

MS&T'07[®]

**Materials Science & Technology
2007 Conference and Exhibition**

September
16-20, 2007
COBO Center
Detroit, Michigan

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PRELIMINARY PROGRAM

Poster Session

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PROCESSING AND PRODUCT MANUFACTURING	15
STEEL	18

POSTER SESSION

Sunday, September 16, 2007
6:00 PM-8:00 PM

(AUTO-01) Wear Characterization of Boron Steels

Marlon Cruz, Daniel Casellas*, CTM, Spain; Begona Casas, Isaac Valls, Rovalma, S.A., Spain; Jose Manuel Prado, CTM, Spain

(AUTO-02) Development of the Method of Micro-Arc Oxidation for Protective Oxide-Ceramic Plating of Products of Magnesium and Aluminum Alloys - *WITHDRAWN*

Alexandr G Rakoch, Oleg M. Smirnov*, Vasily A Bautin, Sergey A Tulupov, Moscow Steel & Alloys Institute, Russian Federation

(AUTO-03) Computer-Aided Development of the Technology of Automotive Aluminum Parts Stamping and Estimation of Their Service Quality Under Cyclic Loadings - *WITHDRAWN*

Vladislav V Paramonov, Mikhail A Tsepin, Nikolay L Lissunets, Oleg M. Smirnov*, Sergey A Tulupov, Moscow Steel & Alloys Institute, Russian Federation

(AUTO-04) Development of a New Forging Process for the Pin Part of Crankthrow used for Marine Diesel Engine

Kim Inho, Lee Wonjae*, Lee Sungmo, Park Yeoung, Hyundai Heavy Industries Co. Ltd., South Korea

(AUTO-05) Synthesis of Wear Resistant Alloys for Heavy-Duty Components - *WITHDRAWN*

Valery M Kolokoltsev, Magnitogorsk State Technical University, Russian Federation; Oleg M. Smirnov*, Sergey A Tulupov,

Moscow Steel & Alloys Institute, Russian Federation

(AUTO-06) Glass Nanosprings: A Novel Approach for Non-Dissociative Hydrogen Storage - *WITHDRAWN*

Grant Norton*, Washington State University, USA; David McIlroy, Lidong Wang, University of Idaho, USA

(AUTO-07) The Science and Technology of Al-Ga Alloys as a Material for Energy Storage, Transport and Splitting Water

Jerry Woodall*, Jeffrey Ziebarth, Charles Allen, Purdue University, USA

(AUTO-08) The Effect of Nano Metals as Dopants and Catalysts on a Quaternary Li-B-N-H Structure for Hydrogen Storage

Michael Ulrich Jurczyk*, Ashok Kumar, Sessa Srinivasan, Elias Stefanakos, Yogi Goswami, University of South Florida, USA

(AUTO-09) Simultaneous Production and Storage of Hydrogen From Methane Using Pulsed Plasma

Clodomiro Alves*, Claudio F da Silva, Universidade Federal do Rio Grande do Norte, Brazil

(AUTO-10) A Composite Behavior of Hydrogen Desorption Temperature of High-Capacity Nanocomposite Hydrides - *WITHDRAWN*

Tomasz Czujko*, Robert A Varin, University of Waterloo, Canada; Zbig Wronski, Hydrogen, Fuel Cells & Transportation Energy, CANMET Energy Technology Centre, Natural Resources Canada, Canada

(ELEC-01) Epitaxial Growth of Single Crystalline YBCO Thin Films on Non-buffered MgO Substrates and Their Magnetic Behavior for Superconducting

Electronics Application

Mustafa Yavuz^{*}, University of Waterloo, Canada; Atsushi Saito, Shigetoshi Ohshima, Shiro Kambe, Yamagata University, Japan

(ELEC-02) Phase Relationships of the Ba-Sm-Y-Cu-O Coated Conductor

Winnie Wong-Ng^{*}, Guang-Yao Liu, Zhi Yang, Lawrence P Cook, NIST, USA; Amit Goyal, Oak Ridge National Laboratory, USA; Timothy Haugan, Paul Barnes, Air Force Research Laboratory, USA; Terry Holesinger, Los Alamos National Laboratory, USA

(ELEC-03) Influence of Processing Conditions on the Phase Equilibria and Ferroelectric Properties of Bi(Zn_{1/2}Ti_{1/2})O₃-Based Binary Perovskite Solid Solutions

Anurak Prasatkhetragarn^{*}, Supon Ananta, Rattikorn Yimnirun, Chiang Mai University, Thailand; Seunghwa Kwon, Chien-Chin Huang, David P Cann, Oregon State University, USA

(ELEC-04) Electric Fatigue Behavior of PMN-PT Single Crystals

Edward P Gorzkowski^{*}, Ming-Jen Pan, Carl Wu, Naval Research Laboratory, USA

(ELEC-05) Dielectric Properties of Sr²⁺ and Sn⁴⁺ Co-substituted BaTiO₃-based Solid Solution Ceramics

Sining Yun^{*}, Xi'an University of Architecture & Technology, China; Xiaoli Wang, Xi'an Jiaotong University, China; Delong Xu, Hui Li, Xi'an University of Architecture & Technology, China

(ELEC-06) Single Crystal PMN-PT via Solid-State Conversion

Nevin P Sherlock^{*}, Richard J Meyer, Gary L Messing, Pennsylvania State University, USA

(ELEC-07) Effect of Excess PbO on Microstructure and Orientation of PZT(60/40) Films

Chee-Sung Park^{*}, Sung-Mi Lee, Shin-Hee Jun, Jae-Wung Lee, Hyoun-Ee Kim, Seoul National University, South Korea

(ELEC-08) Pb(Zr_{0.52}Ti_{0.48})O₃ Films Grown on Nickel Substrate by Pulsed Laser Deposition

Yonghe Yu^{*}, Man On Lai, Li Lu, National University of Singapore, Singapore

(ELEC-09) Dependences of Electrical Properties on Grain size in PZT(60/40) Films : Dielectric, Ferroelectric, and Piezoelectric Properties

Chee-Sung Park^{*}, Jae-Wung Lee, Seung-Ho Lee, Hyoun-Ee Kim, Seoul National University, South Korea

(ELEC-10) Superparamagnetic Properties of Co-Ti Substituted Barium Hexaferrites Prepared by Coprecipitation Method and Microwave Irradiation

Maria Eugenia Contreras Garcia^{*}, Ana B Martinez Valencia, Jose Ortiz Landeros, Universidad Michoacana de San Nicolas de Hidalgo, Mexico; Juan C Corral Huacuz, Universidad Autonoma de Zacatecas, Mexico

(ELEC-11) Study of Structural and Magnetic Properties of Cd²⁺, Cr³⁺ and Al³⁺ Substituted Spinel Ferrite Systems

Uday Nandlal Trivedi^{*}, Government Engineering College, India; Hiren H Joshi, Kunal B Modi, Saurashtra University, India

(ELEC-12) Preparation and Permeability of Ni-Cu-Zn Ferrites for Multilayer Inductors Operating in the MHz range - *WITHDRAWN*

