

Journal of Vacuum Science & Technology A

Vacuum, Surfaces, and Films



JVSTA

Second Series
Volume 31, Number 3
May/Jun 2013

Letters

ToF-SIMS depth profiling of organic solar cell layers using an Ar cluster ion source

- Vincent S. Smentkowski, Gilad Zorn, Amanda Misner, Gautam Parthasarathy, Aaron Couture, Elke Tallarek, and Birgit Hagenhoff 030601

Theoretical investigation of cubic B1-like and corundum $(\text{Cr}_{1-x}\text{Al}_x)_2\text{O}_3$ solid solutions

- Björn Alling, Ali Khatibi, Sergei I. Simak, Per Eklund, and Lars Hultman 030602

Enhancement of solution-processed zinc tin oxide thin film transistors by silicon incorporation

- Sung Ryul Mang, Dae Ho Yoon, In Young Jeon, Ho Kyoon Chung, and Lyong Sun Pu 030603

Low-temperature CVD of $\eta\text{-Mn}_3\text{N}_{2-x}$ from bis[di(tert-butyl)amido]manganese(II) and ammonia

- Teresa S. Spicer, Charles W. Spicer, Andrew N. Cloud, Luke M. Davis, Gregory S. Girolami, and John R. Abelson 030604

Review Article

Molecular dynamics simulation of atomic friction: A review and guide

- Yalin Dong, Qunyang Li, and Ashlie Martini 030801

Interfaces

Electron-injecting properties of Rb_2CO_3 -doped Alq_3 thin films in organic light-emitting diodes

- Jin Woo Park, Jong Tae Lim, Jong Sik Oh, Sung Hee Kim, Phuong Pham Viet, Myung S. Jhon, and Geun Young Yeom 031101

(Continued)

Journal of Vacuum Science & Technology A (ISSN: 0734-2101) is published six times annually (Jan/Feb, Mar/Apr, May/Jun, Jul/Aug, Sep/Oct, Nov/Dec) by AVS through AIP Publishing LLC, Suite 1NO1, 2 Huntington Quadrangle, Melville, NY 11747-4502. 2013 subscription rates are: US\$1720. POSTMASTER: Send address changes to *Journal of Vacuum Science & Technology A*, Membership Services, AVS, 125 Maiden Lane, 15th Floor, New York, NY 10038, membership@avs.org, www.avs.org. Periodicals postage paid at Huntington Station, NY 11746, and at additional mailing offices.

Subscriptions, renewals, and address changes should be addressed to: for members: *Membership Services, AVS, 125 Maiden Lane, 15th Floor, New York, NY 10038, membership@avs.org, www.avs.org*; Institutional Subscribers, please submit to *AIP Publishing Subscription Fulfillment Division, AIP Publishing LLC, Suite 1NO1, 2 Huntington Quadrangle, Melville, NY 11747-4502*. Allow at least six weeks advance notice. For address changes please send both old and new addresses and, if possible, include a label from the plastic mailing wrapper of a recent issue. Missing issue requests will be honored only if received within six months of publication date (nine months for Australia and Asia).

Single-copy orders (current and back issues) should be addressed to AIP Publishing LLC, Circulation and Fulfillment Division, Suite 1NO1, 2 Huntington Quadrangle, Melville, NY 11747-4502; Telephone: 800-344-6902 (or 516-576-2270 outside the U.S.A.), Fax at 516-349-9704, or E-mail at subs@aip.org.

Reprints: Reprints can be ordered with or without covers only in multiples of 50 from AIP Publishing, Circulation and Fulfillment/Reprints, Suite 1NO1, 2 Huntington Quadrangle, Melville, NY 11747-4502; Fax: 516-349-9704; Telephone: 800-344-6909 (U.S. and Canada) or 516-576-2270.

Document Delivery: Copies of journal articles can be ordered for online delivery from DocumentStore, AIP Publishing's online document delivery service (<http://ojs.aip.org/documentstore/>).

Online Access: The *Journal of Vacuum Science and Technology A* is available online to AVS members at no additional charge; for details, please see <http://ojs.aip.org/jvsta/>. Abstracts of journal articles are available from AIP Publishing's SPIN Web Service (<http://ojs.aip.org/spinweb/>).

[†]Print and online.

[‡]Print, CD-ROM, and online.

[#]CD-ROM and online only.

*Nonmember subscriptions include air freight service.

Back-Number Prices. 2012 single copy: \$300; prior to 2012 single copy: \$186.

Characterization of thin film adhesion by MEMS shaft-loading blister testing	
Maria Berdova, Jussi Lyytinen, Kestutis Grigoras, Anu Baby, Lauri Kilpi, Helena Ronkainen, Sami Franssila, and Jari Koskinen	031102
Beyond hard x-ray photoelectron spectroscopy: Simultaneous combination with x-ray diffraction	
Juan Rubio-Zuazo and German R. Castro	031103

Photovoltaics and Energy

Investigation of shunt path evolution originated from transparent conductive oxides in Si-based thin film solar cells	
Minho Joo, Jungmin Lee, Kyuho Park, Jin-Won Chung, Seh-Won Ahn, and Heon-Min Lee.....	031201

