
- (ii) other transformations including coupled displacive and diffusional transformations,
- (iii) aging and tempering of martensitic materials,
- (iv) shape-memory,
- (v) ferroic and multiferroic materials,
- (vi) from fundamentals of kinematics, structure, thermodynamics, mechanisms and kinetics to
- (vii) diverse technological applications,
- (viii) new theoretical approaches and novel experimental methods.

HISTORY of ICOMAT

1. Kobe, Japan (May 10-12, 1976)
2. Kiev, Ukraine (May 14-21, 1977)
3. Boston, MA, USA (June 24-29, 1979)
4. Leuven, Belgium (August 8-12, 1982)
5. Nara, Japan (August 26-30, 1986)
6. Sydney, Australia (July 3-7, 1989)
7. Monterey, CA, USA (July 20-24, 1992)
8. Lausanne, Switzerland (August 20-25, 1995)
9. Bariloche, Argentina (December 7-11, 1998)
10. Helsinki, Finland (June 10-14, 2002)
11. Shanghai, P.R. China (June 14-17, 2005)
12. Santa Fe, NM, USA (June 29-July 5, 2008)

USA ORGANIZING COMMITTEE

Prof. Gerhard Barsch (Penn State)
Prof. Kaushik Bhattacharya (Caltech)
Prof. Cate Brinson (Northwestern Univ.)
Prof. Mark DeGraef (Carnegie Mellon Univ.)
Dr. Tom Duerig (Nitinol Devices & Components)
Prof. Ryan Elliott (Univ. Minnesota)
Dr. Jason Lashley (Los Alamos)
Prof. Valery Levitas (Texas Tech.)
Dr. Turab Lookman (Los Alamos)
Dr. Jamie Morris (ORNL)
Prof. Bob O'Handley (MIT)
Prof. Alex Roytburd (Univ. Maryland)
Dr. Steve Shapiro (BNL)
Dr. George Spanos (Naval Research Lab)
Prof. Ed Stern (Univ. Washington)
Dr. Lee Tanner (LBL)
Prof. Manfred Wuttig (Univ. Maryland)

INTERNATIONAL ADVISORY COMMITTEE

Prof. G. Airoidi (Italy)
Prof. J.-E Bidaux (Switzerland)
Prof. E. Cesari (Spain)
Prof. D. Dunne (Australia)
Prof. D.V. Edmonds (England)
Prof. G. Eggeler (Germany)
Prof. G.S. Firstov (Ukraine)
Prof. C. Friend (England)
Prof. E. Gautier (France)
Prof. X. Jin (China)
Prof. T. Kakeshita (Japan)
Prof. T. Maki (Japan)
Prof. S. Miyazaki (Japan)
Prof. B.C. Muddle (Australia)
Prof. M. Nishida (Japan)
Prof. G.B. Olson (USA)
Prof. A. Planes (Spain)
Prof. R.C. Pond (England)
Prof. M. Sade (Argentina)
Dr. A.B. Saxena (USA)
Dr. Kari Ullakko (Finland)
Prof. J. Van Humbeeck (Belgium)
Prof. L.C. Zhao (China)

CO-CHAIRS

Prof. Gregory B. Olson
Wilson-Cook Professor of Engineering Design
Northwestern University, Dept. Mat. Sci. & Eng.
Evanston IL 60208-3108 USA
g-olson@northwestern.edu
Chief Science Officer, QuesTek Innovations LLC
Evanston IL 60201 USA

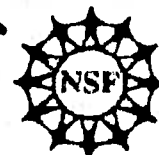
Prof. David S. Lieberman (quasi-retired)
Department of Materials Science and Engineering
University of Illinois at Urbana-Champaign
Urbana, IL 61801 USA
640 Alta Vista, Santa Fe, NM 87505, USA
ph. (505) 983-5953

Dr. Avadh B. Saxena
Deputy Group Leader, T-11, B262
Theoretical Division & Center for Nonlinear Studies
Los Alamos National Laboratory
Los Alamos, NM 87545 USA
ph. (505) 667-5227 / fax. (505) 665-4063
e-mail: icomat@lanl.gov / avadh@lanl.gov

HONORARY MEMBERS OF THE COMMITTEE

Prof. M. Ahlers (Argentina)
Prof. J. Beyer (Netherlands)
Prof. H.K.D.H. Bhadeshia (England)
Prof. L. Delaey (Belgium)
Prof. F. Fujita (Japan)
Prof. R. Gotthardt (Switzerland)
Prof. G. Guenin (France)
Prof. E. Hornbogen (Germany)
Prof. T.Y. Hsu (China)
Prof. P. Kelly (Australia)
Prof. N. Kennon (Australia)
Prof. T. Ko (China)
Prof. Y.N. Koval (Ukraine)
Prof. G. Krauss (USA)
Prof. J. Ortin (Spain)
Prof. K. Otsuka (Japan)
Prof. W.S. Owen (USA)
Prof. J. Pietikainen (Finland)
Prof. T. Saburi (Japan)
Prof. V. M. Schastlivtsev (Russia)
Prof. P. Schlossmacher (Germany)
Prof. K. Shimizu (Japan)
Prof. C.M. Wayman (USA)

We thank the following CONFERENCE SPONSORS for their support:



Conference material created by: Adam Shipman, Ellie Vigil, Kelle Ramsey and Charlotte Carter
of the Center for Nonlinear Studies at Los Alamos National Laboratory.

Monday Schedule



International Conference on Martensitic Transformations

June 29 - July 05, 2008

ICOMAT
SANTA FE, New Mexico, USA • 2008

Monday, June 30, 2008

Plenary Session – Opening and Tribute – Session Chair: Greg Olson – Main Ballroom

- 8:15-8:30am Opening remarks: GREGORY OLSON (Northwestern University)
Conference Welcome: DR. TOM BOWLES (Scientific Advisor to the Governor of New Mexico, Bill Richardson)
- 8:30-8:55am Tribute to Marvin Wayman: DRUCE DUNNE, KAZUHIRO OTSUKA, KEN'ICHI SHIMIZU
- 8:55-9:20am Tribute to Walter Owen: SCHOEN, MICA GRUJICIC, GREGORY OLSON
- 9:20-9:50am Tribute to F.E. Fujita: RYUICHIRO OSHIMA
- 9:50-10:15am Tribute to Juha Pietikainen: KARI ULLAKKO
- 10:15-10:40am **Coffee break – Main Ballroom**

Morning Sessions: A: La Terraza Room, B: New Mexico Room, C: Santa Fe Room

M2A. Mechanism & Kinetics: Nucleation – Session Chair: David Edmonds

- 10:40-11:10am A.G. KHACHATURYAN (Rutgers University, New Jersey, USA)
Three-Dimensional Heterogeneous Nucleation in Martensitic Transformation (Invited)
- 11:10-11:30am M. HAYAKAWA, M. TAMAKI, AND S. HASE (Tottori University, Japan)
Density and Characterization of the Martensite Embryos in Yttria Doped Zirconia
- 11:30-11:50am A. IBARRA, J. SAN JUAN, D. CAILLARD, AND M.L. NO (EHU, Bilbao, Spain)
Martensite Nucleation on Dislocations in Cu-Al-Ni Shape Memory Alloys Studied by in situ TEM
- 11:50-12:10pm C. SHEN, J. LI, AND Y. WANG (Ohio State University, USA)
Activation Pathway of Martensitic Transformations

M2B. Advanced Characterization I – Session Chair: Takuya Ohba

- 10:40-11:10am L. MULLER, C. GUTT, A. MADSEN, G. GRUBEL, T.R. FINLAYSON, AND U. KLEMRADT (Aachen University, Germany)
Unexpected Dynamics in the Vicinity of the Martensitic Transformation of Au-Cd Revealed by Photon Correlation Spectroscopy of Coherent X-rays (Invited)
- 11:10-11:30am H.E. KARACA, I. KARAMAN, S. BADAQSHAN, B. BASKARAN, Y. CHUMLYAKOV, D. NIKLASCH, AND H.J. MAIER (Texas A&M University, USA)
Shape Memory Behaviour of NiFeGa(Co) Ferromagnetic Shape Memory Single Crystals
- 11:30-11:50am D. NIKLASCH, H.J. MAIER, I. KARAMA, AND Y.I. CHUMLYAKOV (Univ. of Paderborn, Germany)
In-situ Characterization of Stress-Induced Martensite and Related Magnetic Domain Structure in Ni-Fe-Ga Ferromagnetic Shape Memory Alloy Single Crystals
- 11:50-12:10pm B. MALARD, G. GEANDIER, P. BASTIE, S. BERVEILLER, AND E. PATOOR (Institute of Physics, Prague, Czech Republic)
Microdiffraction Analysis During the Mechanically-Induced Martensite Phase Transformation by Synchrotron Radiation

M2C. Physics of Phase Stability I – Session Chair: Winfried Petry

- 10:40-11:10am E.A. STERN (University of Washington, Seattle, USA)
Local Disorder in Structural Phase Transformations and the "Precursor" Martensite Transition (Invited)
- 11:10-11:30am M. MANLEY, J.W. LYNN, Y. CHEN, AND G.H. LANDER (Lawrence Livermore National Lab, USA)
Intrinsically Localized Mode in α -U as a Precursor to a Solid-State Phase Transition
- 11:30-11:50am R. S. ELLIOTT, J. A. SHAW, AND N. TRIANTAFYLIDIS (University of Minnesota, USA)
A Model of Stress- and Temperature-Induced Martensitic Transformations in Perfect Bi-atomic Crystals
- 11:50-12:10pm B.K. MUIITE AND U. SALMAN (CNRS-ONERA, France)
A Numerical Comparison of Geometrically Linear and Nonlinear Elasticity Models for the Square to Rectangle Phase Transformation

- 12:10-2:00pm **Lunch – Main Ballroom**

Monday, June 30, 2008

Afternoon Sessions: A: La Terraza Room, B: New Mexico Room, C: Santa Fe Room

M3A. Thermodynamics & Kinetics I – Session Chair: Shuichi Miyazaki

- 2:00-2:30pm P. MULLNER (Boise State University, Idaho, USA)
Twin-Microstructure, Line Defects, and Magnetoplasticity in Ni-Mn-Ga (Invited)
- 2:30-2:50pm S. AKSOY, T. KRENKE, M. ACET, E.F. WASSERMANN, X. MOYA, L. MANOSA, AND A. PLANES (University of Duisburg, Germany)
Influence of Magnetic Field on Martensite Nucleation in Ni-Mn-Based Heusler Magnetic Shape Memory Alloy
- 2:50-3:10pm A. KROGER, S. DZIASZYK, CH. SOMSEN, A. DLOUHY, AND G. EGGELER (Ruhr-Universitat Bochum, Germany)
In-situ TEM Observations of Martensitic Transformations in Ni-Rich Single Crystals with Coherent and Aligned Precipitates
- 3:10-3:30pm M. NISHIDA, N. KIZAKIBARU, AND M. MATSUDA (Kyushu University, Fukuoka, Japan)
Determination of Transformation Site of Multistage Martensitic Transformations in Aged Ni-Rich Ti-Ni Alloys

