



Titles and authors of articles scheduled to appear in the upcoming issue of *Journal of Materials Research* are published on the following pages. Also included is a direct URL link to the full text of each abstract. A listing of all *JMR* abstracts from September 1996 to the present is available through the *JMR* table of contents at <http://www.mrs.org/publications/jmr/jmra/>.

TABLE OF CONTENTS

RAPID COMMUNICATIONS

Epitaxial growth of anisotropically shaped, single-crystal particles of cubic SrTiO₃

K. Watari, B. Brahmaroutu, S.-C. Cheng, G.L. Messing, S. Trolier-McKinstry
The Pennsylvania State University
Order No.: JA003-001
<http://www.mrs.org/publications/jmr/jmra/2000/mar/001.html>

Raman characterization of Li(Al_{1-x}Co_x)O₂

G. Chen,^{1,2} W. Hao,¹ Y. Shi,¹ Y. Wu,¹ S. Perkowitz²
¹Jilin University, ²Emory University
Order No.: JA003-002
<http://www.mrs.org/publications/jmr/jmra/2000/mar/002.html>

Yttria-based nano-sized powders: A new class of fractal materials obtained by combustion synthesis

G. Fagherazzi,¹ S. Polizzi,¹ M. Bettinelli,² A. Speghini²
¹Università di Venezia, ²Università di Verona
Order No.: JA003-003
<http://www.mrs.org/publications/jmr/jmra/2000/mar/003.html>

Improved adhesion of diamondlike coatings using shallow carbon implantation

G.W. Malaczynski, A.A. Elmoursi, C.H. Leung, A.H. Hamdi, A.B. Campbell
General Motors Global Research and Development Operations
Order No.: JA003-004
<http://www.mrs.org/publications/jmr/jmra/2000/mar/004.html>

Combined substrate polishing and biasing during hot-filament chemical vapor deposition of diamond on copper

N. Ali,¹ W. Ahmed,¹ Q.H. Fan,² C.A. Rego¹
¹Manchester Metropolitan University, ²University of Aveiro
Order No.: JA003-005
<http://www.mrs.org/publications/jmr/jmra/2000/mar/005.html>

ARTICLES

Growth mechanism of YBa₂Cu₃O_{7-δ} thin films and precipitates on planar and vicinal SrTiO₃ substrates

J. Kim,¹ D.B. Chrisey,² J.S. Horwitz,² M.M. Miller,² C.M. Gilmore²
¹George Washington University, ²Naval Research Laboratory
Order No.: JA003-006
<http://www.mrs.org/publications/jmr/jmra/2000/mar/006.html>

Phase growth and microstructure modifications induced by annealing in highly textured superconducting Bi-2212 thin rods

M. Mora, E. Martínez, J.C. Díez, L.A. Angurel, G.F. de la Fuente
CSIC—Universidad de Zaragoza
Order No.: JA003-007
<http://www.mrs.org/publications/jmr/jmra/2000/mar/007.html>

Epitaxial growth of gadolinium oxide on roll-textured nickel using a solution growth technique

J.S. Morrell,¹ Z.B. Xue,¹ E.D. Specht,² A. Goyal,² P.M. Martin,² D.F. Lee,²
R. Feenstra,² D.T. Verebelyi,² D.K. Christen,² T.G. Chirayil,²
M. Paranthaman,² C.E. Vallet,² D.B. Beach²
¹University of Tennessee, ²Oak Ridge National Laboratory
Order No.: JA003-008
<http://www.mrs.org/publications/jmr/jmra/2000/mar/008.html>

A solvothermal route to wurtzite ZnSe nanoparticles

J.H. Zhan, X.G. Yang, W.X. Zhang, D.W. Wang, Y. Xie, Y.T. Qian
University of Science and Technology of China
Order No.: JA003-009
<http://www.mrs.org/publications/jmr/jmra/2000/mar/009.html>

Atomic structure, electrical properties, and infrared range optical properties of diamondlike carbon films containing foreign atoms prepared by pulsed laser deposition

Q. Wei,¹ J. Sankar,¹ A.K. Sharma,² S. Oktyabrsky,² J. Narayan,²
R.J. Narayan³
¹North Carolina A&T University, ²North Carolina State University,
³Wake Forest University
Order No.: JA003-010
<http://www.mrs.org/publications/jmr/jmra/2000/mar/010.html>

JMR Abstracts provides a preliminary listing of titles tentatively scheduled to appear in *Journal of Materials Research* at the time *MRS Bulletin* is published. Late schedule changes before *JMR* is printed may result in articles being added or deleted. The Materials Research Society regrets any inconvenience that may result from schedule changes. Copyright 2000 by Materials Research Society. All rights reserved. ISSN: 1066-2375.