Plasma Science and Technology

Characteristics of silicon etching by silicon chloride ions	
Tomoko Ito, Kazuhiro Karahashi, Song-Yun Kang, and Satoshi Hamaguchi	031301
Real-time control of electron density in a capacitively coupled plasma	
Bernard Keville, Yang Zhang, Cezar Gaman, Anthony M. Holohan, Stephen Daniels, and Miles M. Turner	031302
Nitrogen actinometry for measurement of nitrogen radical spatial distribution in large-area plasma-enhanced chemical vapor deposition	
Changhoon Oh, Minwook Kang, Seungsuk Nam, and Jae W. Hahn	031303
Computational modeling study of the radial line slot antenna microwave plasma source with comparisons to experiments	
Laxminarayan L. Raja, Shankar Mahadevan, Peter L. G. Ventzek, and Jun Yoshikawa	031304
Selective etching of TiN over TaN and vice versa in chlorine-containing plasmas	
Hyungjoo Shin, Weiye Zhu, Lei Liu, Shyam Sridhar, Vincent M. Donnelly, Demetre J. Economou, Chet Lenox, and Tom Lii.....	031305
Impact of static magnetic fields on the radial line slot antenna plasma source	
Jun Yoshikawa and Peter L. G. Ventzek.....	031306

Surfaces

Measurement of the Auger parameter and Wagner plot for uranium compounds	
Kiel S. Holliday, Wigbert Siekhaus, and Art J. Nelson	031401
In situ formation and electron-spectroscopic study of bis(arene) V and Cr compounds on a graphite surface	
Victor M. Bermudez	031402
Subnanometer-resolution depth profiling of boron atoms and lattice defects in silicon ultrashallow junctions by ion beam techniques	
Lakshmanan H. Vanamurthy, Mengbing Huang, Hassaram Bakhru, Toshiharu Furukawa, Nathaniel Berliner, Joshua Herman, Zhengmao Zhu, Paul Ronsheim, and Bruce Doris	031403
Improvement of the surface quality of semi-insulating InP substrates through a novel etching and cleaning method	
Jingming Liu, Youwen Zhao, Zhiyuan Dong, Fengyun Yang, Fenghua Wang, Kewei Cao, Tong Liu, Hui Xie, and Teng Chen	031404
Vibronic fine structure in high-resolution x-ray absorption spectra from ion-bombarded boron nitride nanotubes	
Mladen Petracic, Robert Peter, Marijana Varasanec, Lu Hua Li, Ying Chen, and Bruce C. C. Cowie.....	031405
Low temperature oxidation of plutonium	
Art J. Nelson and Paul Roussel.....	031406

(Continued)

Thin Films

Effect of quantum dot length on the degree of electron localization in polymer wires grown by molecular layer deposition

Tetsuzo Yoshimura and Sho Ishii 031501

Axial resistivity measurement of a nanopillar ensemble using a cross-bridge Kelvin architecture

Abeed Lalany, Ryan Thomas Tucker, Michael Thomas Taschuk, Michael David Fleischauer, and Michael Julian Brett 031502

Validity of automated x-ray photoelectron spectroscopy algorithm to determine the amount of substance and the depth distribution of atoms

Sven Tougaard 031503

Polarity control and transport properties of Mg-doped (0001) InN by plasma-assisted molecular beam epitaxy

Soojeong Choi, Feng Wu, Oliver Bierwagen, and James S. Speck 031504

Influence of plasma treatment on optical and electrical properties of a-InGaZnO films

Li Xifeng, Xin Enlong, Shi Jifeng, Li Chunya, and Zhang Jianhua 031505

Effects of preparation conditions on the magnetocaloric properties of Gd thin films

Hillary F. Kirby, Dustin D. Belyea, Jonathon T. Willman, and Casey W. Miller 031506

Glancing angle deposition on a roll: Towards high-throughput nanostructured thin films

Kathleen M. Krause, Michael T. Taschuk, and Michael J. Brett 031507

Effects of gas environment on electronic and optical properties of amorphous indium zinc tin oxide thin films

Yus Rama Denny, Sunyoung Lee, Kangil Lee, Soonjoo Seo, Suhk Kun Oh, Hee Jae Kang, Sung Heo, Jae Gwan Chung, Jae Cheol Lee, and Sven Tougaard 031508

Atomic layer deposition of titanium dioxide using titanium tetrachloride and titanium tetraisopropoxide as precursors

Rohan P. Chaukulkar and Sumit Agarwal 031509

Vacuum Science and Technology

Electron stimulated desorption from the 316L stainless steel as a function of impact electron energy

Oleg B. Malyshev, Rebecca M. A. Jones, Benjamin T. Hogan, and Adrian Hannah 031601

Investigation of the time evolution of STM-tip temperature during electron bombardment

David Hellmann, Ludwig Worbes, Konstantin Kloppstech, Nils Könne, and Achim Kittel 031602

Brief Reports and Comments

Versatile Rb vapor cells with long lifetimes

John F. Hulbert, Matthieu Giraud-Carrier, Tom Wall, Aaron R. Hawkins, Scott Bergeson, Jennifer Black, and Holger Schmidt 033001

CUMULATIVE AUTHOR INDEX

A13

On The Cover: Zhijiang Ye, Yalin Dong, Qunyang Li, and Ashlie Martini, JVSTA, 31(3), p. 030801-1 (2013). Cover shows an atomistic model of an atomic force microscope's nanoscale tip sliding across a graphite substrate.