M3B. Advanced Characterization II – Session Chair: Yasukazu Murakami

- 2:00-2:30pm G. SPANOS, D.J. ROWENHORST, R.A. MASUMURA, K.E. KNIPLING, AND R.W. FONDA (Naval Research Lab, Washington D.C., USA)
Three Dimensional Analysis of Ferrous Martensites (Invited)
- 2:30-2:50pm S.P. VENKATESWARAN, A. BUDRUK, AND M. DE GRAEF (Carnegie Mellon University, Pittsburgh, USA)
Antiphase Boundaries and Magnetic Domain Reversibility in Heusler Ni₂MnGa
- 2:50-3:10pm H. KUSHIDA, T. TERAI, T. FUKUDA, T. KAKESHITA, T. OSAKABE, AND K. KAKURAI (Osaka University, Japan)
Neutron Diffraction Study of Stress-Induced New Phase in Ni₂MnGa
- 3:10-3:30pm S. KUSTOV, M. CORRO, E.CESARI, AND J. DUTKIEWICZ (Universitat de les Illes Balears, Palma de Mallorca, Spain)
Dynamics of Elastic and Magnetic Domain Boundaries in Ni-Fe-Ga Ferromagnetic Shape Memory Alloys Studied by Mechanomagnetic Spectroscopy

M3C. Physics of Phase Stability II – Session Chair: Bob Albers

- 2:00-2:30pm B. HARMON (Ames Lab, Iowa, USA)
Phonons, Energy Landscapes, and Electronic Structure (Invited)
- 2:30-2:50pm P. VORDERWISCH AND S.M. SHAPIRO (Bragg Institute, ANSTO, Australia)
Neutron Scattering Studies of the Ferromagnetic Shape Memory Alloy Ni₂MnGa
- 2:50-3:10pm T. MEHADDENE, J. NEUHAUS, W. PETRY, K. HRADIL, P. LINK, AND PH. BOURGES (Technical University of Munich, Germany)
Lattice Dynamics of Ferromagnetic Shape Memory Alloys from Inelastic Neutron Scattering
- 3:10-3:30pm T.R. FINLAYSON (University of Melbourne, Australia)
Electronic Instabilities and Martensitic Transformations
- 3:30-4:00pm Coffee break – Main Ballroom**

Monday, June 30, 2008

Late Afternoon Sessions: A: La Terraza Room, B: New Mexico Room, C: Santa Fe Room

M4A. Thermodynamics & Kinetics II – Session Chair: Trevor Finlayson

- 4:00-4:20pm V. RECARTE, J.I. PEREZ-LANDAZABAL, C. GOMEZ-POLO, V. SANCHEZ-ALARCOS, J.E. CESARI, AND J. DUTKIEWICZ (Universidad Publica de Navarra, Spain)
A Magnetocaloric Effect Linked to Structural and Magnetic Transitions in Ferromagnetic Shape Memory Alloys
- 4:20-4:40pm I. KARAMAN, H.E. KARACA, B. BASARAN, Y. CHUMLYAKOV, AND H.J. MAIER (Texas A&M University, USA)
Magnetic Field-Induced Phase Transformation in NiMnCoIn Shape Memory Alloys
- 4:40-5:00pm M. YASUI, K. HATA, T. FUKUDA, AND T. KAKESHITA (Osaka University, Japan)
Stress-Temperature Phase Diagram of Ni₂MnGa
- 5:00-5:20pm R. AHLUWALIA AND M. BOUVILLE (Institute of Materials Research and Engineering, Singapore)
Phase-Field Study of the Interplay Between Diffusive and Displacive Phase Transformations
- 5:20-5:40pm F.J. PEREZ-RECHE, L. TRUSKINOVSKY, AND G. ZANZOTTO (Ecole Polytechnique, Palaiseau, France)
Martensitic Transformations, Spin Models, and Automata

M4B. Transformation Kinematics & Interfaces I – Session Chair: Jim Smith

- 4:00-4:20pm T. NISHIURA AND M. NISHIDA (Kyushu University, Fukuoka, Japan)
Trace Analysis of Habit Plane Variants of B19' Martensite in Ti-Ni Shape Memory Alloy
- 4:20-4:40pm Y. SUZUKI, J. B. BETTS, T. SALEH, A. MIGLIORI (Los Alamos National Lab, USA)
Temperature as a Driver for Localization in Plutonium
- 4:40-5:00pm X. MA AND R.C. POND (South China University of Technology, Guangzhou, China)
Martensitic Transformation Crystallography in Pu-Ga Alloys
- 5:00-5:20pm A.J. CLARKE, R.D. FIELD, R.J. MCCABE, P.O. DICKERSON, J.G. SWADENER, C.M. CADY, D.W. BROWN, R.E. HACKENBERG, AND D.J. THOMAS (Los Alamos National Lab, USA)
Shape Memory Effect Deformation Structures in U-14at.%Nb Martensite
- 5:20-5:40pm V. KRAPOSHIN, A. TALIS, AND N. VAN THUAN (Moscow State Technical University, Russia)
Derivation of Unit Cells for the Monoclinic 7R(NiAl) and Rhombohedral R(NiTi) Martensites as Constructions of Algebraic Geometry

M4C. Polydomain Structure I – Session Chair: Armen Khachaturyan

- 4:00-4:30pm K. BHATTACHARYA (California Institute of Technology, USA)
Effective Properties of Polycrystalline Active Materials (Invited)
- 4:30-5:00pm T. LOOKMAN (Los Alamos National Lab, USA)
Ferroelastic Interfaces: Fringing Fields, Size and Shape Effects (Invited)
- 5:00-5:20pm J. BALL AND K. KOUMATOS (Oxford University, UK)
An analysis of Nonclassical Austenite-Martensite Interfaces in CuAlNi
- 5:20-5:40pm A. JACOBS (University of Toronto, Canada)
Testing the Theory of Domain Patterns in Ferroelastics

5:40-8:15pm Dinner – On your own

8:15-10:15pm Poster Session 1 – Mezzanine

Monday June 30, 2008

Poster Session 1 – Mezzanine

- 1) A.I. LOTKOV, V.N. GRISHKOV, V.I. KOPYLOV, AND A.A. BATURIN (Institute for Strength Physics and Materials Science, Tomsk, Russia)
The Martensitic Transformations and Shape Memory in Ultrafine Grained TiNi-Based Alloys Produced by Severe Plastic Deformations
- 2) M. MURASOV, L. DUPREZ, AND J. VAN HUMBEECK (Katholieke University Leuven, Belgium)
Effect of Cold Rolling and Thermocycling on the Parameters of Martensitic Transformations in Fe(16~25)MnC Alloys
- 3) H. TIAN, D. SCHRYVERS, AND J. VAN HUMBEECK (University of Antwerp, Belgium)
TEM Study of the Surface of a Ni-Ti Shape Memory Micro-Wire
- 4) D. XUE, L. ZHANG, H. BAO, W.F. LIU, AND X. REN (Xi'an Jiaotong University, China)
Aging Effect in Paraelectric State of Ferroelectrics
- 5) NYAYADHISH, B.C. MAJI, AND M. KRISHNAN (Bhabha Atomic Research Center, Mumbai, India)
Martensitic Transformation, Omega Transformation and Pseudoelasticity in Aged T-24 at%Nb Alloy
- 6) G. STEINER, M. PETERLECHNER, T. WAITZ, AND H.P. KARNTHALER (University of Vienna, Austria)
Martensitic Phase Transformations in Nanostructured NiTi and NiTiHf Shape Memory Alloys Processed by Severe Plastic Deformation and Annealing
- 7) C. SOBRERO, J. MALARRIA, R. BOLMARO, AND M. SADE (Instituto de Fisica Rosario, Argentina)
In situ XRD Measurements of Parent Phase Texture and Thermally Induced Martensite Variants in Cu-Al-Ni-Ti Tapes
- 8) D. WANG, Z. ZHANG, Y. ZHOU, Y. WANG, G. FAN, X. DING, J. SUN, AND X. REN (Xi'an Jiaotong University, China)
Phase Diagram of Ti(50)Ni(50-x)Fe(x) Strain Glass
- 9) J. LIU, N. SCHEERBAUM, D. HINZ, AND O. GUTFLEISCH (Institute for Metallic Materials, Dresden, Germany)
Structure and Magnetic Properties of Magnetic Shape Memory Ni(52)Fe(17)Ga(27)Co(4) Powder and Bulk Samples
- 10) H. BAO-QUAN, D. ZHI-ZHONG, C. JUN, AND B. PEI-KANG (North University of China, Taiyuan, China)
Modification of an Fe(14)Mn(5)Si(9)Cr(5)Ni Alloy by Adding Copper
- 11) PAUL, M. RAO, AND S. SENGUPTA (S.N. Bose National Centre for Basic Sciences, Kolkata, India)
Phenomenological Elasto-plastic Theory of Micro-structure Selection
- 12) P. TARIN, P. LOPEZ-GARCIA, A.G. SIMON, J.M. BADIA, AND N.M. PIRIS (Universidad Politecnica de Madrid, Spain)
Structural Characterization of the alpha <--> beta and Martensitic Transformation in Ti-62222S Alloy
- 13) C. PICORNELL, J. PONS, E. CESARI, AND J. DUTKIEWICZ (Universitat de les Illes Balears, Palma de Mallorca, Spain)
Martensitic Transformation of Ni-Fe-Ga-Mn and Ni-Fe-Ga-Co Alloys: Thermal and Mechanical Behaviours
- 14) C. SEGUI, E. CESARI, AND J. PONS (Universitat de les Illes Balears, Palma de Mallorca, Spain)
Intermartensitic Transformations in Ni-Mn-Ga Alloys: Order and Non-Chemical Effects