Joerg Toepfer^{*}, Silvia Kracunovska, Julia Muerbe, Univ. Appl. Sciences Jena, Germany

(ELEC-13) New Possibilities of SHS for Producing High-Temperature Conductive Materials

Korobova Natalya^{*}, Dametova Anara,
Kazakh National University, Kazakhstan

(ELEC-14) Preparation and Electrical Properties of Sr-Ni Substituted Lanthanum Chromite Compounds

Roberto Suarez-Orduna^{*}, Laura Patricia Rivas-Vazquez, Universidad del Papaloapan, Mexico; Juan Carlos Rendon-Angeles, CINVESTAV, Mexico; Kazumichi Yanagisawa, Kochi University, Japan

(ELEC-15) Electrical Properties and Microstructure of La_{0.8}Ca_{0.2}Cr_{1-x}Al_xO₃ (x = 0, 0.5, 0.1) Compounds

Laura Patricia Rivas-Vazquez^{*}, Roberto Suarez-Orduna, Universidad del Papaloapan, Mexico; Juan Carlos Rendon-Angeles, CINVESTAV, Mexico; Kazumichi Yanagisawa, Kochi University, Japan

(ELEC-16) The Effects of Substitution of Sr and Ca for Ba Sites on PTCR Characteristics of Er-doped BaTiO₃

Jee Ae Lee^{*}, Young Ho Han,
Sungkyunkwan University, South Korea,

(ELEC-17) Effects of Additives and Sintering Condition on PTCR Properties of Donor Doped BaTiO₃

Soo Kyong Jo^{*}, Young Ho Han,
SungKyunKwan University, South Korea

(ELEC-18) Electrical Conductivity of 1 wt% Y₂O₃-Doped AlN Ceramics with Varied Heat Treatment

Hyung-Tae Kim^{*}, Sung Min Lee, Won Jin Lee, Korea Institute of Ceramic Engineering & Technology, South Korea

(ELEC-19) Dielectric Tunabilities of BST-Pyrochlore Composite Thin Films

Gil yong Shin^{*}, Sung Hun Yoon, Geun Kyu Choi, Kyung Hyun Ko, Ajou University, South Korea

(ELEC-20) A.C. Conductivity and Dielectric Response of Cd²⁺, Cr³⁺ and Al³⁺ Substituted Spinel Ferrite Systems

Uday Nandlal Trivedi^{*}, Government Engineering College, India; Hiren H Joshi, Kunal B Modi, Saurashtra University, India

(ELEC-21) Development of Piezoelectric Linear Motor

Shin-Hee Jun^{*}, Sung-Mi Lee, Seung-Ho Lee, Hyoun-Ee Kim, Seoul National University, South Korea

(ELEC-22) Fabrication of Piezoelectric Spiral Actuator with Large Displacement using Thermoplastic Co-extrusion

Sung-Mi Lee^{*}, Shin-Hee Jun, Seung-Ho Lee, Hyoun-Ee Kim, Seoul National University, South Korea

(ELEC-23) Tunable Dielectric Behavior of Ba(Zr_xTi_{1-x})O₃ Ceramics and Their Composites with MgO

Tanmoy Maiti^{*}, Ruyan Guo, Amar S Bhalla, Pennsylvania State University, USA

(ELEC-24) TEM Studies of Heteroepitaxial Diamond Films Grown by Bias Enhanced Nucleation

Vidhya Sagar Jayaseelan^{*}, Raj Singh, University of Cincinnati, USA

(ELEC-25) Enhancement of Hydrostatic Figure of Merit in Porous PZT-PZN Ceramics by Aligning Pore Channels

Seung-Ho Lee^{*}, Seoul National University, South Korea; Young-Hag Koh, Catholic University of Daegu, South Korea; Shin-Hee Jun, Sung-Mi Lee, Hyoun-Ee Kim, Seoul National University, South Korea

(ELEC-26) Effects of Rare Earth Oxides

on the Electrical Properties of X8R type BaTiO₃ Ceramic

Seung Je Lee^{*}, Young Ho Han,
Sungkyunkwan University, South Korea

(ELEC-27) The Effect of Molecular Mass of PVB Resin on the Properties of Green Sheet for MLCC Application

Sung-Soo Ryu^{*}, Hyung-Tae Kim, Sung-Min Lee, Korea Institute of Ceramic Engineering and Technology, South Korea; Joongrag Yoon, Samwha Capacitor, South Korea

(ELEC-28) A Modified Two-Stage Mixed Oxide Synthetic Route to Lead Nickel Niobate Powders

Orawan Khamman^{*}, Rattikorn Yimnirun, Supon Ananta, Chiang Mai University, Thailand

(ELEC-29) Preparation of Thick Ceramic Films with Embedded Metal Nanoparticles by Aerosol Deposition Method

Jae-Hyuk Park^{*}, Jun Akedo, National Institute of Advanced Industrial Science and Technology (AIST), Japan

(ELEC-30) Effect of Microstructure on the Reliability of BaTiO₃ Ceramics

Yin-Hua Chen^{*}, Wei-Hsing Tuan, National Taiwan University, Taiwan

(ELEC-31) High Dielectric Constant Ceramic-Polymer Composites through Freeze Casting

Ming-Jen Pan^{*}, Edward P Gorzkowski, US Naval Research Laboratory, USA

(ELEC-32) Synthesis and Properties of Magneto-Dielectric Composites for Radio Frequency Applications

Susan A Farhat^{*}, Martin C Hawley, Shanker Balasubramaniam, Leo C Kempel, Michigan State University, USA

(ELEC-33) Effect of Nb-Doping on Electrical Properties of**Pb(Zr_{0.52}Ti_{0.48})O₃ Ceramics**

Piyachon Ketsuwan^{*}, Yongyut Laosiritaworn, Supon Ananta, Rattikorn Yimnirun, Chiang Mai University, Thailand; David Cann, Oregon State University, USA

(ELEC-34) Investigation of Optic and Non-Linear Optical Properties of Polar Polymer Materials as a Function of Chromophore Incorporation

Kevin J Deily^{*}, Joseph P Dougherty, Michael Lanagan, Ruyan Guo, Penn State University, USA

(ELEC-35) Optical Interferometric Evaluation of Semiconducting Piezoelectric Zinc Oxide Microtubular Crystals

Ruyan Guo^{*}, John Y Fu, Paris Y Liu, Jiping Cheng, Pennsylvania State University, USA

(ELEC-36) Some Aspects in the Preparation of Composite Dielectric Thin Films

Korobova Natalya^{*}, Kazakh National University, Kazakhstan

(ELEC-37) Porous Titania Films Prepared in Aqueous Solution

Yoshitake Masuda, Tatsuo Kimura, Xiulan Hu, Xiangju Meng, Kazumi Kato, Tatsuki Ohji^{*}, National Institute of Advanced Industrial Science and Technology, Japan

(ELEC-38) Ceramic Superconductor-Polymer Composites - *WITHDRAWN*

Rosalin Abraham^{*}, Jayakumari Isac, Soosy Kuryan, St. Dominics College Kanjirapally, India

