



Volume 277 15 July 2013 ISSN 0169-4332

applied surface science

A journal devoted to applied physics
and chemistry of surfaces and interfaces

Editor in Chief:

Henrik Rudolph, Breda, The Netherlands

Editors:

Frederico Rosei, Varennes (QC), Canada

Hikaru Kobayashi, Osaka, Japan

Jingguang Chen, New York, NY, USA

Peter Schaaf, Ilmenau, Germany

Robert L. Opila, Newark, DE, USA

Sefik Suzer, Ankara, Turkey

Tadahiro Komeda, Sendai-Shi, Japan

Thomas K. Lippert, Villigen, Switzerland

Weixin Huang, Hefei, China

Fátima Montemor, Lisboa, Portugal

Peter Kingshott, Hawthorn, Australia

Volume 277, pp. 1–310

15 July 2013

Available online at www.sciencedirect.com

SciVerse ScienceDirect

applied surface science

Contents

Volume 277 (2013)

Regular Papers

- Characterizations of arsenic-doped zinc oxide films produced by atmospheric metal-organic chemical vapor deposition
L.-W. Weng, W.-Y. Uen, S.-M. Lan, S.-M. Liao, T.-N. Yang, C.-H. Wu, H.-F. Hong, W.-Y. Ma and C.-C. Shen 1
- Size dependence and phase transition during melting of *fcc*-Fe nanoparticles: A molecular dynamics simulation
T. Shen, W. Meng, Y. Wu and X. Lu 7
- Plasma nitriding using high H₂ content gas mixtures for a cavitation erosion resistant steel
A.N. Allenstein, C.M. Lepienski, A.J.A. Buschinelli and S.F. Brunatto 15
- In situ synthesis of CoFe₂O₄-Co rods as anode materials for lithium ion batteries
M. Zhang, Y. Jin, Q. Wen, C. Chen and M. Jia 25
- High surface textured SnO₂ hybrid thin films fabricated using the nozzle-spraying process for solar cell applications
L.-W. Chou, Y.-Y. Lin and A.T. Wu 30
- The optical and structural properties of amorphous Nb₂O₅ thin films prepared by RF magnetron sputtering
Ö.D. Coşkun and S. Demirel 35
- Effects of catalyst characters on the photocatalytic activity and process of NiO nanoparticles in the degradation of methylene blue
X. Wan, M. Yuan, S.-I. Tie and S. Lan 40
- Polyethylenimine loaded nanoporous carbon with ultra-large pore volume for CO₂ capture
Z. Tang, Z. Han, G. Yang and J. Yang 47
- Photoelectrochemical performance of dye-sensitized solar cells based on the TiO₂ nanotube array/nanoparticle-multilayer composite electrode
D.M. Song, Y.H. Qiang, Y.L. Zhao, X.Q. Gu and C.B. Song 53
- Characterization of oil-proof papers containing new-type of fluorochemicals Part 1: Surface properties and printability
S. Fukuda, D. Chaussy, M.N. Belgacem, N. Reverdy-Bruas and W. Thielemans 57
- Superhydrophobic silica coating by dip coating method
S.A. Mahadik, V. parale, R.S. Vhatkara, D.B. Mahadik, M.S. Kavale, P.B. Wagh, S. Gupta and J. Gurav 67
- Effect of reaction time and Sb doping ratios on the architecturing of ZnO nanomaterials for gas sensor applications
H. Shokry Hassan, A.B. Kashyout, H.M.A. Soliman, M.A. Uosif and N. Afify 73
- Surface precipitation of chromium in rapidly solidified Cu-Cr alloys
M. Bizjak, B. Karpe, G. Jakša and J. Kovač 83
- Flowing nitrogen assisted-arc discharge synthesis of nitrogen-doped single-walled carbon nanohorns
L. Sun, C. Wang, Y. Zhou, X. Zhang, B. Cai and J. Qiu 88
- Photocatalytic selective oxidation of phenol in suspensions of titanium dioxide with exposed {0 0 1} facets
H. Ye and S. Lu 94
- Fabrication and characterization of multilayered nanoporous platinum films deposited by electroplating and nonionic surfactant molds
Y.-J. Lee and J.-Y. Park 100
- Electrodeposited Ag nanoparticles on TiO₂ nanorods for enhanced UV visible light photoreduction CO₂ to CH₄
D. Kong, J.Z.Y. Tan, F. Yang, J. Zeng and X. Zhang 105
- Photoactive layer-by-layer films of cellulose phosphate and titanium dioxide containing phosphotungstic acid
S. Ullah, J.J.S. Acuña, A.A. Pasa, S.A. Bilmes, M.E. Vela, G. Benitez and U.P. Rodrigues-Filho 111
- Preparation and dielectric properties of core-shell structural composites of poly(1H,1H,2H,2H-perfluorooctyl methacrylate) @BaTiO₃ nanoparticles
X. Zhang, H. Chen, Y. Ma, C. Zhao and W. Yang 121
- Optimizing processes of dispersant concentration and post-treatments for fabricating single-walled carbon nanotube transparent conducting films
J. Gao, W.-Y. Wang, L.-T. Chen, L.-J. Cui, X.-Y. Hu and H.-Z. Geng 128
- Friction behavior of Mg-Al-CO₃ layered double hydroxide prepared by magnesite
X. Wang, Z. Bai, D. Zhao and F. Zhao 134
- Effect of chromium on the formation of intermetallic phases in hot-dipped aluminide Cr-Mo steels
W.-J. Cheng and C.-J. Wang 139
- Reactive carbon microspheres prepared by surface-grafting 4-(chloromethyl)phenyltrimethoxysilane for preparing molecularly imprinted polymer
W. Liu, H. Zhao, Y. Yang, X. Liu and B. Xu 146
- The effect of surfactants on the electropolishing behavior of copper in orthophosphoric acid
A.A. Taha, A.M. Ahmed, H.H.A. Rahman and F.M. Abouzeid 155
- Effect of an *in situ* hydrogen plasma pre-treatment on the reduction of GaSb native oxides prior to atomic layer deposition
E.R. Cleveland, L.B. Ruppalt, B.R. Bennett and S.M. Prokes 167
- Transparent glass coatings incorporated with upconversion nanocrystals by laser cladding method
M. Ding, C. Lu, L. Cao, W. Huang, Y. Ni and Z. Xu 176
- Silicide layer formation in evaporated and sputtered Fe/Si multilayers: X-ray and neutron reflectivity study
S.M. Amir, M. Gupta, A. Gupta, A. K. and J. Stahn 182
- Characterization by TEM and ToF-SIMS of the oxide layer formed during anaphoretic paint electrodeposition on Al-alloys
M. Collinet-Fressancourt, N. Nuns, S. Bellayer and M. Traisnel 186
- Alkaline vapor oxidation synthesis and electrocatalytic activity toward glucose oxidation of CuO/ZnO composite nanoarrays
T. Soejima, K. Takada and S. Ito 192
- Optimization of synthesis parameters of mesoporous silica sol-gel thin films for application on 2024 aluminum alloy substrates
I. Recloux, M. Debliquy, A. Baroni, Y. Paint, A. Lanzutti, L. Fedrizzi and M.-G. Olivier 201