- 15) C. GROSSMANN, A. SCHAFER, AND M.F.-X. WAGNER (Ruhr-Universität Bochum, Germany)
Finite Element Simulation of Localized Phase Transformations in Pseudo-elastic NiTi Shape Memory Alloys During Multi-axial Loading
- 16) M.L. CORRO, S. KUSTOV, E. CESARI, F. MASDEU, AND Y.I. CHUMLYAKOV (Universitat de les Illes Balears, Palma de Mallorca, Spain)
Magnetic Transition in the Ferromagnetic State of Ni-Fe-Ga Single Crystals
- 17) SCHAFER, C. GROSSMANN, AND M.F.-X. WAGNER (Ruhr-Universität Bochum, Germany)
Localized Deformation of Pseudo-elastic NiTi Subjected to Uniaxial and Biaxial Loading
- 18) B. LUDWIG, E. BONNOT, L. MANOSA, U. KLEMRADT, AND A. PLANES (Aachen University, Germany)
Comparison of Acoustic Emission During the Martensitic Transformations of Au-Cd and Ni-Al Single Crystals
- 19) V. SANCHEZ-ALARCOS, J.I. PEREZ-LANDEZABAL, V. RECARTE, C. GOMEZ-POLO, J.A. RODRIGUEZ-VELAMAZAN (Universidad Publica de Navarra, Spain)
Effect of Cobalt Addition on the Martensitic and Magnetic Transformations in Ni-Mn-Ga Ferromagnetic Shape Memory Alloys
- 20) V.V. KOKORIN, L.E. KOZLOVA, AND A.E. PEREKOS (Institute of Magnetism, Kiev, Ukraine)
Effect of Cu Addition on the Temperature Hysteresis of Martensitic Transformation in Fe-Co-Based Ferromagnetic Shape Memory Alloys
- 21) J. RODRIGUEZ-ASEGUINOLAZA, I. RUIZ-LARREA, M.L. NO, A. LOPEZ-ECHARRI, AND J. SAN JUAN (EHU, Bilbao, Spain)
Temperature Memory Effects in Cu-Al-Ni Shape Memory Alloys
- 22) P. SCHLOSSER, D. FAVIER, H. LOUCHE, L. ORGEAS, AND Y. LIU (Universites Grenoble, France)
Temperature Full-Field Measurement and Heat Sources Estimation During Superelastic Tests of NiTi Samples
- 23) P. LLOVERAS, T. CASTAN, M. PORTA, A. PLANES, AND A. SAXENA (University of Barcelona, Spain)
Precursor Nanoscale Strain Textures: From Cross-hatched to Mottled Structure
- 24) V. PANCHOLI, M. KRISHNAN, I.S. SAMAJDAR, V. HIWARKAR, V. YADAV, AND N.B. BALLAL (Bhabha Atomic Research Center, Mumbai, India)
Self Accommodation of Bainite Sheaves in Ultra High Strength Steel
- 25) P. SONTAKKE, A. GUPTA, V. HIWARKAR, M. KRISHNAN, AND I. SAMAJDAR (Bhabha Atomic Research Center, Mumbai, India)
Self-Accommodating Microstructure and Intervariant Interfaces of 5M and 7M Martensites in Off-Stoichiometric Ni₂MnGa Alloys
- 26) L. HONG-YAN AND J. XUE-JUN (Shanghai Jiao Tong University, China)
Effect of Surface Mechanical Attrition on Microstructures and Properties of Nano-structured Bainite Steel
- 27) Y.M. ZHOU, Y. WANG, J. ZHANG, X.D. DING, X.B. REN, J. SUN, AND K. OTSUKA (Xi'an Jiao Tong University, China)
Existence of Strain Glass in Defect-Doped TiNi-Based Alloys
- 28) BUDRUK, S.P. VENKATESWARAN, AND M. DE GRAEF (Carnegie Mellon University, Pittsburg, USA)
Magnetoelastic Tweed in Ni-Mn-Ga and Co-Ni-Ga Alloys

- 29) G. MUSSOT-HOINARD, E. PATOOR, AND A. EBERHARDT (ENSAM, Metz, France)
Influence of Resistance Welding on the Behavior of CuAlBe Single-Crystalline Shape Memory Alloys
- 30) DRUKER, A. BARUJ, AND J. MALARRIA (Universidad Nacional de Rosario, Argentina)
The Shape Memory Effect in Fe-Mn-Si Alloy Rolling Sheets
- 31) J. MAN, X.Y. WANG, AND J.H. ZHANG (Shanghai Jiao Tong University, China)
Martensitic Transformation in Mn-Rich g-MnFe Alloy
- 32) W. LIU, L. ZHANG, AND X. REN (National Institute for Materials Science, Tsukuba, Japan)
Aging in Ferroelectrics -- Striking Similarity with Martensite Aging
- 33) J. BUSCHBECK, L. SCHULTZ, AND S. FAHLER (IFW Dresden, Germany)
Structure and Magnetism of Epitaxial Fe-Pd Films for Magnetic Shape Memory Microsystems
- 34) Y. PAYANDEH, F. MERAGHNI, E. PATOOR, AND A. EBERHARDT (ENSAM, Metz, France)
Interfacial Debonding in Epoxy/NiTi SMA Composite
- 35) K.C. ATLI, I. KARAMAN, B. KOCKAR, AND M. HAOUAOUI (Texas A&M University, USA)
Improved Dimensional Stability and Cyclic Response of Ultrafine Grained NiTi Shape Memory Alloys
- 36) B. BASARAN, I. KARAMAN, H.E. KARACA, AND A.I. KARSILAYAN (Texas A&M University, USA)
Utilization of Magnetic Shape Memory Alloys in Energy Harvesting
- 37) Y.F. ZHENG AND B.L. WANG (Peking University, Beijing, China)
Microstructure and Mechanical Properties of Biomedical Ti-Nb-Zr Shape Memory Alloys
- 38) M. MATSUDA, S. YANO, Y. YASUMOTO, T. HARA, Y. YAMABE-MITARAI, AND M. NISHIDA (Kumamoto University, Japan)
Transmission Electron Microscopy Studies of Twins in Ti-Pt Alloy
- 39) S. SORKIN, R.S. ELLIOTT, AND E.B. TADMOR (University of Minnesota, USA)
A Quasicontinuum for Multiscale Crystals Exhibiting Martensite Phase Transformations
- 40) V.S.R. GUTHIKONDA AND R.S. ELLIOTT (University of Minnesota, USA)
An "Effective Interaction Potential" Model for AuCd Based on the Morse Pair-Potential
- 41) V. JUSUF AND R.S. ELLIOTT (University of Minnesota, USA)
Multiscale Kinematics with Centroidal Shift Degrees of Freedom: Phantom Force/Energy Methods and Projection Methods
- 42) S. CAO AND D. SCHRYVERS (University of Antwerp, Belgium)
3D Reconstruction of Ni₄Ti₃ Precipitates in a Ni-Ti Alloy by FIB/SEM
- 43) K. KITAMURA AND Y. YOSHIMI (Nagano National College of Technology, Japan)
Effect of Rolling Reduction on Mechanical Property in Cast Ti-Ni Shape Memory Alloy Plate
- 44) S.H. CHANG, S.K. WU, AND K.N. LIN (National I-Lan University, Taiwan)
Low Frequency Damping Properties of Ni-Mn-Ga Shape Memory Alloys
- 45) D.E. SOTO, F. ALVARADO-HERNANDEZ, H. FLORES, R. OCHOA, S. ASKOY, T. KRENKE, M. ACET, X. MOYA, LL. MANOSA, AND A. PLANES (CIMAV, Chihuahua, Mexico)
Influence of Fe-Addition on Ni-Mn-Ga Ferromagnetic Shape Memory Alloys

- 46) M. MORIN (INSA-Lyon, France)
A New Stress-Induced Martensitic Transformation in a Cu-Al-Be Shape Memory Single Crystal
- 47) X. HUANG, H.-J. LEE, AND A. G. RAMIREZ (Yale University, USA)
Incomplete Transformation Behavior of NiTi Thin Films
- 48) M. KOYAMA, T. SAWAGUCHI, K. OGAWA, T. KIKUCHI, AND M. MURAKAMI (Shibaura Institute of Technology, Koto, Japan)
Effect of Training Treatment on the Shape Memory and the Deformation Behavior for Fe(30)Mn(5)Si(1)Al Alloy
- 49) G. NIMARIO, S.J.G. LIMA, T.A.A. MELO, AND R.M. GOMES (Federal University of Paraiba, Brazil)
Strain Induced Martensite Investigation of Polycrystalline Cu(13.8)Al(4)Ni(0.5)V Shape Memory Alloy
- 50) T.A.A. MELO, S.J.G. LIMA, AND R.M. GOMES (Federal University of Paraiba, Brazil)
Nb and V Modified Cu-Al-Be Shape Memory Alloys
- 51) G.A. THOMAS, J.G. SPEER, D.K. MATLOCK, AND R.E. HACKENBERG (Colorado School of Mines, USA)
Temperature/Time Equivalence in Martensite Tempering
- 52) J. MINGJIANG, C. KE, G. YIJIA, AND J. XUEJUN (Shanghai Jiaotong University, China)
Precipitation During Austempering and Composition Design for Ferromagnetic Shape Memory Effect of Fe-Ni-Co-Ti Alloys
- 53) J. FRENZEL, T. DEPKA, CH. GROSSMANN, K. NEUKING, AND G. EGGELER (Ruhr-Universitat Bochum, Germany)
Functional Fatigue of NiTiCu Shape Memory Spring Actuators
- 54) J. LIU, N. SCHEERBAUM, D. HINZ, AND O. GUTFLEISCH (IFW Dresden, Germany)
Effect of Powderization on Structure and Magnetic Properties of Ni(52)Fe(17)Ga(27)Co(4) Magnetic Shape Memory Alloy
- 55) SEZONENKO, G.S. FIRSTOV, YU.N. KOVAL, AND J. VAN HUMBEECK (Katholieke University Leuven, Belgium)
Effect of Composition and Heat Treatment on Martensitic Transformation in Ni₃Ta High Temperature Shape Memory Alloys
- 56) W.J. WU, K.N. LIN, S.K. WU, AND H.C. LIN (National Taiwan University, Taipei, Taiwan)
Effects of Cold Rolling on the Fe-Mn-Si-Cr-Ni Shape Memory Alloys
- 57) V.K. SRIVASTAVA, R. CHATTERJEE AND R. D. JAMES (University of Minnesota)
Electrical, magnetic and structural properties near the intermartensitic transition in single crystal Ni₄₉Mn₂₉Ga₂₂ Heusler alloy
- 58) MAICH, R.D. McDONALD, J. S. D. THOMA, R.D. FIELD, J. LASHLEY, J.L. SMITH, A. SAXENA, P.A. GODDARD, M-T. SUZUKI, H. HARIMA (Los Alamos National Laboratory)
The shape-memory effect in high magnetic fields: electronically-driven phase transitions in AuZn

Tuesday Schedule



International Conference on Martensitic Transformations

June 29 - July 05, 2008



Tuesday, July 1, 2008

Plenary Session – Grand Masters: Lessons from Historic Innovations – Session Chair: Ken'ichi Shimizu – Main Ballroom

- 8:30-9:00am IPS/WLR Theory: DAVID LIEBERMAN, MONROE WECHSLER
9:00-9:30am IPS/BM Theory: DRUCE DUNNE
9:30-9:50am Elastic Polydomain Theory: ALEKSANDER ROYTBURD
9:50-10:10am Nonlinear Physics/Barsch-Krumhansl: GERHARD BARSCH, AVADH SAXENA
10:10-10:30am **Coffee break – Main Ballroom**

Morning Sessions: A: La Terraza Room, B: New Mexico Room, C: Santa Fe Room

T2A. Current Issues Workshop: Kinematics & Interfaces – Session Chair: Alan Crocker

- 10:30-11:00am P.M. KELLY (University of Queensland, Brisbane, Australia)
The Phenomenological Theory of Martensite Crystallography (PTMC) versus the Topological Model (TM) (Invited)
11:00-11:30am R.C. POND, X. MA, AND J.P. HIRTH (University of Exeter, UK)
A Dislocation Model of Parent-Martensite Interfaces (Invited)
11:30-12:00pm H. LEDBETTER AND S. KIM (University of Colorado, Boulder, USA)
Martensite Crystallography of the delta-alpha Plutonium Transformation
12:00-12:20pm W. ZHANG AND X.-F. GU (Tsinghua University, Beijing, China)
A Discussion on Approaches of Interfacial Misfit Analysis for Irrational Habit Planes (Invited)