(ELEC-39) Magnetic Energy Distribution in Polycrystalline Sputtered CoCr Magnetic Thin Film

Jafar Al-Sharab^{*}, Rutgers University, USA;

Wittig James, Vanderbilt University, USA;
James Bentley, Oak Ridge National
Laboratory, USA

**(ELEC-40) Study of Nano-Structured
FePt System**

Srikanti Kavita*, Raghavendra. V Reddy,
Ajay Gupta, UGC-DAE, Consortium for
Scientific Research, India

**(ENER-01) A Passive Film Formed on
Alloy 600 as a Steam Generator Tubing
Material**

Dong-Jin Kim*, Hyuk Chul Kwon, Seong
Sik Hwang, Hong Pyo Kim, KAERI, South
Korea

**(ENER-02) Radioisotope Loaded Sol-Gel
Coatings and Encapsulation**

Shahid M Yousaf*, Kenneth E Bower,
Joseph E Bower, TRACE Photonics, USA

**(ENER-03) Bulk Vitrification
Technology: Control of Molten Ionic Salt
Migration into Castable Refractory
Lining**

Josef Matyas*, Pavel R Hrma, Larry M
Bagaasen, Pacific Northwest National
Laboratory, USA

**(ENER-04) Characterization of Modified
Aurivillius Ceramics**

Tim Nedimyer*, Scott Misture, Hyun-Joon
Kim, Alfred University, USA

**(ENER-05) Tunneled Titanate
Photocatalysts for Environmental
Remediation and Hydrogen Generation**

Stephen B Sanford*, James Ovenstone,
Doreen Edwards, Alfred University, USA

**(ENER-06) Ab Initio Study of the
Stability and Electronic Structure of
CdSe Nanowires**

Thomas Sadowski*, Rampi Ramprasad,
University of Connecticut, USA

**(ENER-07) Fracture Toughness of a
Nano-Structured Ferritic Alloy for
Nuclear Applications**

David A McClintock*, University of Texas
at Austin, USA; Mikhail A Sokolov, David
T Hoelzer, Randy K Nanstad, Oak Ridge
National Laboratory, USA

**(ENER-08) Dielectric Breakdown
Strength of Yttrium Stabilized Zirconia**

Oratai Jongprateep, Sheng Chao*, Vladimir
Petrovsky, Fatih Dogan, University of
Missouri-Rolla, USA

**(ENER-09) Processing, Characterization
and Dielectric Properties of
Hydrothermal BaTiO₃ Films on Stainless
Steel**

Sheng Chao*, Fatih Dogan, University of
Missouri-Rolla, USA

**(ENER-11) Sintering of Inert Matrix
Fuels (IMF) using Conventional and
Microwave Processing Techniques**

Raghunath Rao Thridandapani*, Carlos E
Folgar, Diane C Folz, Sean McGinnis,
David E Clark, Virginia Polytechnic
Institute and State University, USA

**(ENER-12) Mechanical Synthesis of
Cerium and Dysprosium Nitride**

Patrick Gregory Callahan*, Brian J Jaques,
Daniel Osterberg, Brian M Marx, Gordon
Balfour, Darryl P Butt, Abdel S Hamdy,
Boise State University, USA

**(ENER-13) Ferroelastic Behavior of
Multicomponent Solid Solution
Perovskites**

Dmytro Verbylo*, Queen Mary University
of London, United Kingdom; Nina
Orlovskaya, University of Central Florida,
USA; Mykola Lugovy, Viktor Slyunyayev,
Institute for Problems of Materials Science,
Ukraine; Michael J Reece, Queen Mary

University of London, United Kingdom

(ENER-14) La_{0.67}Sr_{0.33}MnO₃ Coating on SOFC Interconnect by Plasma-Sputtering

Chu Chun Lin^{*}, Cheng Yung-Neng, National Central University, Taiwan; Lee Shyong, Institute of Nuclear Energy Research, Taiwan

(ENER-15) Influence of Oxygen Partial Pressure on the Decomposition, Microstructure, and Electrical Properties of Ba_{0.5}Sr_{0.5}Co_{0.8}Fe_{0.2}O_{3-δ}(BSCF)

Jae-Il Jung^{*}, James Ovenstone, Jeff White, Scott T Misture, Doreen Edwards, Alfred University, USA

(ENER-16) Processing of LSM-YSZ Composites and Electrical Characterization

Thiago Dias^{*}, Dulcina P F. de Souza, Universidade Federal de São Carlos - UFSCar, Brazil

(ENER-17) Development of Anode-Supported SOFC Single Cells with Thin Electrolyte via Tape-Casting and Co-Firing

Hwan Moon^{*}, Eon-Woo Park, Jong-Jin Lee, Sang-Hoon Hyun, Yonsei University, South Korea; Ho-Sung Kim, KITECH, South Korea

(ENER-18) The Effect of Grain Boundaries on Ionic Conductivity in Lanthanum Silicate Apatite

Mai Ng^{*}, Michael Lin, Martha Mecartney, University of California, Irvine, USA

(ENER-19) Two Stage Sintering of Fine Grain Ytria Stabilized Zirconia (YSZ)

Mai Ng^{*}, Martha Mecartney, University of California, Irvine, USA

(ENER-20) YSZ Electrolyte Coating on

Porous NiO-YSZ Ceramics by Aerosol Deposition Method

Jong-Jin Choi^{*}, Joo-Hee Lee, Jungho Ryu, Byung-Dong Hahn, Woon-Ha Yoon, Dong-Soo Park, Korea Institute of Machinery and Materials, South Korea

(ENER-21) Processing of Co-Sintered Solid Oxide Fuel Cells by Infiltration of Catalytic Precursors

Daimon Heller^{*}, Fatih Dogan, University of Missouri-Rolla, USA

(ENER-22) Development of a Novel High Performance Electrolyte Supported Solid Oxide Fuel Cell

Paul S Gentile^{*}, Stephen W. Sofie, James Mehlos, Montana State University, USA

(ENER-23) Ferroelastic Creep of Perovskites Under Compression

Mykola Lugovy^{*}, Viktor Slyunyayev, Institute for Problems of Materials Science, Ukraine; Nina Orlovskaya, University of Central Florida, USA; Michael Reece, Queen Mary University of London, United Kingdom

(ENER-24) Phase Stability of SOFC Cathode Material Barium Strontium Cobalt Iron Oxide Under Low Partial Pressures of Oxygen

James Ovenstone^{*}, Jae-Il Jung, Jeffrey White, Doreen Edwards, Scott T Misture, Alfred University, USA

(ENER-25) Glass-Ceramic Seal Stability Study for Solid Oxide Electrolyzer/Fuel Cells

Manoj Kumar Mahapatra^{*}, Chris Story, Kathy Lu, William T Reynolds, Virginia Polytechnique and State University, USA

(ENER-26) The Application of a Novel Ni-Cr-Si Coating on Fe-9Cr Steel for SOFC Interconnects

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Poster Session

Luz S Quintero, Dionisio Laverde,
Universidad Industrial de Santander,
Colombia; Reza Bateni*, Anthony Petric,
McMaster University, Canada