Optical properties and annealing effects on the deep levels in As-doped CdTe/Cd_{0.96}Zn_{0.04}Te (211) B heterostructures

M.S. Han,¹ T.W. Kang,¹ T.W. Kim²

¹Dongguk University, ²Kwangwoon University

Order No.: JA003-011

<http://www.mrs.org/publications/jmr/jmra/2000/mar/011.html>

One-step sintering of SiGe thermoelectric conversion unit and its electrodes

J-S. Lin, Y. Miyamoto

Osaka University

Order No.: JA003-012

<http://www.mrs.org/publications/jmr/jmra/2000/mar/012.html>

Magnetic moment and atomic volume in supersaturated Fe-Cu solid solutions: *Ab initio* calculations compared with experiments

W. Zhang,¹ E. Ma²

¹Harvard University, ²The Johns Hopkins University

Order No.: JA003-013

<http://www.mrs.org/publications/jmr/jmra/2000/mar/013.html>

Irreversible transformation in as-cast FeLa B2-ordered alloy obtained by melt spinning

E. Bonetti,¹ R. Montanari,² C. Testani,³ G. Valdrè¹

¹Università di Bologna, ²Università di Roma "Tor Vergata,"

³Centro Sviluppo Materiali

Order No.: JA003-014

<http://www.mrs.org/publications/jmr/jmra/2000/mar/014.html>

Transition in high-temperature oxidation kinetics of Pd-modified aluminide coatings: Role of oxygen partial pressure, heating rate, and surface treatment

D. Monceau,¹ K. Bouhanek,¹ R. Peraldi,¹ A. Malie,² B. Pieraggi¹

¹ENSCT, ²SNECMA-SERVICES

Order No.: JA003-015

<http://www.mrs.org/publications/jmr/jmra/2000/mar/015.html>

Contact damage in porcelain/Pd-alloy bilayers

H. Zhao,¹ X. Hu,¹ M.B. Bush,¹ B.R. Lawn²

¹The University of Western Australia,

²National Institute of Standards and Technology

Order No.: JA003-016

<http://www.mrs.org/publications/jmr/jmra/2000/mar/016.html>

Preparation of nanocomposites containing iron and nickel zinc ferrite

M. Pal,¹ D. Das,² S.N. Chintalapudi,² D. Chakravorty¹

¹Indian Association for the Cultivation of Science,

²Inter University Consortium for DAE facilities

Order No.: JA003-017

<http://www.mrs.org/publications/jmr/jmra/2000/mar/017.html>

Uniaxial compression experiments on lead zirconate titanate 95/5-2Nb ceramic: Evidence for an orientation-dependent, "maximum compressive stress" criterion for onset of the ferroelectric to antiferroelectric polymorphic transformation

D.H. Zeuch, S.T. Montgomery, D.J. Holcomb

Sandia National Laboratories

Order No.: JA003-018

<http://www.mrs.org/publications/jmr/jmra/2000/mar/018.html>

Morphology and gas barrier properties of thin SiO_x coatings on polycarbonate: Correlations with plasma-enhanced chemical vapor deposition

A.G. Erlat,¹ B-C. Wang,¹ R.J. Spontak,¹ Y. Tropsha,² K.D. Mar,²

D.B. Montgomery,² E.A. Vogler²

¹North Carolina State University, ²Becton Dickinson Technologies

Order No.: JA003-019

<http://www.mrs.org/publications/jmr/jmra/2000/mar/019.html>

Effect of SiO₂ and Y₂O₃ additives on the anisotropic grain growth of dense mullite

T. Huang,¹ M.N. Rahaman,¹ T-I. Mah,^{2,3} T.A. Parthasarathy^{2,3}

¹University of Missouri—Rolla, ²Wright-Patterson Air Force Base, ³UES, Inc.

Order No.: JA003-020

<http://www.mrs.org/publications/jmr/jmra/2000/mar/020.html>

Model analysis of boundary residual stress and its effect on toughness in thin boundary layered yttria-stabilized tetragonal zirconia polycrystalline ceramics

J.L. Shi, Z.L. Lu, J.K. Guo

Shanghai Institute of Ceramics

Order No.: JA003-021

<http://www.mrs.org/publications/jmr/jmra/2000/mar/021.html>

An experimental and modeling investigation of particle production by spray pyrolysis using a laminar flow aerosol reactor

I.W. Lenggoro,¹ T. Hata,¹ F. Iskandar,¹ M.M. Lunden,² K. Okuyama¹

¹Hiroshima University, ²Lawrence Berkeley National Laboratory

Order No.: JA003-022

<http://www.mrs.org/publications/jmr/jmra/2000/mar/022.html>

Effects of microstructural evolution on the thermal conductivity of α -Al₂O₃ prepared from nano-size γ -Al₂O₃ powder

E.J. Gonzalez, G. White, L. Wei

National Institute of Standards and Technology

Order No.: JA003-023

<http://www.mrs.org/publications/jmr/jmra/2000/mar/023.html>

Giant magnetoimpedance in CoP electrodeposited microtubes

J.P. Sinnecker¹, J.M. García,² A. Asenjo,² M. Vázquez,² A. García-Arribas³

¹Universidade Federal do Rio de Janeiro, ²CSIC—Instituto de Ciencia de

Material de Madrid, ³Universidad de Oviedo

Order No.: JA003-024

<http://www.mrs.org/publications/jmr/jmra/2000/mar/024.html>

Residual stresses in polycrystalline Cu/Cr multilayered thin films

A. Misra, H. Kung, T.E. Mitchell, M. Nastasi

Los Alamos National Laboratory

Order No.: JA003-025

<http://www.mrs.org/publications/jmr/jmra/2000/mar/025.html>

Thermal transport through thin films: Mirage technique measurements on aluminum/titanium multilayers

