

## Letters

FullMay 2018

### **Bound nuclear spin states of H<sub>2</sub> in an anisotropic potential induced by a stepped metal surface**

Elvis F. Arguelles, and Hideaki Kasai

Journal of Vacuum Science & Technology A **36**, 030601 (2018); <https://doi.org/10.1116/1.5023158>

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### **Ultrahigh vacuum dc magnetron sputter-deposition of epitaxial Pd(111)/Al<sub>2</sub>O<sub>3</sub>(0001) thin films**

Angel Aleman, Chao Li, Hicham Zaid, Hanna Kindlund more...

Journal of Vacuum Science & Technology A **36**, 030602 (2018); <https://doi.org/10.1116/1.5021609>

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### **Selective anisotropic etching of GaN over AlGaN for very thin films**

Joel C. Wong, Miroslav Micovic, David F. Brown, Isaac Khalaf more...

Journal of Vacuum Science & Technology A **36**, 030603 (2018); <https://doi.org/10.1116/1.5012530>

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### **Controlling the B/Ti ratio of TiB<sub>x</sub> thin films grown by high-power impulse magnetron sputtering**

Babak Bakhit, Ivan Petrov, J. E. Greene, Lars Hultman more...

Journal of Vacuum Science & Technology A **36**, 030604 (2018); <https://doi.org/10.1116/1.5026445>

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## Review Articles

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### **Review Article: Challenge in determining the crystal structure of epitaxial 0001 oriented $sp^2$ -BN films**

Mikhail Chubarov, Hans Högberg, Anne Henry, and Henrik Pedersen

Journal of Vacuum Science & Technology A **36**, 030801 (2018); <https://doi.org/10.1116/1.5024314>

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### **Review Article: Recommended practice for calibrating vacuum gauges of the ionization type**

James A. Fedchak, Patrick J. Abbott, Jay H. Hendricks, Paul C. Arnold more...

Journal of Vacuum Science & Technology A **36**, 030802 (2018); <https://doi.org/10.1116/1.5025060>

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## Interfaces

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### **Band alignment at the CdTe/InSb (001) heterointerface**

Xingye Wang, Calli Campbell, Yong-Hang Zhang, and Robert J. Nemanich

Journal of Vacuum Science & Technology A **36**, 031101 (2018); <https://doi.org/10.1116/1.5022799>

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## Photovoltaics and Energy

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## **Copper-induced recrystallization and interdiffusion of CdTe/ZnTe thin films**

Yegor Samoilenko, Ali Abbas, J. Michael Walls, and Colin A. Wolden

Journal of Vacuum Science & Technology A **36**, 031201 (2018); <https://doi.org/10.1116/1.5023501>

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## **Plasma Science and Technology**

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## **Etch considerations for directed self-assembly patterning using capacitively coupled plasma**

Vinayak Rastogi, Peter L. G. Ventzek, and Alok Ranjan

Journal of Vacuum Science & Technology A **36**, 031301 (2018); <https://doi.org/10.1116/1.5004648>

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## **Noninvasive electrical plasma monitoring method using reactor substrates as alternative current-sensing electrodes**

Ji-Hwan Park, and Chin-Wook Chung

Journal of Vacuum Science & Technology A **36**, 031302 (2018); <https://doi.org/10.1116/1.5017944>

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## **New insight into desorption step by Ar<sup>+</sup> ion-bombardment during the atomic layer etching of silicon**

Sonam D. Sherpa, Peter L. G. Ventzek, Myungsuk Lee, Gyeong S. Hwang more...

Journal of Vacuum Science & Technology A **36**, 031303 (2018); <https://doi.org/10.1116/1.5016530>

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## **Mass spectrometric method for estimating dissociation rates in hydrogen discharge plasmas**

A. Cotter, Alexander Stowell, John Carlson, and James R. Doyle

Journal of Vacuum Science & Technology A **36**, 031304 (2018); <https://doi.org/10.1116/1.5020723>

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## **Comparisons of NF<sub>3</sub> plasma-cleaned Y<sub>2</sub>O<sub>3</sub>, YOF, and YF<sub>3</sub> chamber coatings during silicon etching in Cl<sub>2</sub> plasmas**

Tianyu Ma, Tyler List, and Vincent M. Donnelly

Journal of Vacuum Science & Technology A **36**, 031305 (2018); <https://doi.org/10.1116/1.5026777>

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## **Native oxide removal from Ge surfaces by hydrogen plasma**

Yuanxia Zheng, Jason Lapano, G. Bruce Rayner Jr., and Roman Engel-Herbert

Journal of Vacuum Science & Technology A **36**, 031306 (2018); <https://doi.org/10.1116/1.5020966>

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## **Surfaces**

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## **Simple device for the growth of micrometer-sized monocrystalline single-layer graphene on SiC(0001)**

Jesús Redondo, Mykola Telychko, Pavel Procházka, Martin Konečný more...

Journal of Vacuum Science & Technology A **36**, 031401 (2018); <https://doi.org/10.1116/1.5008977>

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### **Deposition and characterization of nickel gallium thin films**

Shidong He, Andrew J. Pfau, John Trey Diulus, Gustavo H. Albuquerque more...

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### **Effects of the generated functional groups by PECVD on adhesiveness of adipose derived mesenchymal stem cells**

Sungyool Kwon, Wonjin Ban, Hyuna Lim, Youngsik Seo more...