**(ENER-27) Low Cost Heat Exchangers
for SOFC Applications**

John Clark*, Rick Wilson, Omer Dogan,
Paul King, Rigel Woodside, National
Energy Technology Laboratory, USA

**(ENER-28) Accelerated Testing of Single
Planar SOFC Fuel Cells**

Yen-Jung Huang*, Maxime Guinel, Mirko
Antloga, Frank Ernst, Mark R De Guire,
Case Western Reserve University, USA;
Matthew M Seabaugh, NexTech Materials,
USA

**(ENER-29) Sol-Gel Synthesis and
Characterization of Y-doped Strontium
Titanate Perovskite**

Xinyu Lu, Tom S Pine*, Daniel R. Mumm,
Jack Brouwer, University of California,
Irvine, USA

**(FUND-01) On Modeling of Forming
Limit Diagram for Sheet Metals**

Aly Abd El Hamid El Domiaty*, Suez Canal
University, Egypt

**(FUND-02) Damping Capacities of TiNi
Shape Memory Alloys - *WITHDRAWN***

Timofey Chekalkin*, Research Institute of
Shape Memory Medical Materials, Russian
Federation

**(FUND-03) Minimum Coefficient of
Friction Obtained by MATROLL
Software and the Effect of Improper
Friction during the Steel Cold Rolling of
Steel**

Hossein Abdollahi Ali Beik*, Kamran
Dehghani, Amirkabir University of
Technology, Iran

**(FUND-04) Effect of Zn and Testing
Direction on the Hall-Petch Constant:
 $k(\epsilon)$**

Gemma E Mann*, The University of
Queensland, Australia

**(FUND-05) Phase-field Simulation of 3D
Grain Growth**

Kunok Chang*, Weiming Feng, Long-Qing
Chen, Penn State, USA

**(FUND-06) Microstructural-Property
Characterization of a Dodge Neon
Passenger Car**

Isha Carrasquel*, Mark Horstemeyer, Kiran
Solanki, Christina Burton, Center for
Advanced Vehicular Systems, USA

**(FUND-07) Influence of Convection
Strength on Interface Growth Rate
during Solidification of a Binary Mixture**

Nilkanta Barman*, Pradip Dutta, IISc, India

**(FUND-08) Monte Carlo Model of
AlAs/GaAs/AlAs Nanostructure:
Cathodoluminescence of Multi Quantum
Wells**

Abdelkader Nouiri*, Redha Aouati,
University, Algeria

**(FUND-09) Application of Fourier-
Spectral Moving Mesh Method to Cahn-
Hilliard Equations with Anisotropic
Elasticity**

Weiming Feng*, Peng Yu, Pennsylvania
State University, USA; Shenyang Hu, Los
Alamos National Laboratory, USA; Zi-Kui
Liu, Qiang Du, Long-Qing Chen,
Pennsylvania State University, USA

**(FUND-10) GUIs for Phonon,
Thermodynamic, Mechanical, and
Charge Density Properties**

Yi Wang*, Shunli Shang, Zi-Kui Liu, Long-
Qing Chen, Pennsylvania State University,
USA

(FUND-11) Mechanical Limitations for Size of All-Ceramic Layered Microcantilever

Mykola Lugovy*, Viktor Slyunyayev, Institute for Problems of Materials Science, Ukraine; Nina Orlovskaya, University of Central Florida, USA

(FUND-12) Atomistic Simulations and Structural Characterization of Binary Cu-Zr Glasses

Ashwini Bharathula*, Weiqi Luo, Wolfgang Windl, Katharine Flores, The Ohio State University, USA

(FUND-13) Wavelet-based local tomography algorithm for high-resolution synchrotron radiation X-ray imaging

Lingqi Li*, Hiroyuki Toda, Tomomi Ohgaki, Masakazi Kobayashi, T. Kobayashi, Toyohashi University of Technology, Japan; K. Uesugi, Y. Suzuki, Japan Synchrotron Radiation Research Institute, Japan

(FUND-14) Characterization and Neural Network Models of a Creep-Resistant β -Titanium Alloy based on Timetal-21S - *WITHDRAWN*

Benjamin H Peterson*, Peter C Collins, Hamish L Fraser, Ohio State University, USA

(FUND-15) Application of State-of-the-Art Characterization Techniques for the Population and Validation of Bayesian Neural Network Models for the Prediction of Tensile and Toughness Properties in α/β Ti Alloys - *WITHDRAWN*

Peter Collins*, Santhosh Koduri, Brian Welk, Gopal B Viswanathan, Hamish L Fraser, The Ohio State University, USA

(FUND-16) Synthesis and Surface Modification of Multifunctional Hybrid**Silica Particles**

Sang Man Koo*, Chan Yoon Jung, Hae Sung Kim, Young Chai Kim, Sung Yi, Hanyang University, South Korea

(FUND-17) Effects of Precipitates on Low-Strain Fatigue Characteristics of Precipitation-Hardened Materials: Dislocation Dynamics Approach

Chansun Shin*, Korea Atomic Energy Research Institute, South Korea; Marc Fivel, GPM2, Institut National Polytechnique de Grenoble, France; Christian Robertson, CEA, France

(FUND-18) Turbo Reactor HP Blades Safe Lives Determination for Thermo Mechanical Fatigue and Creep

Yasmina Assoul Semmar*, University Saad Dahleb, Algeria; Vera Sijacki, University of Belgrade, Yugoslavia; Samira Benbelaid, NacerEddine Bacha, University Saad Dahleb, Algeria

(FUND-19) DFT Modelling of Oxygen and Cation Defects in $\text{La}_2\text{NiO}_{4+\delta}$

Michael Schroeder*, RWTH Aachen, Germany

(FUND-20) Electrical Properties of Polycrystalline $\text{Na}_x\text{Ga}_{4+x}\text{Ti}_{1-x}\text{O}_8$

Jake Wander Amoroso*, Doreen D Edwards, Alfred University, USA

(FUND-21) Investigation of Solid Solution Formation in Gadolinia- and Samaria-Doped Ceria by Electrochemical Impedance Spectroscopy Measurements

Eduardo Caetano Souza*, Shirley L Reis, Eliana N Muccillo, Institute of Energetic and Nuclear Research, Brazil

(FUND-22) Atomic Diffusion Behaviour of BF_2^+ and Boron Implant p+n Junction with Thermal Budget: A Simulation/Analytical Approach

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Ajay Kumar Srivastava^{*}, Banasthali
Vidyapith, India

**(FUND-23) Novel Component-Level
Thermal Modeling of Power Electronic
Devices**

Srihari Tharumar^{*}, Anna University, India

**(FUND-24) Friction in Equal Channel
Angular Extrusion**

James A. Hanna^{*}, Ian Baker, Thayer School
of Engineering, Dartmouth College, USA

