

## LETTERS

### **Correlation between microstructure and thermionic electron emission from Os-Ru thin films on dispenser cathodes**

Phillip D. Swartzentruber, Thomas John Balk and Michael P. Effgen

J. Vac. Sci. Technol. A **32**, 040601 (2014); <http://dx.doi.org/10.1116/1.4876337>

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### **Transport band gap opening at metal–organic interfaces**

Francisc Haidu, Georgeta Salvan, Dietrich R. T. Zahn, Lars Smykalla, Michael Hietschold and Martin Knupfer

J. Vac. Sci. Technol. A **32**, 040602 (2014); <http://dx.doi.org/10.1116/1.4882857>

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## REVIEW ARTICLES

### **Nonisostructural complex oxide heteroepitaxy**

Franklin J. Wong and Shriram Ramanathan

J. Vac. Sci. Technol. A **32**, 040801 (2014); <http://dx.doi.org/10.1116/1.4879695>

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### **Magnetocaloric effect in nanoscale thin films and heterostructures**

Casey W. Miller, Dustin D. Belyea and Brian J. Kirby

J. Vac. Sci. Technol. A **32**, 040802 (2014); <http://dx.doi.org/10.1116/1.4882858>

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## PLASMA SCIENCE AND TECHNOLOGY

### **Attenuation of wall disturbances in an electron cyclotron resonance oxygen–argon plasma using real time control**

Bernard Keville, Cezar Gaman, Yang Zhang, Anthony M. Holohan, Miles M. Turner and Stephen Daniels

J. Vac. Sci. Technol. A **32**, 041301 (2014); <http://dx.doi.org/10.1116/1.4879458>

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### **Silicon etch using SF<sub>6</sub>/C<sub>4</sub>F<sub>8</sub>/Ar gas mixtures**

Robert L. Bates, P. L. Stephan Thamban, Matthew J. Goeckner and Lawrence J. Overzet

J. Vac. Sci. Technol. A **32**, 041302 (2014); <http://dx.doi.org/10.1116/1.4880800>

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### **Finite-element simulation models and experimental verification for through-silicon-via etching: Bosch process and single-step etching**

Zihao Ouyang, Wenyu Xu, D. N. Ruzic, Mark Kiehlbauch, Alex Schrinsky and Kevin Torek

J. Vac. Sci. Technol. A **32**, 041303 (2014); <http://dx.doi.org/10.1116/1.4882215>

[+ VIEW DESCRIPTION](#)**Anisotropic Ta<sub>2</sub>O<sub>5</sub> waveguide etching using inductively coupled plasma etching**

Muhammad Firdaus A. Muttalib, Ruiqi Y. Chen, Stuart J. Pearce and Martin D. B. Charlton  
J. Vac. Sci. Technol. A **32**, 041304 (2014); <http://dx.doi.org/10.1116/1.4884557>

[+ VIEW DESCRIPTION](#)**Thermodynamic assessment and experimental verification of reactive ion etching of magnetic metal elements**

Taeseung Kim, Jack Kun-Chieh Chen and Jane P. Chang  
J. Vac. Sci. Technol. A **32**, 041305 (2014); <http://dx.doi.org/10.1116/1.4885061>

[+ VIEW DESCRIPTION](#)**Etching mechanism of the single-step through-silicon-via dry etch using SF<sub>6</sub>/C<sub>4</sub>F<sub>8</sub> chemistry**

Zihao Ouyang, D. N. Ruzic, Mark Kiehlbauch, Alex Schrinsky and Kevin Torek  
J. Vac. Sci. Technol. A **32**, 041306 (2014); <http://dx.doi.org/10.1116/1.4885500>

[+ VIEW DESCRIPTION](#)**Power coupling and utilization efficiencies of silicon-depositing plasmas in mixtures of H<sub>2</sub>, SiH<sub>4</sub>, Si<sub>2</sub>H<sub>6</sub>, and Si<sub>3</sub>H<sub>8</sub>**

Mark A. Sobolewski, Robert G. Ridgeway, Mark D. Bitner, Dino Sinatore and Patrick T. Hurley  
J. Vac. Sci. Technol. A **32**, 041307 (2014); <http://dx.doi.org/10.1116/1.4885368>