T2B. Multiferroics I – Session Chair: Steve Shapiro

- 10:30-11:00am T. KAKESHITA, T. TERAJ, AND T. FUKUDA (Osaka University, Japan)
Control of Crystallographic Domain by Magnetic Field in Ferromagnetic Shape Memory Alloys and an Antiferromagnetic CoO (Invited)
11:00-11:20am R. KAINUMA, W. ITO, K. OIKAWA, AND K. ISHIDA (Tohoku University, Sendai, Japan)
The Ni-Mn-Based Matamagnetic Shape Memory Alloys
11:20-11:40am J.N. ARMSTRONG, M.R. SULLIVAN, A. PLANES, S.Z. HUA, AND H.D. CHOPRA (NSF, USA)
Discovery and Implications of Devil's Staircase in Multiferroics
11:40-12:00pm H. MORITO, K. OIKAWA, A. FUJITA, K. FUKAMICHI, R. KAINUMA, AND K. ISHIDA (Tohoku University, Sendai, Japan)
Stress-Induced Magnetic-Field-Induced Strain in the Co-Ni-Ga Ferromagnetic Shape Memory Alloy
12:00-12:20pm Y. TANAKA, Y. HIMURO, R. KAINUMA, Y. SUTOU, T. OMORI, AND K. ISHIDA (Tohoku University, Sendai, Japan)
Shape Memory and Pseudoelastic Effects due to $\gamma \rightarrow \alpha'$ Martensitic Transformation in Fe-Ni-Co-Al-Based Ferromagnetic Alloys

T2C. Polydomain Structure II – Session Chair: Graeme Ackland

- 10:30-11:00am J. X. ZHANG AND L. Q. CHEN (Penn State University, USA)
Ferroelastic Switching in Piezoelectric and Multiferroic Response of Patterned Nanostructures (Invited)
11:00-11:20am O. KASTNER AND G.J. ACKLAND (Ruhr-Universitat Bochum, Germany)
Principal Investigation of the Dynamics of Martensitic Transformations in 2D Lennard-Jones Lattices
11:20-11:40am M.E. GRUNER, W.A. ADEAGBO, A.T. ZAYAK, AND P. ENTEL (University of Duisburg, Germany)
Ab initio Simulation of Magnetic Field Dependent Properties and Twin Boundary Motion in MSM Heusler Alloys
11:40-12:00pm M. BOUVILLE AND R. AHLUWALIA
Phase-Field Study of the Mechanical Properties of Shape Memory Alloy Nanowire
12:00-12:20pm A.A. LIKHACHEV (Institute for Metal Physics, Kiev, Ukraine)
Effect of Magnetostatic Energy on the Field Induced Superelasticity in Ni-Mn-Ga

- 12:20-2:00pm **Lunch – Main Ballroom**

Tuesday, July 1, 2008

Afternoon Sessions: A: La Terraza Room, B: New Mexico Room, C: Santa Fe Room

T3A. Thermodynamics & Kinetics III – Session Chair: John Ball

- 2:00-2:30pm R.D. JAMES (University of Minnesota, USA)
A Relation Between Compatibility and Hysteresis and its Role in the Search for New Active Materials
(Invited)
- 2:30-2:50pm A.L. ROYTBURD (University of Maryland, USA)
Thermodynamics of Polydomain Martensite
- 2:50-3:10pm Q. SUN AND Y. HE (The Honk Kong University of Science and Technology, Hong Kong)
Role of Material Internal Length Scales in Grain Size Dependence of Stress Hysteresis in SMA Polycrystals
- 3:10-3:30pm D.E. LAUGHLIN, N. JONES, A.J. SCHWARTZ, AND T.B. MASSALSKI (Carnegie Mellon University, Pittsburgh, USA)
Thermally Activated Martensite: Its Relationship to Non-Thermally Activated (Athermal) Martensite

T3B. Multiferroics II – Antoni Planes

- 2:00-2:30pm Y. MURAKAMI, D. SHINDO, R. KAINUMA, K. OIKAWA, AND K. ISHIDA (Tohoku University, Sendai, Japan)
Change in Magnetic Microstructure Near the Martensitic Transformation in a Ni-Fe-Ga Alloy (Invited)
- 2:30-2:50pm M. THOMAS, O. HECZKO, J. BUSCHBECK, U. ROSSLER, L. SCHULTZ, AND S. FAHLER (IFW Dresden, Germany)
Stress Induced Martensite and Magnetically Induced Reorientation in Constrained Epitaxial Ni-Mn-Ga Films
- 2:50-3:10pm R. CHULIST, M. POTSCHKE, A. BOHM, H.-G. BROKMEIER, U. GARBE, C.-G. OERTEL, AND W. SKROTZKI (Technische Universitat Dresden, Germany)
Variant Selection in Cast and Hot Rolled NiMnGa Alloys
- 3:10-3:30pm P. ZHAO, J. CULLEN, AND M. WUTTIG (University of Maryland)
Elastic and Magnetic Characterization of NiMnGa Premartensite

T3C. Physics of Phase Stability III – Ted Massalski

- 2:00-2:30pm D. GUPTA AND D.S. LIEBERMAN (IBM, Yorktown Heights, USA)
Role of Vacancies, Antisite Atoms and Their Complexes in Near Equiatomic beta' Au-Cd and Au-Zn Alloys on Diffusion and Martensitic Transformations (Invited)
- 2:30-2:50pm A. BATURIN, S. SHABALOVSKAYA, A. LOTKOV, AND B. HARMON (Katholieke University Leuven, Belgium)
The Role of Electronic Structure in Realization of Martensitic Transformations in Ti-Based B2 Intermetallic Alloys
- 2:50-3:10pm N. HATCHER, O. YU. KONTSEVOI, AND A.J. FREEMAN (Northwestern University, USA)
New Transformation Path of Martensitic NiTi
- 3:10-3:30pm D.W. BROWN C. N. TUPPER, T. A. SISNEROS, R. D. FIELD, B. CLAUSEN (Los Alamos National Lab, USA)
Crystallographic Reorientation During Shape Memory and Post-Shape Memory Deformation in Uranium 6 Wt% Niobium
- 3:30-4:00pm **Coffee break – Main Ballroom**

Tuesday, July 1, 2008

Late Afternoon Sessions: A: La Terraza Room, B: New Mexico Room, C: Santa Fe Room

T4A. Transformation Kinematics & Interfaces II – Session Chair: Kaneaki Tsuzaki

- 4:00-4:20pm R. DELVILLE, D. SCHRYVERS, J. ZHANG, AND R.D. JAMES (University of Antwerp, Belgium)
TEM Investigation of Twinning in Ternary NiTiX Alloy with Special Lattice Parameters
- 4:20-4:40pm M. KRISHNAN (Bhabha Atomic Research Center, Mumbai, India)
The Relation Between Microstructural Reversibility, {114}B2 Twins and Intervariant Interfaces of the Martensitic Microstructure of Ni-Ti Alloys
- 4:40-5:00pm Y.W. CHAI, H.Y. KIM, H. HOSODA, AND S. MIYAZAKI (University of Tsukuba, Japan)
Interfacial Defects in Ti-Nb Shape Memory Alloys
- 5:00-5:20pm K. DAYAL, K. BHATTACHARYA (Carnegie Mellon University, USA)
Kinetics and Nucleation of Phase Boundaries in Peridynamics

T4B. Multiferroics III – Session Chair: Marc De Graef

- 4:00-4:20pm J.M. BARANDIARAN, P. LAZPITA, J. GUTIERREZ, J. FEUCHTWANGER, M. RICHARD, AND R.C. O'HANDLEY (EHU Bilbao, Spain)
Magnetic Moment Analysis on Non-Stoichiometric Ni-Mn-Ga Ferromagnetic Shape Memory Alloy
- 4:20-4:40pm L. ZHANG AND X. REN (Xi'an Jiaotong University, China)
Novel Electro-Shape-Memory-Effect in La Doped Pb(Zr,Ti)O₃ Relaxor Ferroelectrics
- 4:40-5:00pm H. TIAN, D. SCHRYVERS, AND J. VAN HUMBEECK (University of Antwerp, Belgium)
Micro- and Nano-Structure of a Ni-Ti Shape Memory Micro-Wire
- 5:00-5:20pm J.H. ZHANG, J. MAN, W.Y. PENG, AND T.Y. HSU (Xi'an Jiao Tong University, China)
Antiferromagnetic Transition and Martensitic Transformation in Mn-Rich gamma-MnFe Alloy

T4C. Thermodynamics & Kinetics IV – Session Chair: Minoru Nishida

- 4:00-4:20pm E. BONNOT, R. ROMERO, LL. MANOSA, E. VIVES, AND A. PLANES (University of Barcelona, Spain)
Stress- and Strain-Driven Martensitic Transformations: An Acoustic Emission Study in Single-Crystalline Cu-Zn-Al
- 4:20-4:40pm O.U. SALMAN AND A. FINEL (CNRS-ONERA, France)
Avalanches in Fluctuationless Martensitic Transitions
- 4:40-5:00pm K.J.M. BLOBAUM, J.R. JEFFRIES, M.A. WALL, AND A.J. SCHWARTZ (Lawrence Livermore National Lab, USA)
Enabling the Upper-C Curve in Pu-Ga Alloy TTT Diagrams
- 5:00-5:20pm A.J. SCHWARTZ, M.A. WALL, D.L. FARBER, K.T. MOORE, AND K.J.M. BLOBAUM (Lawrence Livermore National Lab)
Isothermal Martensite and Pressure-Induced delta to alpha' Phase Transformations in a Pu-Ga Alloy

Plenary Talk – Introduction by Chris Wood, Vice President, Santa Fe Institute – Main Ballroom

- 5:30-6:00pm ALAN BISHOP (Los Alamos National Lab)
Complexity in Functional Materials