**(FUND-25) An Energy Model for Friction
Stir Welding**

Aly El-Domiaty^{*}, Hassan Abd El-Hafez,
Suez Canal University, Egypt

**(FUND-26) Aggregate Elastic Moduli of
Trigonal Polycrystalline Tellurium**

Fei Ren^{*}, Eldon D Case, Michigan State
University, USA

**(FUND-27) Numerical Analyses on
Ground Damages in Advanced Ceramics**

Yumei Bao^{*}, Guozhong Chai, Weina Hao,
Zhejiang University of Technology, China

**(FUND-28) Mixing of Solid Particles in
Coarse Particle Fluidized Beds**

Haihong Fan^{*}, Delong Xu, Yanxin Chen,
Hui Li, Jinhe Fan, Xi'an University of
Architecture & Technology, China

**(FUND-29) Studies on the Thermal
Behavior of FePO₄ in Air**

Liyang Zhang^{*}, Mark E Schlesinger, Richard
K Brow, University of Missouri-Rolla, USA

**(FUND-30) Phase Equilibria,
Thermodynamics and Glass Formation of
the Al-Ca-Cu System: A Combined
Approach of Experiments, CALPHAD
and First-Principles Calculations**

Michael Gao^{*}, Xiaofeng Gu, University of
Virginia, USA; Marek Mihalkovic, Mike

Widom, Carnegie Mellon University, USA;
Gary Shiflet, University of Virginia, USA

**(FUND-31) Interfacial Energies of Inter-
Phases Formed in CuO Nanoparticle
Reduction**

Jenna Malia Pike^{*}, Columbia University,
USA; Jonathan Hanson, Brookhaven
National Laboratory, USA; Siu-Wai Chan,
Columbia University, USA

**(FUND-32) Growth Kinetics of Boride
Layers on Iron-Chromium Alloys and
Their Dry Abrasive Wear Resistance**

Vasyl I. Dybkov^{*}, Larisa V Goncharuk, Vira
G Khoruzha, Kostyantyn A Meleshevich,
Anatoliy V Samelyuk, Vladislav R Sidorko,
Institute for Problems of Materials Science,
Ukraine

**(FUND-33) Phase Formation and
Diffusion in Binary Systems: Real Facts
and Misleading Views**

Vasyl I. Dybkov^{*}, Institute for Problems of
Materials Science, Ukraine

**(FUND-34) Carbon Diffusion Coefficient
in Complexly Alloyed Austenite**

Alexander Alexandrovich Vasilyev^{*}, St.
Petersburg State Polytechnical University,
Russian Federation

**(FUND-35) Volume Fraction Dependence
of Zener Pinning in a Model Ni-based
Superalloy**

Kai Song^{*}, Lehigh University, USA; Mark
Aindow, University of Connecticut, USA

**(FUND-36) Fastener Failures: Causes and
Corrections**

James T Staley^{*}, Bodycote Materials Testing,
USA

**(FUND-37) Failure Analysis on Shiplift
Platform Cracking**

Y. H Yu^{*}, Xianya Huang, TUV SUD PSB

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Corporation, Singapore

(FUND-38) Effects of Diffusion Coefficients of Alloying Elements on the Freezing Zones of Alloys - *WITHDRAWN*
Yoshiharu Mae*, Maetech, Japan

(MATL-01) Plasma Sprayed Sr-HA Coating for Biomedical Applications
Weichang Xue*, Amit Bandyopadhyay, Susmita Bose, Washington State University, USA

(MATL-02) Preparation and Characterization of Bioglass Based Coatings on Ti6Al4V Alloy by Hydrothermal Synthesis
Roberto Suarez-Orduna*, Laura Patricia Rivas-Vazquez, Universidad del Papaloapan, Mexico; Juan Carlos Rendon-Angeles, CINVESTAV, Mexico; Kazumichi Yanagisawa, Kochi University, Japan

(MATL-03) Deterioration of Aluminum Nitride Thin Film Formed on Heat-Resistant Materials at Elevated Temperature - *WITHDRAWN*
Dai Nishijima*, Tatsuo Tabaru, Morito Akiyama, National Institute of Advanced Industrial Science and Technology, Japan

(MATL-04) Synthesis and Characterization of Aluminum Oxide - Boron Carbide Composites by Air Plasma Spraying
Srinivasa rao Koneti*, Amit Datye, Kuang-Hsi Wu, Florida International University, USA

(MATL-05) Synthesis and Characterization of Atmospheric Pressure Chemically Vapor Deposited Aluminum
Sung Min Maeng*, New Jersey Institute of Technology, USA; Fernando Jose Gomez, Akzo Nobel, USA; Dennis L Deavenport,

Akzo Nobel Polymer Chemicals, USA; Sipeng Gu, Roland Levy, New Jersey Institute of Technology, USA; Eric W Brooman, Elizabeth S Berman, Air Force Research Laboratory, USA

(MATL-06) Plasma Spraying of Aluminum Oxide - Silicon Carbide Composites
Srinivasa rao Koneti*, Amit Datye, Kuang-Hsi Wu, Florida International University, USA

(MATL-07) Microstructure and Mechanical Properties of In-Situ TiC Dispersed Steel Matrix Composite
Parashivamurthy Kaggere Iyannappa*, Siddaganga Institute of Technology, India; Sampathkumaran Parthasarathi, Seetharamu Subramanyam, Central Power Research Institute, India; Chandrasekharaiah M Narayana, Siddaganga Institute of Technology, India

(MATL-08) Production and Mechanical Properties of an Epoxy Resin/Aluminum Composite
Enrique Rocha*, Rosalino Gonzalez, Alejandro Altamirano, UAM-A, Mexico; Ana B Soto, CINVESTAV-IPN, Mexico

(MATL-09) Kinetics of Radiation Alterations in Polymer Materials Irradiated by High-energy Electrons
Guzal Ismailova*, Al Farabi Kazakh National University, Kazakhstan

(MATL-10) Surface Characteristics of Silver Coated Copper Composite Powder by Activation-Electroless Plating Method
Jong-Gwan Ahn*, Hoang T Hai, Dong-Jin Kim, Jaeryeong Lee, Hun-Saeng Jung, Jeong-Soo Sohn, Korea Institute of Geoscience and Mineral Resources (KIGAM), South Korea

(MATL-11) Oxyfluoride Glass Structure by Raman and Infrared Spectroscopies

Shantala Devanand Patil*, Vivekanand M Jali, Gulbarga University, India; Rajan V Anvekar, Bangalore University, India; Sanjeev R Inamdar, Karnatak University, India

(MATL-12) Search for the Rigidity Transition in Lithium Oxide Silicate Glass Systems Using Modulated Differential Scanning Calorimetry (MDSC)

Kisa S Ranasinghe*, Wayne Bresser, Chrispin Gabriel, Chari Ramkumar, Northern Kentucky University, USA

(MATL-13) Directionally Solidified Eutectic Microstructures via Laser Surface Processing of Non-Oxide Boride Eutectics II - *WITHDRAWN*

John Folk Foreman*, Anton V Polotai, Kenneth C Meinert, Elizabeth C Dickey, Pennsylvania State University, USA

(MATL-14) Mechanical Properties of ZrB₂-SiC Composites Fabricated by Pressureless Sintering

