

Articles

- Analysis of controlled mixed-phase (amorphous+microcrystalline) silicon thin films by real time spectroscopic ellipsometry**
N. J. Podraza, Jing Li, C. R. Wronski, E. C. Dickey, and R. W. Collins 1255
- Characterizations of Ga-doped ZnO films on Si (111) prepared by atmospheric pressure metal-organic chemical vapor deposition**
Yen-Chin Huang, Zhen-Yu Li, Li-Wei Weng, Wu-Yih Uen, Shan-Ming Lan, Sen-Mao Liao, Tai-Yuan Lin, Yu-Hsiang Huang, Jian-Wen Chen, Tsun-Neng Yang, and Chin-Chen Chiang 1260
- Effects of Si capping layers on the properties of ultrathin Co/Ir(111) films**
J. S. Tsay, Y. C. Liou, C. M. Chen, and W. Y. Chan 1266
- Kinetic modeling of the effect of electron beam pulse duration on abatement of carbon tetrafluoride using O₂ as an additive gas**
Susumu Kato, Isao Okuda, Eiichi Takahashi, and Yuji Matsumoto 1271
- Effect of magnetic field strength on deposition rate and energy flux in a dc magnetron sputtering system**
Samuel D. Ekpe, Francisco J. Jimenez, David J. Field, Martin J. Davis, and Steven K. Dew 1275
- Time of flight secondary ion mass spectroscopy studies of poly(allyl methacrylate-*g*-dimethylsiloxane) copolymers using cryogenic sample handling techniques: Effects of hydration on surface chemical structure and surface chain length distribution**
Daniel J. Hook, Lu Chen, Paul L. Valint, Jr., and Joseph A. Gardella, Jr. 1281

(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 the American Institute of Physics, Suite 1N01, 2 Huntington Quadrangle, Melville, NY 11747-4502. 2009 subscription rates are: US\$1520. 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.

Membership in AVS includes \$17.50 from membership dues to be applied towards a subscription to *Journal of Vacuum Science & Technology A*.

Subscription Prices (2009)

	U.S.A. and Poss.	Can., Mex., Central & S. America & Caribbean	Europe, Asia, Africa & Oceania*
JVST A ¹	\$1520	\$1580	\$1630
JVST A ¹	\$1750	\$1810	\$1860
JVST A and B ¹	\$1750	\$1870	\$1950
JVST A and B ²	\$1750	\$1800	\$1800
JVST A and B ³	\$1980	\$2100	\$2180

¹Print and online

²Print, CD-ROM, and online.

³CD-ROM and online only.

*Nonmember subscriptions include air-freight service.

Back-Number Prices. 2009 single copy: \$186; prior to 2009 single copy: \$186.

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 Subscription Fulfillment Division, AIP, Suite 1N01, 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 American Institute of Physics, Circulation and Fulfillment Division, Suite 1N01, 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, Circulation and Fulfillment/Reprints, Suite 1N01, 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's online document delivery service (<http://ojs.aip.org/documentstore/>).

Microform: *Journal of Vacuum Science & Technology A* is available on microfiche issued at the same frequency as the printed journal and annually on microfilm. Direct requests to AIP, Circulation and Fulfillment/Single Copy Sales, Suite 1N01, 2 Huntington Quadrangle, Melville, NY 11747-4502; Fax 516-349-9704; Telephone: 800-344-6908 (U.S. and Canada) or 516-576-2270.

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's SPIN Web Service (<http://ojs.aip.org/spinweb/>).

Mechanisms for plasma etching of HfO₂ gate stacks with Si selectivity and photoresist trimming Juline Shoeb and Mark J. Kushner	1289
Development of copper-alloy Matsumoto–Ohtsuka-type vacuum flanges and its application to accelerator beam pipes Y. Suetsugu, M. Shirai, M. Ohtsuka, T. Nishidono, K. Watanabe, Y. Suzuki, M. Tsuchiya, A. Yonemoto, K. Sennyu, and H. Hara	1303
Effects of pulsed sputtering frequency on the uniformity of Al:ZnO's transparent conductive oxide properties for solar cell applications Wonkyun Yang and Junghoon Joo	1310
Zn-doped CuAlS₂ transparent p-type conductive thin films deposited by pulsed plasma deposition Ming Yang, Yinghua Wang, Guifeng Li, Zhan Shi, and Qun Zhang	1316
Dry-etching properties of TiN for metal/high-k gate stack using BCl₃-based inductively coupled plasma Dong-Pyo Kim, Xue Yang, Jong-Chang Woo, Doo-Seung Um, and Chang-Il Kim	1320
Modeling of the angular dependence of plasma etching Wei Guo and Herbert H. Sawin	1326
Ferroelectric polarization dependent interactions at Pd–LiNbO₃(0001) interfaces Moshu H. Zhao, Dawn A. Bonnell, and John M. Vohs	1337
UV detection based on a ZnO/LiNbO₃ layered surface acoustic wave oscillator circuit Ching-Liang Wei, Ying-Chung Chen, Jiun-Lin Fu, Kuo-Sheng Kao, Da-Long Cheng, and Chien-Chuan Cheng	1343
Synthesis and hydrogen gas sensing properties of ZnO wirelike thin films Nguyen Le Hung, Eunseong Ahn, Seongyong Park, Hooncheol Jung, Hyojin Kim, Soon-Ku Hong, Dojin Kim, and Chanyong Hwang	1347
Transmission electron microscopy specimen preparation perpendicular to the long axis of high aspect ratio features R. B. Irwin, A. Anciso, P. J. Jones, A. L. Glenn, B. L. Williams, S. Sridhar, and S. Arshad	1352
Structure and properties of ZrN doped diamondlike carbon films prepared by pulsed bias arc ion plating H. K. Li, G. Q. Lin, and C. Dong	1360
Analysis of carbon in SrTiO₃ grown by hybrid molecular beam epitaxy Bharat Jalan, Joël Cagnon, Thomas E. Mates, and Susanne Stemmer	1365
Effects of type of reactor, crystallinity of SiC, and NF₃ gas pressure on etching rate and smoothness of SiC surface using NF₃ gas plasma A. Tasaka, H. Yamada, T. Nonoyama, T. Kanatani, Y. Kotaka, T. Tojo, and M. Inaba	1369
Simulation of gas flow through tubes of finite length over the whole range of rarefaction for various pressure drop ratios S. Varoutis, D. Valougeorgis, and F. Sharipov	1377
Preferential growth of helium-doped Ti films deposited by magnetron sputtering Lei Zhang, L. Q. Shi, Z. J. He, B. Zhang, and L. B. Wang	1392

INDEX

Summary of the Physics and Astronomy Classification Scheme—2009	1400
PACS Headings Used in the Present Index	1401
Subject Index to Volume 27	1405
Author Index to Volume 27	1429
Materials Index to Volume 27	1441