E.J. Gonzalez, J.E. Bonevich, G.R. Stafford, G. White, D. Josell

National Institute of Standards and Technology

Order No.: JA003-026

<http://www.mrs.org/publications/jmr/jmra/2000/mar/026.html>

Structure and thermoelectric properties of binary and Fe-doped iridium silicide thin films

W. Pitschke,¹ R. Kurt,¹ A. Heinrich,¹ J. Schumann,¹ H. Greißmann,¹

H. Vinzelberg,¹ A.T. Burkov²

¹Institute of Solid State and Materials Research—Dresden,

²University of Ryukyus

Order No.: JA003-027

<http://www.mrs.org/publications/jmr/jmra/2000/mar/027.html>

Variation of orientation and morphology of epitaxial SrBi₂Ta₂O₉ and SrBi₂Nb₂O₉ thin films via coating-pyrolysis processT. Nagahama,¹ T. Manabe,¹ I. Yamaguchi,¹ T. Kumagai,¹ S. Mizuta,¹ T. Tsuchiya²¹National Institute of Materials and Chemical Research,²Science University of Tokyo

Order No.: JA003-028

<http://www.mrs.org/publications/jmr/jmra/2000/mar/028.html>**Titanium environment in TiO₂-BaO-ZnO-B₂O₃ glasses by x-ray absorption spectroscopy**N. Watanabe,^{1,2} A.Y. Ramos,^{1,3} M.C.M. Alves,¹ H. Tolentino,¹ O.L. Alves,² L.C. Barbosa²¹Laboratório Nacional de Luz Síncrotron, ²UNICAMP, ³CNRS-ParisVI

Order No.: JA003-029

<http://www.mrs.org/publications/jmr/jmra/2000/mar/029.html>**Crystallization and nanoindentation behavior of a bulk Zr-Al-Ti-Cu-Ni amorphous alloy**J.G. Wang,¹ B.W. Choi,² T.G. Nieh,² C.T. Liu³¹University of California—Irvine, ²Lawrence Livermore NationalLaboratory, ³Oak Ridge National Laboratory

Order No.: JA003-030

<http://www.mrs.org/publications/jmr/jmra/2000/mar/030.html>**High-temperature heat treatment of carbon microcoils obtained by chemical vapor deposition process and their properties**X. Chen,¹ W. In-Hwang,¹ S. Shimada,² M. Fujii,³ H. Iwanaga,⁴ S. Motojima¹¹Gifu University, ²Hokkaido University,³Nagasaki Institute of Applied Science, ⁴Nagasaki University

Order No.: JA003-031

<http://www.mrs.org/publications/jmr/jmra/2000/mar/031.html>**Thermochemistry of microporous silicotitanate phases in the Na₂O-Cs₂O-SiO₂-TiO₂-H₂O system**H. Xu,¹ A. Navrotsky,¹ M.D. Nymann,² T.M. Nenoff²¹University of California—Davis, ²Sandia National Laboratories

Order No.: JA003-032

<http://www.mrs.org/publications/jmr/jmra/2000/mar/032.html>**Copper-associated aluminum ionized center [AlO₄/Cu⁺⁺]⁺ in a γ-irradiated copper(I)-containing silica glass**

R. Debnath

Central Glass and Ceramic Research Institute

Order No.: JA003-033

<http://www.mrs.org/publications/jmr/jmra/2000/mar/033.htm>See full text of *JMR Abstracts* and *JMR rapid communications* on the MRS Web site at <http://www.mrs.org/publications/jmr/jmra/>.Also visit the MRS Website at <http://www.mrs.org/publications/jmr/forms/orderform.html> to order *JMR* or *JMR* reprints.

Single article reprints are available after the issue is published.

Coming this Summer...**MRS is pleased to announce 2 New Workshops!****June 1-2, 2000****High-K Dielectrics
New Orleans, LA****Workshop Chair:**Glen Wilk, *Lucent Technology***Co-Organizers:**Veena Misra, *North Carolina
State University*
Eric Vogel, *NIST***June 19-20, 2000****Transparent
Conducting Oxides
Denver, CO****Workshop Chairs:**David Ginley & Timothy Coutts,
*NREL***Co-Organizers:**Tom Mason, *Northwestern University*
Clark Bright, *Delta V Technologies***MRS
Workshops**

For more information contact:

MRS Materials
Research
Society506 Keystone Drive
Warrendale, PA 15086-7573 U.S.A.
Tel: 724-779-3003
Fax: 724-779-8313
E-mail: info@mrs.org
www.mrs.org