Shi C. Zhang*, Greg Hilmas, William Fahrenholtz, University of Missouri-Rolla, USA

(MATL-15) *In Situ* Neutron Diffraction Study on the Phase Transformation of Mullite from Alumina/Clay with Aluminium Fluoride

Nobuo Tezuka*, It-Meng Low, Ian J Davies, Curtin University of Technology, Australia; Ioan D Alecu, Rod J Stead, Rojan Advanced Ceramics Pty Ltd., Australia; Maxim Avdeev, Ed G Mehrtens, Bruno A Latella, Australian Nuclear Science and Technology Organisation, Australia

(MATL-16) Production and Characterization of Al₂O₃-Based**Composites Reinforced with Different Metals**

Enrique Rocha*, Socorro Moreno, Liana Couvert, Jose G Miranda, UAM-A, Mexico

(MATL-17) Influence of Rare Earth Oxides on the α - β Phase Transformation and Microstructural Evolution in Silicon Nitride Ceramics

Paul Becher*, Shirley Waters, Gayle Painter, Oak Ridge National Lab, USA; Naoya Shibata, University of Tokyo, Japan

(MATL-18) Two-Step Pressureless Sintering of Zirconium Diboride Powders Coated with Polycarbosilane

Sumin Zhu*, William G Fahrenholtz, Gregory E Hilmas, University of Missouri-Rolla, USA

(MATL-19) Influence of Secondary Electro-Conductive Phases on the Electrical Discharge Machineability and Tribological Behavior of Zirconia-Based Ceramic Composites

Omer Van der Biest*, K. U. Leuven, Belgium; Koenraad Bonny, Patrick De Baets, Universiteit Ghent, Belgium; Wei Liu, Bert Lauwers, Jef Vleugels, K. U. Leuven, Belgium

(MATL-20) Coated HfB₂ Powder Used to Produce Ultra High Temperature Ceramics

Michael Gusman*, Mairead Stackpoole, ELORET Corp. at NASA Ames Research Ctr., USA; Sylvia M Johnson, Matthew Gasch, Edward Irby, NASA Ames Research Center, USA; Kai-Hung Lau, Angel Sanjurjo, SRI International, USA

(MATL-21) Relating Concrete Strength from Macro-size to Nano-level Molecular Interaction

Chiu Liu*, Kei-Peng Jen, Villanova University, USA

(MATL-22) Fracture Toughness of Silicon Nitrides With Various Microstructures Determined by Indentation Fracture (IF) Method

Hiroyuki Miyazaki, Hideki Hyuga, Yu-ichi Yoshizawa, Kiyoshi Hirao, Tatsuki Ohji*, National Institute of Advanced Industrial Science and Technology, Japan

(MATL-23) Microstructural evolution of Alpha-Calcium Sulfate Hemihydrate powder as Bone Cement

Peng Wang*, Byung-Ho Yoon, Eun-Jung Lee, Chee-Sung Park, Hyoun-Ee Kim, School of Materials Science and Engineering, Seoul National University, South Korea

(MATL-24) Ha/ZrO₂/316l Stainless Steel System Characterization to Orthopedics Prosthesis Application

Barbara Bermudez Reyes*, Universidad Michoacana de San Nicolás de Hidalgo, Mexico; Francisco J Espinoza Beltran, CINVESTAV- Unidad Querétaro, Mexico; Maria E Contreras Garcia, Universidad Michoacana de San Nicolás de Hidalgo, Mexico

(MATL-25) Influence of Magnesium and Zinc Oxide on Tricalcium Phosphate Ceramic

Weichang Xue*, Kelli Dahlquist, Amit Bandyopadhyay, Susmita Bose, Washington State University, USA

(MATL-26) Electrospun Polymer Composite Nanofibers for the Stimulation of Cell Growth

Hye-Sun Yu, Hae-Hyoung Lee, Hae-Won Kim*, Dankook University, South Korea

(NANO-01) Preparation of Nickel-containing Nanomaterials from Moleculalr Nickel Precursor

Chang Gyoun Kim*, Korea Research Institute of Chemical Technology, South Korea; Sang Hyun Lee, Hanyang University, South Korea; Taek-Mo Chung, Korea Research Institute of Chemical Technology, South Korea; Sangman Koo, Hanyang University, South Korea

(NANO-02) Sintering Studies on Self-Assembled Nanoparticle Arrays

Ram Chandra Tiruvalam*, Patrick L Clasen, Roger Ristau, Chris Kiely, Martin Harmer, Lehigh University, USA

(NANO-03) Nanocrete: A Study and Implementation of the Effect of Carbon Nanotubes as Reinforcing Fibers on the Structural Integrity of Cementitious Materials

Matthew S. Brenner*, Plano West High School, USA

(NANO-04) Nano-scale Thermodynamics and Application in Thermal Stability Research of Nanocrystalline Materials - *WITHDRAWN*

Xiaoyan Song*, Jiuxing Zhang, Lingmei Li, Keyong Yang, Jinping Gao, Beijing University of Technology, China

(NANO-05) Cleaning For Next Generation Nanoscale Pretreatments

John Zimmerman*, Henkel Technologies, USA

(NANO-06) Asymptotic Analysis and Simulation of Coagulation-Fragmentation Equations - *WITHDRAWN*

Francisco Torrens*, Gloria Castellano, Universitat de Valencia, Spain

(NANO-07) TEM Analysis of Copper Sulfide Precipitation in an Ultra-Low Carbon Steel

Jin-Young Yun*, Kangwon National University, South Korea; Sung-Il Kim,

POSCO, South Korea; Sung-Hwan Lim,
Kangwon National University, South Korea

**(NANO-08) Deposition and Aggregation
of Aspirin on Lipid Bilayer**

Hitesh Handa*, Wayne State University,
USA; Dongzhong Chen, Nanjing University,
China; Guangzhao Mao, Wayne State
University, USA; Wenfei Dong, Jilin
University, China; Dirk G Kurth, Helmuth
Mohwald, Max Planck Institute of Colloids
and Interfaces, Germany

**(NANO-09) A Comparison of Atomic
Force Microscopy (AFM) and Dynamic
Light Scattering (DLS) Methods to
Characterize Nanoparticle Size
Distributions**

Chris Hoo*, University of California-Irvine,
USA; Natasha Starostin, Pacific
Nanotechnology, Inc., USA; Martha
Mecartney, University of California-Irvine,
USA; Paul West, Pacific Nanotechnology,
Inc., USA

**(NANO-10) Atomic Force Microscopy
(AFM) in Fluid Environment**

Trang Doan*, University of California-Irvine,
USA; Natasha Starostin, Pacific
Nanotechnology, Inc., USA; Christopher
Hoo, University of California-Irvine, USA;
Paul West, Pacific Nanotechnology, Inc.,
USA; Martha Mecartney, University of
California-Irvine, USA

**(NANO-11) Characterization of AFM
Image Reconstruction Techniques**

Kevin Stewart Olson*, Martha L Mecartney,
University of California-Irvine, USA;
Natasha V Starostina, Paul E West, Pacific
Nanotechnology, USA

