

# Journal of MATERIALS RESEARCH

Volume 21, Number 12, December 2006

## RAPID COMMUNICATIONS

- 2971–2974 The influence of porosity on whisker growth in electroplated tin films J.P. Winterstein, M.G. Norton  
2975–2978 Surface roughness effect in instrumented indentation: A simple contact depth model and its verification Ju-Young Kim, Jung-Jun Lee, Yun-Hee Lee, Jae-il Jang, Dongil Kwon

## OUTSTANDING MEETING PAPER

### Review

- 2979–2985 Introduction to first-principles electronic structure methods: Application to actinide materials John E. Klepeis

## ARTICLES

- 2986–2990 Effect of Cu addition on interfacial reaction between Sn–9Zn solder and Ag Yee-Wen Yen, Chien-Chung Jao, Chiapng Lee  
2991–3000 Extracting the elastic and viscoelastic properties of a polymeric film using a sharp indentation relaxation test C.Y. Zhang, Y.W. Zhang, K.Y. Zeng, L. Shen, Y.Y. Wang  
3001–3008 Microstructure effect of nanocrystalline titanium dioxide prepared by microemulsion technique on photocatalytic decomposition of phenol Theera Anukunprasert, Chintana Saiwan, Enrico Traversa  
3009–3016 Modeling and experimental study of the interface morphology and growth kinetics of fibrous eutectic solidification X. Yao  
3017–3021 Linear growth of Ni<sub>2</sub>Si thin film on n+/p junction at low temperature Yu-Long Jiang, Guo-Ping Ru, Xin-Ping Qu, Bing-Zong Li, Christophe Detavernier, R.L. Van Meirhaeghe  
3022–3028 A study on damage effects of <200 keV protons on ZnO/silicone white paint Haiying Xiao, Chundong Li, Dezhuang Yang, Shiyu He, Yanchun Tao  
3029–3036 On the indentation recovery and fleeting hardness of polymers Catherine A. Tweedie, Krystyn J. Van Vliet  
3037–3046 Residual stress, intermolecular force, and frictional properties distribution maps of diamond films for micro- and nano-electromechanical (M/NEMS) applications S. Gupta, O.A. Williams, R.J. Patel, K. Haenen  
3047–3057 In situ x-ray study of the  $\gamma$ - to  $\alpha$ -Al<sub>2</sub>O<sub>3</sub> phase transformation during atmospheric pressure oxidation of NiAl(110) A. Vlad, A. Stierle, N. Kasper, H. Dosch, M. Rühle  
3058–3064 Effect of growth conditions on B-doped carbon nanotubes Sara M.C. Vieira, Odile Stéphan, David L. Carroll  
3065–3071 Electric current-induced abnormal Cu/ $\gamma$ -InSn<sub>4</sub> interfacial reactions Sinn-wen Chen, Shih-kang Lin  
3072–3079 Atomic force microscopy cantilever simulation by finite element methods for quantitative atomic force acoustic microscopy measurements F.J. Espinoza Beltrán, J. Muñoz-Saldaña, D. Torres-Torres, R. Torres-Martínez, G.A. Schneider  
3080–3089 Particle size, uniformity, and mesostructure control of magnetic core/mesoporous silica shell nanocomposite spheres Wenru Zhao, Jianlin Shi, Hangrong Chen, Lingxia Zhang

(Continued)

3090–3098	<b>Mechanical properties and cytocompatibility of biomimetic hydroxyapatite-gelatin nanocomposites</b>	Ching-Chang Ko, Michelle Oyen, Alison M. Fallgatter, Jin-Hong Kim, Jim Frichton, Wei-Shou Hu
3099–3108	<b>Analysis of local deformation in indented <i>Ensis Siliqua</i> mollusk shells using Raman spectroscopy</b>	David J. Scurr, Stephen J. Eichhorn
3109–3123	<b>Electron beam-induced surface modification and nano-engineering of carbon nanotubes: Single-walled and multiwalled</b>	S. Gupta, R.J. Patel, R.E. Giedd
3124–3133	<b>Influence of Ta content on the physical properties of <math>\text{SrBi}_2\text{Ta}_2\text{O}_9</math> ferroelectric thin films</b>	Fan-Yi Hsu, Ching-Chih Leu, Chao-Hsin Chien, Chen-Ti Hu
3134–3151	<b>New sharp indentation method of measuring the elastic–plastic properties of compliant and soft materials using the substrate effect</b>	Manhong Zhao, Xi Chen, Nagahisa Ogasawara, Anghel Constantin Razvan, Norimasa Chiba, Dongyun Lee, Yong X. Gan
3152–3160	<b>Effects of reaction parameters on the electrochemical formation of multilayer films composed of manganese oxides and tetra-alkylammonium ions</b>	Masaharu Nakayama, Masaki Fukuda, Sayaka Konishi, Tsuyoshi Tonosaki
3161–3167	<b>Extent of plasma damage to porous organosilicate films characterized with nanoindentation, x-ray reflectivity, and surface acoustic waves</b>	F. Iacopi, Y. Travaly, M. Van Hove, A.M. Jonas, J.M. Molina-Aldareguia, M.R. Elizalde, I. Ocaña
3168–3179	<b>Self-propagating, high-temperature combustion synthesis of rhombohedral AlPt thin films</b>	D.P. Adams, M.A. Rodriguez, C.P. Tigges, P.G. Kotula
3180–3186	<b>Minor additions of Sn in a bulk glass-forming Fe-based system</b>	Z.P. Lu, C.T. Liu, X.Z. Wang
3187–3195	<b>New nonhydrolytic route to synthesize crystalline <math>\text{BaTiO}_3</math> nanocrystals with surface capping ligands</b>	Zhuoying Chen, Limin Huang, Jiaqing He, Yimei Zhu, Stephen O'Brien
3196–3204	<b>Interfacial reactions and joint strength of Sn–37Pb and Sn–3.5Ag solders with immersion Ag-plated Cu substrate during aging at 150 °C</b>	Jeong-Won Yoon, Jun Hyung Lim, Hoo-Jeong Lee, Jinho Joo, Seung-Boo Jung, Won-Chul Moon
3205–3209	<b>Gas-phase diffusion and surface reaction as limiting mechanisms in the aerosol-assisted chemical vapor deposition of <math>\text{TiO}_2</math> films from titanium diisopropoxide</b>	A. Conde-Gallardo, M. Guerrero, R. Fragoso, N. Castillo
3210–3214	<b>Subsolidus phase equilibria in the PbO-poor part of the <math>\text{TiO}_2\text{–PbO–SiO}_2</math> system and its application in low-temperature thick-film dielectrics</b>	Marko Hrovat, Thomas Maeder, Caroline Jacq, Janez Holc, Janez Bernard
3215–3221	<b>Fabrication and optical characterizations of gold nanoshell opal</b>	Jin Hyoung Lee, Qi Wu, Wounjhang Park
3222–3233	<b>Role of titanium on the reactive spreading of lead-free solders on alumina</b>	Laurent Gremillard, Eduardo Saiz, Velimir R. Radmilovic, Antoni P. Tomsia
3234–3241	<b>Cadmium- and indium-doped zinc oxide by combustion synthesis using dopant chloride precursors</b>	G. Yogeeswaran, C.R. Chenthamarakshan, N.R. de Tacconi, K. Rajeshwar
3242–3251	<b>Thermochemical study of trivalent-doped ceria systems: <math>\text{CeO}_2\text{–MO}_{1.5}</math> (M = La, Gd, and Y)</b>	Weiqun Chen, Alexandra Navrotsky