(Contents continued on BM I)



(Continued from outside back cover)

Antimicrobial activities of CuO films deposited on Cu foils by solution chemistry N. Ekthammathat, T. Thongtem and S. Thongtem	211	Surface morphologies of homoepitaxial ZnO thin films on non-miscut ZnO substrates M. Wei, R.C. Boutwell and W.V. Schoenfeld	263
Preparation and investigation of sputtered vanadium dioxide films with large phase-transition hysteresis loops H. Zhang, Z. Wu, Q. He and Y. Jiang	218	Hydrothermal synthesis of copper sulfide with novel hierarchical structures and its application in lithium-ion batteries G.-Y. Chen, Z.-Y. Wei, B. Jin, X.-B. Zhong, H. Wang, W.-X. Zhang, J.-C. Liang and Q. Jiang	268
Study of Pt catalyst on graphene and its application to fuel cell S.H. Hsieh, M.C. Hsu, W.L. Liu and W.J. Chen	223	Preparation and corrosion resistance of MAO/Ni-P composite coat on Mg alloy X. Fan, Y. Wang, B. Zou, L. Gu, W. Huang and X. Cao	272
Influence of V _B group doped TiO ₂ on photovoltaic performance of dye-sensitized solar cells J. Liu, Y. Duan, X. Zhou and Y. Lin	231	Controlling and tuning the dispersion properties of calcined kaolinite particles in various organic solvents via stepwise modification method using 3-glycidoxypropyltrimethoxysilane and dodecylamine Y. Yuan and H. Chen	281
Thermochromic properties of VO ₂ thin film on SiN _x buffered glass substrate H. Koo, H. You, K.-E. Ko, O.-J. Kwon, S.-H. Chang and C. Park	237	Preparation of acid-base bifunctional core-shell structured Fe ₃ O ₄ @SiO ₂ nanoparticles and their cooperative catalytic activity Y. Long, M. Xie, J. Niu, P. Wang and J. Ma	288
Clay honeycomb monoliths for water purification: Modulating methylene blue adsorption through controlled activation via natural coal templating J.M. Gatica, D.M. Gómez, S. Harti and H. Vidal	242	Investigation of factors influencing the catalytic performance of CO oxidation over Au-Ag/SBA-15 catalyst Z. Qu, G. Ke, Y. Wang, M. Liu, T. Jiang and J. Gao	293
Electroless plating of PVC plastic through new surface modification method applying a semi-IPN hydrogel film M.-Q. Wang, J. Yan, S.-G. Du and H.-G. Li	249	A simple cost-effective and eco-friendly wet chemical process for the fabrication of superhydrophobic cotton fabrics E. Richard, R.V. Lakshmi, S.T. Aruna and B.J. Basu	302
A dansyl group modified SBA-15 INHIBIT logic gate with [Hg ²⁺ and Cl ⁻] or [Hg ²⁺ and Br ⁻] as inputs X. Wang and H. Yang	257		