**(NANO-12) Strain Engineering of InGaN-
based LEDs through Numerical Modeling**

Zhiwen Liang*, R. Edwin Garcia, Purdue
University, USA

**(NANO-13) Effects of Parameters for
Carbon Nanotubes Synthesis under a
Liquid Nitrogen**

Nuttaphong Sornsuwit*, King Mongkut's
Institute of Technology North Bangkok,
Thailand

**(NANO-14) Electrical and Mechanical
Property Enhancement in Exfoliated
Graphite Nanoplatelet/Liquid Crystalline
Polymer Nanocomposites**

Sanjib Biswas*, Lawrence Drzal, Michigan
State University, USA

**(NANO-15) Investigation of
Electrodeposited Co-based Films Used for
Magnetic Levitation Application**

Caglar Elbuken*, Mustafa Yavuz, Behrad
Khamesee, University of Waterloo, Canada;
Shiro Kambe, Hidea Iwasaki, Yamagata
University, Japan, JAIST, Japan

**(NANO-16) Study of Structure-Property
Correlations in Zinc Oxide Nanoparticles
based Gas Sensors**

Manisha Dixit*, Patricia A Morris, Ohio
State University, USA

**(NANO-17) Bacteriophage Coating for
Detection of Bacteria**

Hitesh Handa*, Stephen Gurczynski,
Matthew P Jackson, Gregory Auner,
Guangzhao Mao, Wayne State University,
USA

**(NANO-18) Effects of the Background
Vacuum Level on the Structure of MN
Thin Films ($M = \text{Ta, Ti, Al, Zr}$ and $\text{Ti}_{1-x}\text{Al}_x$)
and Nanostructured TiN/AlN
Superlattices Grown using Pulsed Laser
Deposition**

Nitin Patel*, Paul A Salvador, Carnegie
Mellon University, USA; Aharon Inspektor,
Kennametal Inc., USA

(NANO-19) Deposition of Nanostructured Titanium Oxide Thin Films from Aqueous Solution

Guangneng Zhang, Junghyun Cho*, SUNY, USA

(NANO-20) Influence of Synthesis Route in Particle Size and Electrical Properties of Nanostructured LaCoO₃

Carlos Rafael Michel*, Alma H Martinez-Preciado, Universidad de Guadalajara, Mexico

(NANO-21) Nano-SiC from Silica Fume via an Integrated Mechanical and Thermal Activation Process

Leon Shaw*, Misael Manjarres, University of Connecticut, USA; Mahmoud Zawrah, National Research Center, Egypt

(NANO-22) Preparation and Their Electrical Properties of the Nanosized LiAl_xCo_yNi_{1-x-y}O₂

Chen-Feng Kao*, Kao-Heng Liu, National Cheng Kung University, Taiwan

(NANO-23) Unexpected Phases in Fe₂O₃/MgO Nanopowders Produced Via Liquid-Feed Flame Spray Pyrolysis (LF-FSP)

Sameer Kumar*, Richard Laine, University of Michigan, USA

(NANO-24) Effect of Silver Addition on Gas Sensing Properties of Nanostructured Gd_{0.9}(Ba,Sr_{0.1})CoO₃ Phases

Carlos Rafael Michel*, Edgar R Lopez-Mena, Alma H Martinez-Preciado, Universidad de Guadalajara, Mexico

(NANO-25) Measurement of Grinding Induced Residual Stress in Alumina-based Ceramics Using Cr³⁺ R-line Fluorescence - *WITHDRAWN*

Sheng Guo*, Richard I Todd, University of Oxford, United Kingdom

(NANO-26) Characterization of the Photocatalyst P25

James Ovenstone*, Scott T Misture, Alfred University, USA

(NANO-27) Properties of Ceria-Zirconia Solid Solution Sol Synthesized in Water Phase at 100°C

Fumiyuki Takasaki*, Daiichi Kigenso Kagaku Kogyo Co., Japan

(NANO-28) Hydroxyapatite Grain Size Effect on Bone Cell-Materials Interaction

Sudip Dasgupta*, Amit Bandyopadhyay, Susmita Bose, Washington State University, USA

(PROC-01) Challenges of Making Portland Cement from Waste Materials

Irvin A Chen*, Maria C Juenger, The University of Texas at Austin, USA

(PROC-02) Experimental Investigation on Pressure Drop and Collection Efficiency of Cyclone Preheater with Different Inlet Vanes

Yanxin Chen*, Delong Xu, Feng Zhao, Haihong Fan, Xi'an University of Architecture & Technology, China

(PROC-03) Investigation of New Non Explosive Demolition Agent

Tamaz O Akhvlediani, Edgar D Mataradze, G. Tsulukidze Mining Institute of Georgia, Georgia; Tamaz Gabadadze, Irakli S Suladze, Georgian Technical University, Georgia; Nikoloz Mikheil Chikhradze*, G. Tsulukidze Mining Institute of Georgia, Georgia

(PROC-04) Development of Recycling Technology from Waste Aggregate and Dust from Waste Concrete

Goo-Dae Kim*, KIST, South Korea

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Poster Session

(PROC-05) Degradation of Waterproofing Foils in Foundations

Veronika Husakova*, Czech Technical University in Prague, Czech Republic

(PROC-06) Preparation of Ceramic Faience from Tunisian Raw Materials

Baccour Hajer*, Faculte des Sciences de Sfax, Tunisia

(PROC-07) BD-RP (Baosteel Dust Recycling Process) New Dust Recycling Process - *WITHDRAWN*

Dongyan Wang*, Weiguo Li, Zhaoyi Li, Baoshan Iron & Steel Co., Ltd., China

(PROC-08) Development of RTD (Residence Time Distribution) Model and On-line Analysis System for the Monitoring of Multistage Mixer-settler

Jin-young Lee*, Joon-Soo Kim, Jeong-Soo Sohn, Dong-Hyo Yang, Korea Institute of Geoscience and Mineral Resources, South Korea

(PROC-09) Surfactant Effect in the Properties of Photocatalytic Anatase Powders

M. Lorena Garcia-Benjume, Ilya Espitia Cabrera, Laura J Saucedo, M. Eugenia Contreras-Garcia*, Universidad Michoacana de san Nicolas de Hidalgo, Mexico

(PROC-10) Phosphate Barriers: Immobilization of Uranium Contamination under Vadose Zone Conditions

Eric M Pierce*, Michelle M Valenta, Dawn M Wellman, Pacific Northwest National Laboratory, USA

(PROC-11) Evaluation of Iron base Cermet Consolidated by Spark Plasma Sintering Using Mechanically Alloyed TiC Powders

Inshup Ahn*, Dong kyu Park, Dong woong

Kim, Deuk kyun Kang, Gyeongsang University, South Korea

(PROC-12) Mechanical Properties of TiB Whisker-reinforced Titanium (TiB/Ti) by Spark Plasma Sintering

Izui Hiroshi*, Nihon University, College of Science & Technology, Japan

(PROC-13) Microwave Sintered Silicon Nitride Ceramics

Sreekumar Chockalingam*, Alfred University, USA

(PROC-14) Temperature Measurements in a Single Mode Microwave Cavity

Carlos E Folgar*, Diane C Folz, Sean McGinnis, David E Clark, Virginia Polytechnic Institute and State University, USA

