

Journal of Vacuum Science & Technology A

Vacuum, Surfaces, and Films

JVSTA

Second Series
Volume 29, Number 2
Mar/Apr 2011

Review Article

Status and potential of atmospheric plasma processing of materials

Daphne Pappas 020801

Articles

Physical vapor deposition and patterning of calcium fluoride films

L. Piñol, K. Rebello, K. Caruso, A. S. Francomacaro, and G. L. Coles 021001

High-corrosion-resistant Al₂O₃ passivation-film formation by selective oxidation on austenitic stainless steel containing Al

Masafumi Kitano, Hidekazu Ishii, Yasuyuki Shirai, and Tadahiro Ohmi 021002

MIAMI: Microscope and ion accelerator for materials investigations

J. A. Hinks, J. A. van den Berg, and S. E. Donnelly 021003

Spectroscopic ellipsometry and x-ray photoelectron spectroscopy of La₂O₃ thin films deposited by reactive magnetron sputtering

V. V. Atuchin, A. V. Kalinkin, V. A. Kochubey, V. N. Kruchinin, R. S. Vemuri, and C. V. Ramana 021004

Experimental evaluation of an adaptive Joule-Thomson cooling system including silicon-microfabricated heat exchanger and microvalve components

Welbin Zhu, Jong M. Park, Michael J. White, Gregory F. Nellis, and Yogesh B. Gianchandani 021005

(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 1NO1, 2 Huntington Quadrangle, Melville, NY 11747-4502. 2011 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 (2011)

	U.S.A. and Poss.	Can., Mex., Central & S. America & Caribbean	Europe, Asia, Africa & Oceania*
JVSTA ^T	\$1570	\$1630	\$1680
JVSTA ^A	\$1795	\$1875	\$1920
JVSTA and B ^T	\$1795	\$1925	\$1995
JVSTA and B ^A	\$1795	\$1850	\$1850
JVSTA and B ^A	\$2050	\$2160	\$2245

*Print and online.

^TPrint, CD-ROM, and online.

*CD-ROM and online only.

*Nonmember subscriptions include air-freight service.

Back-Number Prices. 2011 single copy: \$186; prior to 2011 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 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 American Institute of Physics, 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, 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'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 1NO1, 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/>).

Formation of Pd nanocrystals in titanium-oxide film by rapid thermal annealing of reactively cosputtered TiPdO films

Wan-Yi Huang, Shi-Jin Ding, Hong-Bing Chen, Qing-Qing Sun, and David Wei Zhang 021006

Surface activated bonding of copper through silicon vias and gold stud bumps at room temperature

M. M. R. Howlader, F. Zhang, M. J. Deen, T. Suga, and A. Yamauchi 021007

Confirmation of sample quality: X-ray and ultraviolet photoelectron spectroscopies of uranium dioxide

S.-W. Yu and J. G. Tobin 021008

High rate deep Si etching for through-silicon via applications

Itsuko Sakai, Noriko Sakurai, and Tokuhisa Ohiwa 021009

Highly textured growth of AlN films on sapphire by magnetron sputtering for high temperature surface acoustic wave applications

T. Aubert, M. B. Assouar, O. Legrani, O. Elmazria, C. Tiusan, and S. Robert 021010

Surface melting and recrystallization of a self-assembled octanethiol monolayer on Au(111)

Fangsen Li, Wan-cheng Zhou, Lin Tang, and Quanmin Guo 021011

Plasma-enhanced chemical vapor deposition synthesis of silica-silicone nanolaminates using a single precursor

Rakhi P. Patel and Colin A. Wolden 021012

Microstructure and residual stress of magnetron sputtered nanocrystalline palladium and palladium gold films on polymer substrates

Anna Castrup, Christian Kübel, Torsten Scherer, and Horst Hahn 021013

Deposition of ultrathin AlN films for high frequency electroacoustic devices

Valery V. Felmetzger, Pavel N. Laptev, and Roger J. Graham 021014

Ripple formation on atomically flat cleaved Si surface with roughness of 0.038 nm rms by low-energy Ar⁺ ion bombardment

Shahjada A. Pahlový, S. F. Mahmud, K. Yanagimoto, and I. Miyamoto 021015

Atomic layer deposition of Ru from CpRu(CO)₂Et using O₂ gas and O₂ plasma

N. Leick, R. O. F. Verkuijen, L. Lamagna, E. Langereis, S. Rushworth, F. Roozeboom, M. C. M. van de Sanden, and W. M. M. Kessels 021016

Polymer molded templates for nanostructured amorphous silicon photovoltaics

Lei Pei, Amy Balls, Cary Tippets, Jonathan Abbott, Matthew R. Linford, Jian Hu, Arun Madan, David D. Allred, Richard R. Vanfleet, and Robert C. Davis 021017

CUMULATIVE AUTHOR INDEX

A13

On The Cover: Daphne Pappas, Review Article: Status and Potential of Atmospheric Plasma Processing of Materials, *Journal of Vacuum Science & Technology, A* 29(2), Figure 6a, p. 020801-5 (2011). Cover shows dielectric barrier discharge operating under atmospheric pressure for materials processing.