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## SURFACES

**High density and taper-free boron doped Si<sub>1-x</sub>Ge<sub>x</sub> nanowire via two-step growth process**

Priyanka Periwal, Bassem Salem, Franck Bassani, Thierry Baron and Jean-Paul Barnes  
J. Vac. Sci. Technol. A **32**, 041401 (2014); <http://dx.doi.org/10.1116/1.4883225>

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## THIN FILMS

**Solution based prompt inorganic condensation and atomic layer deposition of Al<sub>2</sub>O<sub>3</sub> films: A side-by-side comparison**

Sean W. Smith, Wei Wang, Douglas A. Keszler and John F. Conley Jr.  
J. Vac. Sci. Technol. A **32**, 041501 (2014); <http://dx.doi.org/10.1116/1.4874806>

[+ VIEW DESCRIPTION](#)**Effect of conductive TiN buffer layer on the growth of stoichiometric VO<sub>2</sub> films and the out-of-plane insulator–metal transition properties**

Md. Suruz Mian and Kunio Okimura

J. Vac. Sci. Technol. A **32**, 041502 (2014); <http://dx.doi.org/10.1116/1.4874844>

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**Nb-B-C thin films for electrical contact applications deposited by magnetron sputtering**

Nils Nedfors, Olof Tengstrand, Per Eklund, Lars Hultman and Ulf Jansson

J. Vac. Sci. Technol. A **32**, 041503 (2014); <http://dx.doi.org/10.1116/1.4875135>

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**Effect of postdeposition annealing on the electrical properties of  $\beta$ - $\text{Ga}_2\text{O}_3$  thin films grown on  $p$ -Si by plasma-enhanced atomic layer deposition**

Halit Altuntas, Inci Donmez, Cagla Ozgit-Akgun and Necmi Biyikli

J. Vac. Sci. Technol. A **32**, 041504 (2014); <http://dx.doi.org/10.1116/1.4875935>

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**Surface chemistry of a Cu(I) beta-diketonate precursor and the atomic layer deposition of  $\text{Cu}_2\text{O}$  on  $\text{SiO}_2$  studied by x-ray photoelectron spectroscopy**

Dileep Dhakal, Thomas Waechtler, Stefan E. Schulz, Thomas Gessner, Heinrich Lang, Robert Mothes and André Tuchscherer

J. Vac. Sci. Technol. A **32**, 041505 (2014); <http://dx.doi.org/10.1116/1.4878815>

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**Monolithic integration of rare-earth oxides and semiconductors for on-silicon technology**

Rytis Dargis, Andrew Clark, Fevzi Erdem Arkun, Tomas Grinys, Rolandas

Tomasiusas, Andy O'Hara and Alexander A. Demkov

J. Vac. Sci. Technol. A **32**, 041506 (2014); <http://dx.doi.org/10.1116/1.4882173>

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**Flexible x-ray imaging detector based on direct conversion in amorphous selenium**

Tsung-Ter Kuo, Chien-Ming Wu, Hui-Hsin Lu, Isaac Chan, Kai Wang and Keh-Chyang Leou

J. Vac. Sci. Technol. A **32**, 041507 (2014); <http://dx.doi.org/10.1116/1.4882835>

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**Improved oxidation resistance of organic/inorganic composite atomic layer deposition coated cellulose nanocrystal aerogels**

Sean W. Smith, Christian Buesch, David J. Matthews, John Simonsen and John F. Conley Jr.

J. Vac. Sci. Technol. A **32**, 041508 (2014); <http://dx.doi.org/10.1116/1.4882239>

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## THIN FILMS

### Structure and electrical properties of Nb-Ge-C nanocomposite coatings

Olof Tengstrand, Nils Nedfors, Lars Fast, Axel Flink, Ulf Jansson, Per Eklund and Lars Hultman

J. Vac. Sci. Technol. A **32**, 041509 (2014); <http://dx.doi.org/10.1116/1.4882856>

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### Reactive sputtering of $\delta$ -ZrH<sub>2</sub> thin films by high power impulse magnetron sputtering and direct current magnetron sputtering