6:00-8:15pm Dinner – On your own

8:15-10:15pm Poster Session 2 – Mezzanine

Tuesday July 1, 2008

Poster Session 2 – Mezzanine

- 1) M. KASHCHENKO AND V. CHASHCHINA (Ural State Forest Engineering University, Ekaterinburg, Russia)
The Dynamic Theory of bcc-fcc Martensitic Transformation
- 2) IBARRA, J.M. SANJUAN, E.H. BOCANEGRA, AND M.L. NO (EHU, Bilbao, Spain)
Evolution of the Microstructure During Super-elastic Compression Cycling in Cu-Al-Ni Single Crystals and its Influence in Thermo-Mechanical Properties
- 3) V. KOLOMYTSEV, I. KARNAUKHOV, A. PASKO, A. SHPAK, T. SYCH, P. OCHIN, PH. VERMAUT, AND R. PORTIER (Institute of Metal Physics, Kiev, Ukraine)
Martensitic Transformation in Binary Hf(50)Pd(50) Shape Memory Alloy
- 4) E.S. PERDAHIOGLU, H.J.M. GEIJSELAERS, AND J. HUETINK (University of Twente, The Netherlands)
Influence of Plastic Strain on Mechanically Induced Martensitic Transformations
- 5) Y.P. ZHANG, D.S. LI, X. MA, AND X.P. ZHANG (South China University of Technology, Guangzhou, China)
Phase Transformation and Internal Friction Behaviors of Gradient Porosity Ni(50.8)Ti(49.2) Shape Memory Alloys
- 6) L. KAPUTKINA, V. PROKOSHKINA, AND D. KAPUTKIN (Moscow Institute of Steel and Alloys, Russia)
Structure and Properties of Thermomechanically Strengthened Quenched Nitrogen-Containing Steels
- 7) M. BABANLY, V. KOLOMYTSEV, A. PASKO, A. SHPAK, T. SYCH, P. OCHIN, PH. VERMAUT, R. PORTIER, E. CESARI, AND D. RAFAJA (ICMPE-CNRS, France)
Shape Memory Behavior in Some (Ti,Zr,Hf)50(Ni,Cu)50 Alloys Prepared by Glass Devitrification
- 8) D.S. LI, Z.P. XIONG, Y.P. ZHANG, AND X.P. ZHANG (South China University of Technology, Guangzhou, China)
Damping Behavior of the Second-Phase Engineered NiTi Shape Memory Alloys
- 9) K. CHASTAING, P. VERMAUT, R. PORTIER, A. DENQUIN, AND D. CAILLARD (ENSCP, France)
TEM Study of the Martensite Transformations in RuNb Alloy
- 10) Y.H. LEE, E.S. CHOI, Y.S. CHUNG, B.S. CHO, AND T.H. NAM (Gyeongsang National University, South Korea)
Transformation Behavior and Shape Memory Characteristics of Ti(45-x)Ni(5)Cu(x)Cr(at%) (x=0.5-2.0) Alloys
- 11) Y.-W. KIM AND T.-H. NAM (Gyeongsang National University, South Korea)
Shape Memory Characteristics of Ti(50)Ni(20)Cu(30) Strip Fabricated by Arc Melt Overflow
- 12) K. ANDO, T. OMORI, Y. SUTOU, K. OIKAWA, R. KAINUMA, AND K. ISHIDA (Tohoku University, Sendai, Japan)
High Temperature Shape Memory Effect in Co-Al Based Ternary Alloys with HCP Stabilizing Elements
- 13) B. BARTOVA, D. SCHRYVERS, G.A. FIRSTOV, YU.N. KOVAL, A. PRUDNIKOV, AND J. VAN HUMBEECK (Institute of Metal Physics, Kiev, Ukraine)
Crystal Structures in Ni₃Ta High Temperature Shape Memory Alloy
- 14) Y. GE, I. AALTIO, O. SODERBERG, AND S.-P. HANNULA (Helsinki University of Technology)
X-ray and High Resolution Transmission Electron Microscopy Studies of Tetragonal Martensite of Ni-Mn-Ga Alloys

- 15) J. MUNTASELL, J. FONT, E. CESARI, R. SANTAMARTA, J. PONS, AND P. OCHIN (Universitat de les Illes Balears, Palma de Mallorca, Spain)
Ageing behavior of High-Temperature Ni-Mn-Ga Alloys
- 16) J. PFETZING, J. FRENZEL, M.F.-X. WAGNER, AND G. EGGELER (Ruhr-Universitat Bochum, Germany)
Thermo-Mechanical Constraints on Pseudo-elasticity During Nanoindentation of Binary and Ternary NiTi Alloys
- 17) V. DEMERS, V. BRAILOVSKI, S.D. PROKOSHKIN, AND K.E. INAEKYAN (Ecole de Technologie Superieure, Montreal, Canada)
Processing Optimization for Obtaining Nanostructured Ti-Ni Shape Memory Alloys by Severe Cold Rolling and Annealing
- 18) K. INAEKYAN, V. BRAILOVSKI, M.I. PETRZHIK, S. PROKOSHKIN, AND M. FILONOV (Moscow Institute of Steel and Alloys, Russia)
The Effect of Thermomechanical Treatment on Martensitic Transformation in Ti(Nb,Ta) Alloys for Medical Applications
- 19) A.J. CLARKE, R.D. FIELD, R.E. HACKENBERG, D.W. BROWN, H.M. VOLZ, D.J. THOMA, M.K. MILLER, AND K.F. RUSSELL (Los Alamos National Lab, USA)
Atomic Level Examination of Aged U-14at.%Nb
- 20) F. ALVARADO-HERNANDEZ, D.E. SOTO-PARRA, R. OCHOA-GAMBOA, P.O. CASTILLO-VILLA, H. FLORES-ZUNIGA, AND D. RIOS-JARA (CIMAV, Chihuahua, Mexico)
Effect of Co Content on Structural Transitions of Polycrystalline Co-Ni-Ga Ferromagnetic Shape Memory Alloys
- 21) Y. CAO, X. WANG, Q. MENG, AND Y. RONG (Shanghai Jiaotong University, China)
Comparison Between Interfacial Structures of Martensite/Austenite and Bainite/Austenite
- 22) X.D. WANG, N. ZHONG, Y.H. RONG, AND T.Y. HSU (Shanghai Jiaotong University, China)
Development of New Ultra-High Strength Nb-Containing Q-P-T Steel
- 23) G. FAN, Y. ZHOU, K. OTSUKA, AND X. REN (National Institute for Materials Research, Tsukuba, Japan)
Effect of Hydrogen in Ti-Ni-Based Shape Memory Alloys
- 24) S. MORITO, J. NISHIKAWA, T. OHBA, T. FURUHARA, AND T. MAKI (Shimane University, Japan)
The Crystallography of Lath Martensite Formed at Austenite Grain Boundaries in Fe-Ni-Mn Alloy
- 25) T. TERAI, M. YASUI, AND T. KAKESHITA (Osaka University, Japan)
Melting of Charge Ordered Phase by Magnetic Field in Pr(0.55)Ca(0.45)MnO₃ and Nd(0.5)Sr(0.5)MnO₃ Single Crystals
- 26) M.F.-X. WAGNER AND W. WINDL (Ruhr-Universitat Bochum, Germany)
Elastic Constants of B19' Martensite and Strain Energy of a Dislocation in NiTi
- 27) T. HARA, Y. YAMABE-MITARAI, AND M. NISHIDA (National Institute for Materials Research, Tsukuba, Japan)
Analysis of Stacking Structure and Morphology in Ti(50)Pt(x)Ir(50-x) Martensite by HRTEM and HAADF-STEM
- 28) P. MOLNAR, P. SITTNER, V. NOVAK, N. ZARUBOVA, Y. GE, AND O. HECZKO (Institute of Physics, Prague, Czech Republic)
Magnetic Field Induced Strain and Mechanical Training Process in NiMnGa Single Crystal
- 29) J. ZHANG, X. REN, W. YU, K. OTSUKA, AND J. SUN (Xi'an Jiao Tong University, China)
Stress-Induced Strain-Glass to R Transition in Ti-Ni-Fe Strain Glass
- 30) M. TODAI, T. FUKUDA, AND T. KAKESHITA (Osaka University, Japan)
Temperature Dependence of Electrical Resistivity and Diffuse Scattering in Ti(50-x)Pd(x)Fe(14<x<22) Alloys

- 31) P.J. BUENCONSEJO, H.Y. KIM, AND S. MIYAZAKI (University of Tsukuba, Japan)
Effect of Al Addition on the Shape Memory Effect of Ti-Ta Base High Temperature Shape Memory Alloys
- 32) H. BAO, Y. WANG, W.F. LIU, AND X. REN (National Institute for Materials Research, Tsukuba, Japan)
Control of Ferroelectric Aging by Manipulating Point Defects
- 33) J.-H. LEE, T. FUKUDA, AND T. KAKESHITA (Osaka University, Japan)
Effect of Temperature and Magnetic Field on Stability of Austenitic Phase in SUS304L Stainless Steel
- 34) DUVAL, Y. CHEMISKY, M. HABOUSSI, AND T. BEN ZINEB (Nancy University, France)
Modeling of the Martensitic Transformation and Reorientation in SMA Under Thermomechanical Loading Design of Finite Element Adaptive Micro-components
- 35) T. OMORI, Y. SUTOU, R. KAINUMA, AND K. ISHIDA (Tohoku University, Sendai, Japan)
Origin of High Internal Friction in Martensite Phase
- 36) J.I. KIM, H.Y. KIM, AND S. MIYAZAKI (Dong-A University, Busan, South Korea)
Effect of Ni-Content and Aging Time and Temperature on R-Phase Transformation Temperature in Ni-Rich Ti-Ni Alloys
- 37) H. ISHIKAWA, Y. SUTOU, T. OMORI, R.Y. UMETSU, K. OIKAWA, R. KAINUMA, AND K. ISHIDA (Tohoku University, Sendai, Japan)
Martensitic and Magnetic Transformations in Pd-In-Fe Alloys
- 38) M. NAGASAKO, W. ITO, R. UMETSU, K. ITO, R. KAINUMA, AND K. ISHIDA (Tohoku University, Sendai, Japan)
Phase Separation and Martensitic Transformation in Heusler-Type NiMnSb Alloys
- 39) W. ITO, R.Y. UMETSU, K. ITO, K. KOYAMA, A. FUJITA, K. WATANABE, R. KAINUMA, AND K. ISHIDA (Tohoku University, Sendai, Japan)
Freezing of Martensitic Transformation in the NiCoMnIn Metamagnetic Shape Memory Alloy
- 40) M. CHMIELUS, V.A. CHERNENKO, A. HILGER, W.B. KNOWLTON, P. MULLNER, G. KOSTORZ, AND R. SCHNEIDER (Hahn-Meitner-Institut, Berlin, Germany)
Gradient Twin-Microstructure and High-Cycle Magneto-Mechanical Properties of Constrained Ni-Mn-Ga Single Crystals
- 41) Y. HE AND Q. SUN (The Hong Kong University of Science and Technology, Hong Kong)
Role of Material Internal Length Scales in Grain Size Dependence of Stress Hysteresis in SMA Polycrystals
- 42) C. XU, X. CAO, AND G. LI (Heber University of Technology, Tianjin, China)
(225)A Martensite Transformation and Kurdjumov-Sachs Mechanism
- 43) C. XU, J. TIAN, AND B. LIAO (Heber University of Technology, Tianjin, China)
(557)A Martensite Transformation and Nishiyama Mechanism
- 44) D.S. GRUMMON, Y.T. CHENG, X. FEI (Michigan State University, USA)
Thermo-Topodynamic Surfaces by Indentation and Planarization of NiTiSMAs
- 45) F. PRIMA, S. CARRERAS, B. DAILEY, L. JORDAN, T. GLORANT, D. LAILLE, H. LEFAIX, P. LAHEURTE, A. EBERHARDT, R. PORTIER, P. VERMAUT (ENSCP, France)
Microstructural Influence on Superelastic Effect in an Extra Low Modulus Ni Free Ti-Based Alloy
- 46) S.W. KANG, J.M. NAM, Y.W. KIM, AND T.H. NAM (Gyeongsang National University, South Korea)
Crystallization Behaviors of Ti-Ni-Cu Shape Memory Alloys Fabricated by Melt Spinning