(PROC-15) Development of MW Hybrid Kiln for Rapid Sintering of Ceramics

Hyung-Tae Kim*, Sung Min Lee, Jin Ho Jung, Korea Institute of Ceramic Engineering & Technology, South Korea

(PROC-16) Preparation and Properties of Ti₅₀Cu₂₈Ni₁₅Sn₇ Bulk Metallic Glass by Combination of Mechanical Alloying and Vacuum Hot Pressing

Pee-Yew Lee*, National Taiwan Ocean University, Taiwan; Chung-Kwei Lin, Feng-Chia University, Taiwan

(PROC-17) Mg₄₉Y₁₅Cu₃₆ Bulk Metallic Glass Composites Synthesized by Vacuum Hot-Pressing of Mechanically Alloyed Powders

Pee-Yew Lee*, Chien-Chung Wang, National Taiwan Ocean University, Taiwan

(PROC-18) Pressureless Sintering of Ceramic Matrix Composites in the TiB₂ - Al₂O₃ System

Michael Hunt*, Virginia Polytechnic Institute and State University, USA; Kathryn

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Logan, National Institute of Aerospace,
USA

(PROC-19) Effect of Poly-Acrylic-Acid (PAA) Binder System on Characteristics of Dry-Pressed Alumina

Mohd Imran Zainuddin^{*}, MARA University of Technology, Malaysia; Satoshi Tanaka, Keizo Uematsu, Nagaoka Institute of Technology, Japan

(PROC-20) Development of Fe-NbC Cermet from Powder Obtained by Self-Propagating High Temperature Synthesis

Anand Sunil Patil^{*}, Amol C Gunjal, Swapnil J Zodape, College of Engineering, India

(PROC-21) Preparation of Silicon Carbide Web Using Electrospinning Method and Its Oxidation Behavior

Dong-Geun Shin^{*}, Seoul National University, South Korea; Doh-Hyung Riu, KICET, South Korea; Hyoun-Ee Kim, Seoul National University, South Korea

(PROC-22) Effect of Pulsed DC Current on Atomic Diffusion of Mo-C Diffusion Couple

Takayuki Kondo^{*}, Masahide Yasuhara, Yasuhiro Koderu, Manshi Ohyanagi, Ryukoku University, Japan

(PROC-23) In Situ Growth of High Aspect Ratio Reinforcement Phases in UHTC Materials for Improved Performance

Margaret Stackpoole^{*}, Jeremy Thornton, Matthew Gasch, Eloret Corp., USA; Sylvia Johnson, NASA Ames Research Center, USA

(PROC-24) Interaction Between CoO Single Crystals and Liquid Aluminum

Natalia Sobczak^{*}, Artur Kudyba, Rafal Nowak, Waldemar Radziwill, Foundry Research Institute, Poland; Jerzy Morgiel,

Joanna Wojewoda-Budka, Polish Academy of Sciences, Poland

(PROC-25) Effect of Carbon Coating on Wetting and Bonding of Al Alloys with Al₂O₃ Substrates

Rafal Nowak^{*}, Natalia Sobczak, Waldemar Radziwill, Foundry Research Institute, Poland; Andrzej Wojciechowski, Dariusz Rudnik, Motor Transport Institute, Poland

(PROC-26) Separation and Joining of Multi Wall Carbon Tubes (MWCNT) Using Nano-Soldering Techniques and High Energy Photons

Salim Sahin^{*}, Mustafa Yavuz, Norman Zhou, University of Waterloo, Canada

(PROC-27) Glass-metal Joining in Nuclear Environment: The State of the Art

Marijke Jacobs^{*}, University Ghent, Belgium

(PROC-28) Role of Ag Diffusion Control Layer in the Ti-Cu Dissimilar Joining Using an Ag-Cu-Ti Filler

Min-Ku Lee^{*}, Jung G Lee, J. K Lee, G. H Kim, C. K Rhee, Korea Atomic Energy Research Institute, South Korea

(PROC-29) Low Temperature Brazing of Ti Dissimilar Joint Using a Zr_{41.2}Ti_{13.8}Cu_{12.5}Ni_{10.0}Be_{22.5} Amorphous Filler

Min-Ku Lee^{*}, Jung G Lee, J. K Lee, G. H Kim, C. K Rhee, Korea Atomic Energy Research Institute, South Korea

(PROC-30) Effects of Thermal Input on the IMC Morphology in Ni Particle Reinforced Sn-Ag Composite Solder Joint

Jingkai Nie, Feng Tai, Hanjing Zheng, Zhidong Xia, Fu Guo^{*}, Beijing University of Technology, China

(PROC-31) Interfacial Reaction and Joint

Strength of Sn-3.0Ag-0.5Cu/Cu Solder Bumping made by Two Binary Electroplating

Lee Sehyung*, Korea Institute of Industrial Technology (KITECH), South Korea

(PROC-32) Interfacial Interaction of Nickel with Liquid Pb-free Sn-Bi-In-Zn-Sb Soldering Alloys

Katayun Barmak, David C Berry, Carnegie Mellon University, USA; Vladislav R Sidorko, Anatoliy V Samelyuk, Vasyl I. Dybkov*, Institute for Problems of Materials Science, Ukraine

(STEEL-01) Microstructural Evolution of a V-N Steel during Seamless Tube Hot Rolling

Ricardo Nolasco Carvalho*, Marcelo Ferreira, V&M do Brasil, Brazil; Dagoberto B Santos, Ronaldo Barbosa, Federal University of Minas Gerais, Brazil

(STEEL-02) Continuous Annealing Technology of Cold Rolling Automotive Sheet

Jianfeng He*, Baosteel, China

(STEEL-03) Measurement of the Mechanical Properties of Austenite-Martensite Mixtures at the Reaction Temperature

Chao Zheng*, Daniel F. Watt, University of Windsor, Canada

(STEEL-04) Corrosion Resistance of ZrO₂, Al₂O₃, ZrO₂-Y₂O₃ Ceramic Coatings in Sulfuric Acid

Ilya Espitia Cabrera*, Ekar Lena Morales, Hector D Orozco Hernandez, Maria E Contreras Garcia, Universidad Michoacana de San Nicolas de Hidalgo, Mexico; Lorenzo Martinez G., Universidad Nacional Autonoma de Mexico, Mexico

(STEEL-05) Sliding Wear Mechanism of

the Ultra-Fine Grained (UFG) Dual Phase Steel under Low and High Applied Load Conditions

Hyun Seok Yu*, Kookmin University, South Korea; Dong Hyuk Shin, Hanyang University, South Korea; Yong-Suk Kim, Kookmin University, South Korea

(STEEL-06) Development of High Strength Non-Oriented 3% Silicon Steel - *WITHDRAWN*

Hee Yong Park*, Sam Kyu Chang, Bruno De Cooman, Graduate Institute of Ferrous Technology, POSTECH, South Korea