Hans Höglberg, Lina Tengdelius, Mattias Samuelsson, Fredrik Eriksson, Esteban Broitman, Jun Lu, Jens Jensen and Lars Hultman

J. Vac. Sci. Technol. A **32**, 041510 (2014); <http://dx.doi.org/10.1116/1.4882859>

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### Modulated IR radiometry for determining thermal properties and basic characteristics of titanium thin films

Mihai Apreutesei, Claudia Lopes, Joel Borges, Filipe Vaz and Francisco Macedo  
J. Vac. Sci. Technol. A **32**, 041511 (2014); <http://dx.doi.org/10.1116/1.4884351>

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### Double-sided reel-to-reel metal-organic chemical vapor deposition system of YBa<sub>2</sub>Cu<sub>3</sub>O<sub>7</sub>- $\delta$ thin films

Fei Zhang, Jie Xiong, Xin Liu, Ruipeng Zhao, Xiaohui Zhao, Bowen Tao and Yanrong Li  
J. Vac. Sci. Technol. A **32**, 041512 (2014); <http://dx.doi.org/10.1116/1.4884367>

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### In-situ spectroscopic ellipsometry study of copper selective-area atomic layer deposition on palladium

Xiaoqiang Jiang, Han Wang, Jie Qi and Brian G. Willis  
J. Vac. Sci. Technol. A **32**, 041513 (2014); <http://dx.doi.org/10.1116/1.4884535>

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### Systematic study of the growth and morphology of vapor deposited porous polymer membranes

Scott Seidel and Malancha Gupta  
J. Vac. Sci. Technol. A **32**, 041514 (2014); <http://dx.doi.org/10.1116/1.4884559>

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### Novel strategy for low-temperature, high-rate growth of dense, hard, and stress-free refractory ceramic thin films

Grzegorz Greczynski, Jun Lu, Stephan Bolz, Werner Kölker, Christoph Schifflers, Oliver Lemmer, Ivan Petrov, Joseph E. Greene and Lars Hultman  
J. Vac. Sci. Technol. A **32**, 041515 (2014); <http://dx.doi.org/10.1116/1.4884575>

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**Influence of dosing sequence and film thickness on structure and resistivity of Al-ZnO films grown by atomic layer deposition**

Evan B. Pollock and Robert J. Lad

J. Vac. Sci. Technol. A **32**, 041516 (2014); <http://dx.doi.org/10.1116/1.4885063>[+ VIEW DESCRIPTION](#)**Hysteresis-free high rate reactive sputtering of niobium oxide, tantalum oxide, and aluminum oxide**

Erik Särhammar, Sören Berg and Tomas Nyberg

J. Vac. Sci. Technol. A **32**, 041517 (2014); <http://dx.doi.org/10.1116/1.4885399>[+ VIEW DESCRIPTION](#)

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**VACUUM SCIENCE AND TECHNOLOGY****Mathematical model of a nanoporous thermoelectric based Knudsen pump**

Abderrazzak Faiz and Shamus McNamara

J. Vac. Sci. Technol. A **32**, 041601 (2014); <http://dx.doi.org/10.1116/1.4878595>[+ VIEW DESCRIPTION](#)**Comparison of precursor infiltration into polymer thin films via atomic layer deposition and sequential vapor infiltration using *in-situ* quartz crystal microgravimetry**

Richard P. Padbury and Jesse S. Jur

J. Vac. Sci. Technol. A **32**, 041602 (2014); <http://dx.doi.org/10.1116/1.4882654>[+ VIEW DESCRIPTION](#)**Effects of outgassing of loader chamber walls on hydriding of thin films for commercial applications**

James L. Provo

J. Vac. Sci. Technol. A **32**, 041603 (2014); <http://dx.doi.org/10.1116/1.4881982>[+ VIEW DESCRIPTION](#)

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**ERRATA****Erratum: “Effect of process parameters on properties of argon–nitrogen plasma for titanium nitride film deposition” [J. Vac. Sci. Technol. A **31**, 061307 (2013)]**

Partha Saikia and Bharat Kakati

J. Vac. Sci. Technol. A **32**, 043401 (2014); <http://dx.doi.org/10.1116/1.4884595>[+ VIEW DESCRIPTION](#)