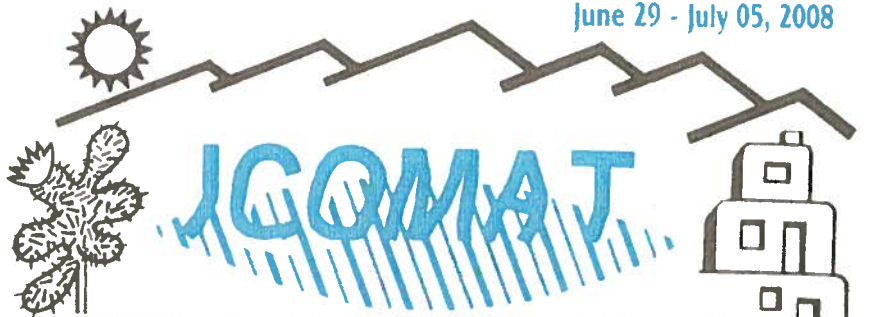
- 47) V.I. LEVITAS, D.W. LEE, D. PRESTON (Texas Tech University, USA)
Phase Field and Micromechanical Modeling of Martensitic Phase Transformations
- 48) C.M. RETFORD, M.E. MANLEY, M. ASTA, AND N. GRONBECH-JENSEN (University of California, Davis, USA)
Site Defects and Their Consequences for Phase Transitions in Ni₅₀Ti₄₇Fe₃: First-Principles Calculations and Experiments
- 49) P.A. GEDOUIN, S. ARBAB CHIRANI, AND S. CALLOCH (ENIB, Brest, France)
A study of Microstructure Evolution Under Thermomechanical Loading Based on the Electric Resistance Variation in CuAlBe Shape Memory Alloys
- 50) H. MATSUO (Kyushu University, Japan)
Stress-Induced Phase Transformation in the Vicinity of Vickers Indentations in 10mol% CeO₂ Doped Tetragonal ZrO₂ Polycrystal
- 51) S. SHABALOVSKAYA AND J. VAN HUMBEECK (Katholieke University Leuven, Belgium)
Peculiarities of Nitinol Surface Topographies and New Regularities in Ni Release. Overview of Biological Implications
- 52) B. YUAN, M. ZHU, Y. GAO, AND C. Y. CHUNG (South China University of Technology, Guangzhou, China)
Forming and Controlling of Pores by Capsule-Free Hot Isostatic Pressing in NiTi Shape Memory Alloys
- 53) M.K. KIM, J. Y. CHOI, J.M. LEE, C.Y. LIM, AND T.H. NAM (Gyeongsang National University, South Korea)
Transformation Behavior and Shape Memory Characteristics of Ti(45-x)Ni(5)Cu(x)Mn(at%)(x=0.5-2.0) Alloys
- 54) H.-S. YANG AND H.K.D.H. BHADSHIA (Pohang University of Science and Technology, South Korea)
Possibility of Los-Carbon, Low-Temperature Bainite
- 55) D. WELDON, A. SAXENA, AND T. LOOKMAN (Rose-Hulman Institute of Technology)
Martensitic Phase Transformation Modeling of AuZn
- 56) P.P. WU, X.Q. MA, J.X. ZHANG AND L.Q. CHEN (Penn State University, USA)
Phase Field Simulations of Magnetic Field Induced Strain in Ferromagnetic Shape Memory Alloy Ni₂MnGa
- 57) R. GROGER, T. LOOKMAN, A. SAXENA (Los Alamos National Lab, USA)
Semi-empirical Studies of Transformation Pathways and Energetics in Plutonium

Thursday Schedule



International Conference on Martensitic Transformations

June 29 - July 05, 2008



SANTA FE, New Mexico, USA • 2008

Thursday, July 3, 2008

Early Morning Sessions: A: La Terraza Room, B: New Mexico Room, C: Santa Fe Room

Th1A. Thermodynamics & Kinetics V – Session Chair: Yunzhi Wang

- 8:30-8:50am J.S. KIM, J.M. NAM, Y.W. KIM, AND T.H. NAM (Gyeongsang National University, South Korea)
Grain Size Dependence of Transformation Temperature in Ti-30Ni-20Cu(at%) Alloy Ribbons
- 8:50-9:10am V.V. KOKORIN (Institute of Magnetism, Kiev, Ukraine)
Temperature Hysteresis of Martensitic Transformations in Shape Memory Alloys
- 9:10-9:30am S. IGNACOVA, V. NOVAK, AND P. SITNER (Institute of Physics, Prague, Czech Republic)
Transformation Behavior of Co(40)Ni(33)Al(27) Shape Memory Single Crystals
- 9:30-9:50am T. FURUHARA, G. MIYAMOTO, K. TAKAHASHI, T. YAMAGUCHI, AND T. MAKI (Tohoku University, Sendai, Japan)
Incomplete Bainite Transformation in Low-Carbon Low Alloy Steels
- 9:50-10:10am T. SAWAGUCHI, K. OGAWA, AND T. KIKUCHI (National Institute for Materials Science, Tsukuba, Japan)
The Stress-Induced Reverse Martensitic Transformation in Fe-Mn-Si Shape Memory Alloys

Th1B. Advanced Characterization III – Session Chair: Vicente Recarte

- 8:30-9:00am D. SCHRYVERS, B. BARTOVA, N. WIESE, AND J.N. CHAPMAN (University of Antwerp, Belgium)
Microstructure of Precipitates and Magnetic Domain Structure in an Annealed Co(38)Ni(33)Al(29) Ferromagnetic Shape Memory Alloys (Invited)
- 9:00-9:20am M. REINHOLD, LINDA KENOYER, W.B. KNOWLTON, AND P. MULLNER (Boise State University, Idaho, USA)
Characterizing Twin Structure and Magnetic Domain Structure of Ni-Mn-Ga Through Atomic Force Microscopy
- 9:20-9:40am S. YANG AND X. REN (National Institute for Materials Science, Tsukuba, Japan)
Evidence for Simultaneous Structural Change at Ferromagnetic Transition--A High Resolution Synchrotron XRD Study
- 9:40-10:00am M. MATSUDA, M. YAMASHITA, K. HIRAYAMA, T. HARA, AND M. NISHIDA (Kumamoto University, Japan)
Transmission Electron Microscopy of Antiphase Boundary-Like Structure Induced by Displacive Transformation in Ti-Pd Shape Memory Alloy

Th1C. Quasimartensitic Transformation/Strain Glass – Session Chair: Victor Myagkov

- 8:30-9:00am X. REN, Y. WANG, K. OTSUKA, AND A. SAXENA (National Institute for Materials Science, Tsukuba, Japan)
Strain Glass--A New Horizon of Martensite Research (Invited)
- 9:00-9:20am Z. Zhang, D. Wang, Y. Wang, Y. Zhou, G. Fan, X. Ding, X. Ren, and J. Sun (Xi'an Jiaotong University, China)
Composition Dependence of Strain Glass Transition in Ti(50-x)Ni(50+x)
- 9:20-9:40am Y. WANG, X. REN, AND K. OTSUKA (National Institute for Materials Science, Tsukuba, Japan)
Relaxation Spectrum of the Strain Glass Transition
- 9:40-10:00am X. DING, T. SUZUKI, X. REN, J. SUN, K. OTSUKA, AND M. SHIMONO (Xi'an Jiaotong University, China)
Molecular Dynamics Simulations of Strain Glass Transition

10:00-10:30am Coffee break – Main Ballroom

Thursday, July 3, 2008

Morning Sessions: A: La Terraza Room, B: New Mexico Room, C: Santa Fe Room

Th2A. Managing Complexity: Materials Design – Session Chair: Etienne Patoor

- 10:30-11:00am FRANCISCA CABALLERO AND H.K.D.K. BHADESHIA (CENIM-CSIC, Madrid, Spain)
Design of Low-Temperature Bainite (Invited)
- 11:00-11:20am J.A. WRIGHT AND C. KUEHMANN (QuesTek Innovations, LLC, USA)
Materials by Design: High Performance Martensitic Steels
- 11:20-11:40am M.D. BENDER AND G.B. OLSON (Northwestern University, USA)
Designing a Precipitation-Strengthened, Superelastic, TiNi-Based Alloy for Endovascular Stents
- 11:40-12:00pm M. MANUEL (University of Florida, USA)
Thermodynamic and Thermomechanical Design of Self-Healing Shape Memory Alloy Reinforced Metal-Matrix-Composites

Th2B. Thermodynamics & Kinetics VI – Session Chair: Druce Dunne

- 10:30-10:50am T. LAGRANGE, G.H. CAMPBELL, P.E.A. TURCHI, B.W. REED, N.D. BROWNING, J.S. KIM, M. TAHERI, J.B. PESAVENTO, AND W.E. KING (Lawrence Livermore National Lab, USA)
In-situ Studies of Martensite Phase Transformations Using the Dynamic Transmission Electron Microscope
- 10:50-11:10am M.-S. CHOI, T. FUKUDA, AND T. KAKESHITA (University of Washington, Seattle, USA)
Iron Content Dependence of R-Phase Transformation Behavior in Ti(50-x)Ni(x)Fe Alloys
- 11:10-11:30am T. FUKUDA, T. KAKESHITA, AND T. OHBA (Osaka University, Japan)
An Interpretation of Premartensitic Behavior in Ti-Ni Based Shape Memory Alloys
- 11:30-11:50am S. QIU, V. B. KRISHNAN, S. A. PADULA II, R. D. NOEBE, D. W. BROWN, B. CLAUSEN, AND R. VAIDYANATHAN (University of Central Florida, Orlando, USA)
In situ Strain, Texture and Phase Fraction Measurements During Thermal-Mechanical Testing of Shape Memory NiTi
- 11:50-12:10pm M. NISHIDA, Y. YASUMOTO, AND M. MATSUDA (Kyushu University, Fukuoka, Japan)
Transmission Electron Microscopy Studies of Twins in Ni-Mn-Ga Alloy

Th2C. Physics of Phase Stability IV – Session Chair: Bob Pond

- 10:30-11:00am H. ZHANG, E. SALJE, A. PLANES, AND X. MOYA (University of Cambridge, UK)
Phase Transition and Landau Potential of the R-Phase in Martensitic NiTiFe (Invited)
- 11:00-11:20am M. SANATI (Texas Tech University, USA)
B2 to Omega-Phase Transformations in Ti3Al2Mo Alloy: A First Principles Approach
- 11:20-11:40am S. FARJAMI AND H. KUBO (Northwestern University, USA)
Incommensurate omega Phase Transformations in Zr-Nb System
- 11:40-12:00pm J. C. LASHLEY, S. M. SHAPIRO, B. L. WINN, C. P. OPEIL, M. E. MANLEY, A. ALATAS, W. RATCLIFFE, P. RISEBOROUGH, T. PARK, B. MIHAILA, R. A. FISHER, AND J. L. SMITH (Los Alamos National Lab, USA)
Observation of a Continuous Phase Transition in a Shape-Memory Alloy

12:00-2:00pm Lunch – On your own

Thursday, July 3, 2008

Afternoon Sessions: A: La Terraza Room, B: New Mexico Room, C: Santa Fe Room

Th3A. Transformation Plasticity I – Session Chair: Gunther Eggeler

- 2:00-2:30pm V.I. LEVITAS (Texas Tech University, USA)
Strain-Induced Martensitic Transformations Under Compression and Shear of Materials in Rotational Diamond Anvil Cell (Invited)
- 2:30-2:50pm D. DUNNE, N. STANFORD, AND H. LI (University of Wollongong, Australia)
Shape Memory in FeMnSi-Based Alloys
- 2:50-3:10pm A.C.R. VELOSO, T.A.A. MELO, S.J.G. LIMA, AND R.M. GOMES (Federal University of Paraiba, Brazil)
Mechanical Properties of Cu(13.8)Al-Ni Alloys Containing V and Nb
- 3:10-3:30pm X.S. LIAO, X.D. WANG, X.F. LI, AND Y.H. RONG (Shanghai Jiao Tong University, China)
Design and Characterization for Advanced High Strength Nb-Containing Dual Phase Steels

Th3B. Advanced Characterization IV – Session Chair: Ryuichiro Oshima

- 2:00-2:30pm E. AEBY-GAUTIER, F. BRUNESEAU, G. GEANDIER, M. DEHMAS, B. APPOLAIRE, S. DENIS, A. MAURO, AND T. BUSLAPS (Ecole des Mines de Nancy, France)
Analysis of the Martensitic Transformation in Ferrous Alloys by in situ High Energy X-ray Diffraction (Invited)
- 2:30-2:50pm S. PROKOSHKIN, A. KOROTTSKIY, V. BRAILOVSKI, AND K. INAEKYAN (Moscow Institute of Steel and Alloys, Russia)
X-ray Diffraction Studies of Thermally and Thermomechanically Treated Binary Ti-Ni Alloys
- 2:50-3:10pm T. OHBA, D. KITANOSONO, S. MORITO, T. FUKUDA, T. KAKESHITA, K. HIROTA, A.Q. BARON, AND S. TSUTSUI (Shimane University, Japan)
Inelastic Scattering of X-ray and Neutron by Ti-Ni(Fe) System
- 3:10-3:30pm R.P. HAGGERTY, P. SARIN, AND W.M. KRIVEN (University of Illinois, USA)
In situ X-ray Diffraction of the HfO₂ Phase Transformation in Air at 1700 C

Th3C. Defect Interactions I – Session Chair: Philippe Vermaut

- 2:00-2:30pm G. FAN, K. OTSUKA, X. REN, T. SUZUKI, AND F. YIN (National Institute for Materials Science, Tsukuba, Japan)
On the Internal Friction due to the Twin Boundary-H Interaction in Martensite (Invited)
- 2:30-2:50pm J. BHATTACHARYA, A. PAUL, M. RAO, AND S. SENGUPTA (Raman Research Institute, Bangalore, India)
Plasticity and Reversibility of Structural Transitions in a Model Solid
- 2:50-3:10pm R. GROGER, T. LOOKMAN, A. SAXENA (LOS ALAMOS NATIONAL LAB, USA)
Dislocation-Induced Elastic Incompatibility and its Effect on Martensitic Phase Transformations
- 3:10-3:30pm B. YUAN, G. YAN, H. LI, C. Y. CHUNG, AND M. ZHU (South China University of Technology, Guangzhou, China)
Internal Friction Behavior of a Porous TiNi Shape Memory Alloy
- 3:30-4:00pm Coffee break – Main Ballroom**

Thursday, July 3, 2008

Late Afternoon Sessions: A: La Terraza Room, B: New Mexico Room, C: Santa Fe Room

Th4A. Aging Phenomena – Session Chair: George Krauss

- 4:00-4:20pm S. W. OOI, Y. R. CHO, J. K. OH, AND H. BHADSHIA (Pohang University of Science and Technology, South Korea)
Martensite and Auto Tempering During Quenching of Low Carbon Steels
- 4:20-4:40pm J. PIETIKAINEN AND G. YANLING (Helsinki University of Technology, Finland)
The Absence of Work Hardening in Steel Quenched and Tempered at Around 623 K
- 4:40-5:00pm M.J. KAUFMAN, H. KIM, R. BANERJEE, Y. KUANG, AND J.D. COTTON (Colorado School of Mines, USA)
Martensitic Transformations in Ti-6Al-4V and Ti-25Al-11Nb and Ti-25Al-11Nb Alloys--At What Point do Diffusion and Ordering Accompany the Transformation?
- 5:00-5:20pm A. BENETEAU, B. APPOLAIRE, E. AEBY-GAUTIER, G. GEANDIER, P. WEISBECKER, A. REIDJAIMIA, AND T. GANNE (Nancy Universite, France)
In situ Synchrotron X-ray Analysis of the Behaviour of a Martensitic Stainless Steel During Ageing

Th4B. Novel SMA Processing – Session Chair: Kari Ullakko

- 4:00-4:20pm A. BANSIDDHI AND D. C. DUNAND (Northwestern University, USA)
Superelastic and Shape-Memory NiTi Foams
- 4:20-4:40pm J.I. PEREZ-LANDEZABAL, C. GOMEZ-POLO, V. RECARTE, V. SANCHEZ-ALAROS, G. BADINI, AND M. VAZQUEZ (Universidad Publica de Navarra, Spain)
Production and Structural Characterization of Ni-Mn-Ga FSMA Wires
- 4:40-5:00pm V. BRAILOVSKI, S.D. PROKOSHKIN, K.E. INAEKYAN, V. DEMERS, AND I.Y. KHMELEVSKAYA (Ecole de Technologie Superieure, Montreal, Canada)
Structure and Functional Properties of the Dislocation-Free Nanostructured Binary Ti-Ni Shape Memory Alloys Obtained by Severe Cold Rolling and Post-Deformation Annealing
- 5:00-5:20pm K. TSUCHIYA, Y. HADA, T. KOIKE, M. KATAHIRA, T. KOYANO, Y. TODAKA, AND M. UMEMOTO (National Institute for Materials Science, Tsukuba, Japan)
Microstructures and Pseudoelasticity of amorphous/Nanocrystalline TiNi Wires Produced by Severe Plastic Deformation.

Th4C. Thin Film/Nanosystems I – Session Chair: Martin Wagner

- 4:00-4:20pm J. SLUTSKER, A. ARTEMEV AND A. ROYTBURD (University of Maryland, USA)
Phase Field Modeling of Domain Structures of Confined Nanoferroelectrics
- 4:20-4:40pm J. SAN JUAN, M.L. NO, AND C.A. SCHUH (EHU, Bilbao, Spain)
Martensitic Transformation at Nano-Scale in Cu-Al-Ni Micro-Nano Pillars
- 4:40-5:00pm L. HELLER, P. SEDLAK, P. SITNER, AND M. LANDA (Institute of Physics, Prague, Czech Republic)
Impact of Heat Effects on Superelasticity
- 5:00-5:20pm A. LUDWIG, R. ZARNETTA, S. HAMANN, A. SAVAN, AND S. THIENHAUS (Ruhr-Universitat Bochum, Germany)
Combinatorial Development of Conventional and Ferromagnetic Ternary SMA Thin Film Systems

6:30-7:30pm Reception, with music and hors d'oeuvres – La Terraza

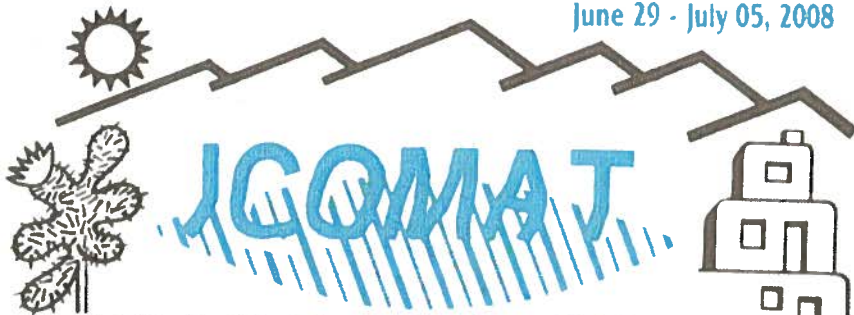
7:30-10:00pm Dinner Banquet, with Native American music and dancers – Main Ballroom

Friday Schedule



International Conference on Martensitic Transformations

June 29 - July 05, 2008



SANTA FE, New Mexico, USA • 2008

Friday, July 4, 2008

Early Morning Sessions: A: La Terraza Room, B: New Mexico Room, C: Santa Fe Room

F1A. Applications I – Session Chair: Rolf Gotthardt

- 8:30-9:00am M.H. WU (Edwards Corp., USA)
Cardiovascular Implants of Nitinol: The Needs to Better Understand the Material (Invited)
- 9:00-9:20am O.W. BERTACCHINI AND D.C. LAGOUDAS (Texas A&M University, USA)
Transformation Induced Cyclic Behavior and Fatigue Properties of Nickel Rich NiTi Shape Memory Alloy Actuators
- 9:20-9:40am Y. CHEMISKY, A. DUVAL V.L. TAHIRI, A. EBERHARDT, AND E. PATOOR (ENSAM, Metz, France)
Modeling the Behavior of an SMA/Elastomer Composite
- 9:40-10:00am B. YUAN, M. ZHU, H. LI, M.Q. ZENG, AND Y. GAO (South China University of Technology, Guangzhou, China)
Surface Modification of Porous TiNi Shape Memory Alloys by Combining Treatment of Passivation and O-III Method

F1B. Defect Interactions II – Session Chair: Werner Skrotzky

- 8:30-9:00am J. BHATTACHARYA, M. RAO, AND S. SENGUPTA (S.N. Bose National Centre for Basic Sciences, Kolkata, India)
Dynamical Selection of Micro-structure in a Model Solid: a Molecular Dynamics Study (Invited)
- 9:00-9:30am Y. YACOBY AND Y. GIRSHBERG (Hebrew University, Jerusalem, Israel)
Ti Off-Center Displacements and the Oxygen Isotope Induced Phase Transition in SrTiO₃ (Invited)
- 9:30-9:50am K.N. LIN, S.K. WU, AND S.H. CHANG (National Taiwan University, Taipei, Taiwan)
Annealing Effect on Transformation Behavior of Ni-Rich Ti(49)Ni(41)Cu(10) Shape Memory Alloy
- 9:50-10:10am J. RODRIGUEZ-ASEGUINOLAZA, I. RUIZ-LARREA, M.L. NO, A. LOPEZ-ECHARRI, AND J. SAN JUAN (Universidad del Pais Vasco, Bilbao, Spain)
Temperature Memory Effect in Cu-Al-Ni Shape Memory Alloys

F1C. Physics of Phase Stability V – Session Chair: Alphonse Finel

- 8:30-9:00am L. MANOSA, X. MOYA, A. PLANES, S. AKSOY, T. KRENKE, M. ACET, O. GUTFLEISCH, J. LYUBINA, M. DEL BARRIO, AND J.L. TAMARIT (University of Barcelona, Spain)
Effects of Pressure and Magnetic Field on the Magnetic Properties and Martensitic Transition of Ni-Mn-X Magnetic Shape Memory Alloys (Invited)
- 9:00-9:20am A.T. ZAYAK, S.P. BECKMAN, M.L. TIAGO, P. ENTEL, AND JAMES R. CHELIKOWSKY (University of Texas, Austin, USA)
Heusler Clusters
- 9:20-9:40am R.M. McDONALD, A. MAICH, J. SINGLETON, D. THOMA, J. LASHLEY, J.L. SMITH, A. SAXENA, P.A. GODDARD, T. SUZUKI, AND H. HARIMA (Los Alamos National Laboratory, USA)
The Shape-Memory Effect in High Magnetic Fields: Electronically-Driven Phase Transitions and Bulk Nanostructure Revealed by the de Haas-van Alphen Effect
- 9:40-10:00am J. OLBRICHT, T. SIMON, CH. GROSSMANN, J. FRENZEL, AND G. EGGELER (Ruhr-Universität Bochum, Germany)
Damping Characteristics of NiTi and NiTiCu Shape Memory Alloys with Single-Step and Two-Step Martensitic Transformations

10:00-10:30am Coffee break – Main Ballroom

Friday, July 4, 2008

Morning Sessions: A: La Terraza Room, B: New Mexico Room, C: Santa Fe Room

F2A. Applications II – Session Chair: Jan Van Humbeeck

- 10:30-11:00am H. KUBO, S. FARJAMI, AND T. MARUYAMA (Kanto Polytechnic University, Oyama, Japan)
Industrial Applications of Fe-Mn-Si Based Shape Memory Alloys (Invited)
- 11:00-11:20am F. KHELFAOUI, M. KOHL, A. MECKLENBURG, AND R. SCHNEIDER (University of Karlsruhe, Germany)
Development of Single Crystalline Ni-Mn-Ga Foil Microactuators
- 11:20-11:40am B. KREVEK, M. KOHL, AND S. SEELECKE (University of Karlsruhe, Germany)
Finite Element Simulation of Magnetic Shape Memory Microactuators
- 11:40-12:00pm H. HOSODA, R. TACHI, T. INAMURA, K. WAKASHIMA, AND S. MIYAZAKI (Tokyo Institute of Technology, Japan)
Shape Memory Characteristics of TiAuCo Biomedical Shape Memory Alloys
- 12:00-12:20pm G.A. LOPEZ, M. BARRADO, M.L. NO, AND J. SAN JUAN (Universidad del Pais Vasco, Bilbao, Spain)
Cu-Al-Ni Shape Memory Alloy Composites with Very High Damping Capacity

F2B. Defect Interactions III – Session Chair: Thomas Waitz

- 10:30-11:00am P. SITTNER, J. PILCH, V. GARTNEROVA, B. MALARD, AND M. LANDA (Institute of Physics, Prague, Czech Republic)
In situ Characterization of Deformation Processes Taking Place During Shape Setting of NiTi Wires (Invited)
- 11:00-11:20am T. INAMURA, H. HOSODA, K. WAKASHIMA, AND S. MIYAZAKI (Tokyo Institute of Technology, Japan)
Plane Defect Inside α'' -Martensite Plate in Ti-Nb-Al Shape Memory Alloy
- 11:20-11:40am S. NANGA, A. PINEAU, B. TANGUY, L. NAZE, AND P.O. SANTACREU (Ecole des Mines de Paris, France)
Plasticity and Strain Induced Martensitic Transformation in Two Austenitic Stainless Steels
- 11:40-12:00pm B.C. MAJI AND M. KRISHNAN (Bhabha Atomic Research Center, Mumbai, India)
Effect of Nitrogen and Nickel on the Microstructure and the Shape Memory Behaviour of Fe-Mn-Si-Cr Alloys
- 12:00-12:20pm Z.Z. DONG, U. KOLTZ, AND A. BERGARMINI (Tianjin University, China)
Precipitated Phases and their Effect on Shape Memory Recovery of Fe-Mn-Si Based Shape Memory Alloys

F2C. Thin Film/Nanosystems II – Session Chair: Elisabeth Gautier

- 10:30-10:50am A. ISHIDA AND M. SATO (National Institute for Materials Science, Tsukuba, Japan)
Shape Memory Behavior of Ti(Ni,Cu)₅₀ Thin Films
- 10:50-11:10am L.V. MYAGKOV, L.E. BYKOVA, AND G.N. BONDARENKO (Russian Academy of Sciences, Siberian Branch, Russia)
Solid-State Synthesis and Martensitic Transformations in Thin Films
- 11:10-11:30am M. HAGLER, C. POHL, V.A. CHERNENKO, M. OHTSUKA, S. BESSEGHINI, AND P. MULLNER (Boise State University, Idaho, USA)
Stress, Magnetic Anisotropy and Martensitic Transformation in Ni-Mn-Ga Thin Films on Si(001) Wafer
- 11:30-11:50am V.A. CHERNENKO, S. BESSEGHINI, V. RECARTE, R. LOPEZ ANTON, A. GAMBARELLA, J.M. BARANDIARAN, S. DOYLE, AND M. OHTSUKA (Institute of Magnetism, Kiev, Ukraine)
Structural and Magnetic Phenomena in NiMnGa/ Substrate Thin Films Composites
- 11:50-12:10pm O. HECZKO, N. SCHEERBAUM, J. LIU, S. FAHLER, AND O. GUTFLEISCH (IFW Dresden, Germany)
First Observation of Magnetically Induced Reorientation (MSM Effect) in Ni-Mn-Ga Fibers
- 12:10-2:00pm Lunch – On your own**

Friday, July 4, 2008

Afternoon Sessions: A: La Terraza Room, B: New Mexico Room, C: Santa Fe Room

F3A. Applications III – Session Chair: Qingping Sun

- 2:00-2:30pm K.W. BAE, H.S. KIM, K.W. KIM, H.J. AHN, AND T.H. NAM (Gyeongsang National University, South Korea)
Application of Ti-Ni Alloys to Li/Sulphide Secondary Battery (Invited)
- 2:30-2:50pm E. CHOI, M.C. KIM, T.H. NAM, B.S. CHO, AND Y.S. CHUNG (Hongik University, South Korea)
Variation of Dynamic Behavior of Shape Memory Alloy Bars in Tension and Compression under Cyclic Loadings
- 2:50-3:10pm H.J. CHOE AND T.H. NAM (Gyeongsang National University, South Korea)
Superelastic Cathode for Li Ion Battery Using Ti-Ni Alloys
- 3:10-3:30pm J. SAN JUAN, X. HUANG, Y. XU, AND A. G. RAMIREZ (Yale University, USA)
Mechanical Property and Shape Memory Behavior of NiTi Amorphous-Crystalline Composite Thin Films

F3B. Martensite Mechanical Behavior I – Session Chair: Petr Sittner

- 2:00-2:30pm S. GOLLERTHAN AND G. EGGELER (Ruhr-Universitat Bochum, Germany)
Fracture Mechanics and Microstructure of NiTi Shape Memory Alloys (Invited)
- 2:30-2:50pm S. DALY, D. RITTEL, AND A. DOROGOY (University of Michigan, USA)
Shear-Dominated Large Scale Deformation in Nitinol
- 2:50-3:10pm B. PIOTROWSKI, A. EBERHARDT, T. BEN ZINEB, AND E. PATOOR (Nancy-University, CNRS, France)
Analysis of the Effect of Niobium Precipitates on the Thermo-Mechanical Behavior of a NiTiNb Shape Memory Alloy
- 3:10-3:30pm D. CARPENTER, A. GELEYNSE, M. CHMIELUS, AND P. MULLNER (Boise State University, Idaho, USA)
Numerical Study of Mechanical Properties of Ni-Mn-Ga Martensite with Various Twin-Microstructures

F3C. High Temperature SMAs – Session Chair: Lluís Manosa

- 2:00-2:30pm S. MIYAZAKI, H.Y. KIM, AND Y. TAKEDA (University of Tsukuba, Japan)
Development of High Temperature Shape Memory Alloys (Invited)
- 2:30-2:50pm D.C. LAGOUDAS AND P.K. KUMAR (Texas A&M University, USA)
Transformation Behavior and Actuation Characteristics of a Ti(50)Pd(40)Ni(10) High Temperature Shape Memory Alloy
- 2:50-3:10pm H.Y. KIM, H. HOSODA, AND S. MIYAZAKI (University of Tsukuba, Japan)
Effect of Interstitial Alloying Elements on Superelastic Properties of Ti-Nb Alloys
- 3:10-3:30pm K. CHASTAING, A. DENQUIN, P. VERMAUT, R. PORTIER, D. CAILLARD, AND J. VAN HUMBEECK (ONERA, Chatillon, France)
High Temperature Shape Memory Alloys Based on the RuNb System
- 3:30-4:00pm Coffee break – Main Ballroom**

Friday, July 4, 2008

Late Afternoon Sessions: A: La Terraza Room, B: New Mexico Room, C: Santa Fe Room

F4A. Transformation Plasticity II: Superelastic – Session Chair: David Dunand

- 4:00-4:20pm C. LEXCELLENT, K. LAVERNHE, S. CALLOCH, E. GIBEAU, AND J.Y. GAUTHIER (Universite de Franche-Comte, Besancon, France)
General Modeling of Phenomenological Thermomechanical Behavior of Shape Memory Alloys
- 4:20-4:40pm A. CROCKER (University of Surrey, UK)
Modeling the Propagation of Cracks Across Martensitic and Bainitic Products
- 4:40-5:00pm M. ELHADROUZ (ENSAM, Metz, France)
Micromechanical Modeling of Magnetic Shape Memory Alloy Ni₂MnGa Single Crystals
- 5:00-5:20pm T. VIDENIC, M. BROJAN, AND F. KOSEL (University of Ljubljana, Slovenia)
One-Dimensional Model of Constrained Recovery in SMA with Non-Constant Young's Modulus

F4B. Martensite Mechanical Behavior II – Session Chair: Kaushik Bhattacharya

- 4:00-4:20pm K. TSUZAKI, Y. KIMURA, T. INOUE, AND F. YIN (National Institute for Materials Science, Tsukuba, Japan)
Enhanced Toughness in an Ultrahigh-Strength Martensitic Steel with Ultrafine Elongated Grain Structure
- 4:20-4:40pm D.S. GRUMMON, Y.-T. CHENG, AND X. FEI (Michigan State University, USA)
Thermo-Topodynamic Surfaces by Indentation and Planarization of NiTi SMAs
- 4:40-5:00pm H.X. ZHENG, J. PFETZING, J. FRENZEL, AND G. EGGELER (Ruhr-Universitat Bochum, Germany)
Reproducibility and Irreversibility of Nanoindentation in Ti(50)Ni(48)Fe(2)
- 5:00-5:20pm H. BEI, S. SHIM, E. DONOHUE, AND E.P. GEORGE (Oak Ridge National Lab, USA)
Size Effects in NiTi Shape Memory Alloy Investigated by Spherical Nanoindentation

F4C. Cyclic Stability – Session Chair: Hassel Ledbetter

- 4:00-4:20pm J. MA AND I. KARAMAN (Texas A&M University, USA)
Room Temperature Aging and Dynamic Strain Recovery During Pseudoelastic Cycling of Titanium-Based Shape Memory Alloys
- 4:20-4:40pm L. SAINT SULPICE, S. ARBAB CHIRANI, K. TAILLARD, AND S. CALLOCH (ENSIETA, Brest, France)
Multiaxial Cyclic Superelasticity of Shape Memory Alloys: Experiments and Modelization
- 4:40-5:00pm I. AALTO, Y. GE, X. LIU, O. SODERBERG, AND S.-P. HANNULA (Helsinki University of Technology)
Effect of Magnetomechanical Cycling on 10M Ni-Mn-Ga Magnetic Shape Memory Material
- 5:00-5:20pm J. DADDA, H.J. MAIER, I. KARAMAN, AND H.E. KARACA (University of Paderborn, Germany)
Functional Degradation of CoNiAl and CoNiGa High-Temperature Shape Memory Alloy Single Crystals at Elevated Temperatures upon Cyclic Deformation

Plenary Session – Closing – Main Ballroom

- 5:30-5:45pm Conference closing