Journal of Vacuum Science & Technology A **36**, 031403 (2018); <https://doi.org/10.1116/1.5020851>

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### **Role of defects in the etching of graphene by intercalated oxygen**

Tianbai Li, and Jory A. Yarmoff

Journal of Vacuum Science & Technology A **36**, 031404 (2018); <https://doi.org/10.1116/1.5025489>

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## **Thin Films**

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### **Plasma assisted low temperature electron beam deposited NiO thin films for electro-optic applications**

Mustafa Burak Cosar, Kerem Cagatay Icli, and Macit Ozenbas

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## **Atomic layer deposition of amorphous Ni-Ta-N films for Cu diffusion barrier**

Yong-Ping Wang, Zi-Jun Ding, Bao Zhu, Wen-Jun Liu [more...](#)

Journal of Vacuum Science & Technology A **36**, 031502 (2018); <https://doi.org/10.1116/1.5002727>

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## **Electronic structure of BaSnO<sub>3</sub> investigated by high-energy-resolution electron energy-loss spectroscopy and *ab initio* calculations**

Hwanhui Yun, Mehmet Topsakal, Abhinav Prakash, Koustav Ganguly [more...](#)

Journal of Vacuum Science & Technology A **36**, 031503 (2018); <https://doi.org/10.1116/1.5026298>

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## **Oxygen vacancy-passivated ZnO thin film formed by atomic layer deposition using H<sub>2</sub>O<sub>2</sub>**

Yue Wang, Kyung-Mun Kang, Minjae Kim, and Hyung-Ho Park

Journal of Vacuum Science & Technology A **36**, 031504 (2018); <https://doi.org/10.1116/1.5012022>

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## **Compositional, structural, and optical properties of atomic layer deposited tantalum oxide for optical fiber sensor overlays**

Kamil Kosiel, Karolina Pałowska, Maciej Kozubal, Marek Guzewicz [more...](#)

Journal of Vacuum Science & Technology A **36**, 031505 (2018); <https://doi.org/10.1116/1.5017725>

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**Influence of deposition conditions on the growth of micron-thick highly c-axis textured superconducting  $\text{GdBa}_2\text{Cu}_3\text{O}_{7-\delta}$  films on  $\text{SrTiO}_3$  (100)**

Jeffrey C. De Vero, Doopyo Lee, Hyeonseop Shin, Shielo B. Namuco more...

Journal of Vacuum Science & Technology A **36**, 031506 (2018); <https://doi.org/10.1116/1.5019393>

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**Surface morphology control of Nb thin films by biased target ion beam deposition**

Salinporn Kittiwatanakul, Nattawut Anuniwat, Nam Dao, Stuart A. Wolf more...

Journal of Vacuum Science & Technology A **36**, 031507 (2018); <https://doi.org/10.1116/1.5023723>

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**Optical characterization of pore filling in mesoporous multilayers by ultrathin atomic layer deposited hafnium dioxide**

Andras Kovacs, and Ulrich Mescheder

Journal of Vacuum Science & Technology A **36**, 031508 (2018); <https://doi.org/10.1116/1.5003355>

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**Atomic layer deposition of  $\text{PbTiO}_3$  and  $\text{PbZr}_x\text{Ti}_{1-x}\text{O}_3$  films using metal alkyl and alkylamide precursors**

Nick M. Sbrockey, Gary S. Tompa, Robert Lavelle, Kathleen A. Trumbull more...

Journal of Vacuum Science & Technology A **36**, 031509 (2018); <https://doi.org/10.1116/1.5014030>

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**Effect of synchronized bias in the deposition of TiB<sub>2</sub> thin films using high power impulse magnetron sputtering**

Nils Nedfors, Oleksiy Vozniy, and Johanna Rosen

Journal of Vacuum Science & Technology A **36**, 031510 (2018); <https://doi.org/10.1116/1.5003194>

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**Microstructure, mechanical, and tribological properties of niobium vanadium carbon nitride films**

Hongbo Ju, Dian Yu, Junhua Xu, Lihua Yu more...

Journal of Vacuum Science & Technology A **36**, 031511 (2018); <https://doi.org/10.1116/1.5020954>

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**Photoremediation of heavy metals from aqueous environments onto ZnO coated fibrous polyethylene terephthalate nonwovens**

Wade F. Ingram, Jonathan C. Halbur, Ankesh Madan, and Jesse S. Jur

Journal of Vacuum Science & Technology A **36**, 031512 (2018); <https://doi.org/10.1116/1.5016172>

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***In situ* infrared spectroscopy during La<sub>2</sub>O<sub>3</sub> atomic layer deposition using La(<sup>i</sup>PrCp)<sub>3</sub> and H<sub>2</sub>O**

Brent A. Sperlring, James E. Maslar, and Sergei V. Ivanov

Journal of Vacuum Science & Technology A **36**, 031513 (2018); <https://doi.org/10.1116/1.5026488>



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**Remote plasma atomic layer deposition of silicon nitride with bis(dimethylaminomethyl-silyl)trimethylsilyl amine and N<sub>2</sub> plasma for gate spacer**

Woochool Jang, Hyunjung Kim, Youngkyun Kweon, Chanwon Jung more...

Journal of Vacuum Science & Technology A **36**, 031514 (2018); <https://doi.org/10.1116/1.5024605>

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**Space-resolved plasma diagnostics in a hybrid (Cr,Al)N process**

Kirsten Bobzin, Tobias Brögelmann, Nathan C. Kruppe, and Martin Engels

Journal of Vacuum Science & Technology A **36**, 031515 (2018); <https://doi.org/10.1116/1.5020151>

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**Electrodeposition of metallic Cu from CuCl gas source transported into ionic liquid in a vacuum**

Yosuke Sato, Shingo Maruyama, and Yuji Matsumoto

Journal of Vacuum Science & Technology A **36**, 031516 (2018); <https://doi.org/10.1116/1.5019959>

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**Modeling and experimental demonstration of high-throughput flow-through spatial atomic layer deposition of Al<sub>2</sub>O<sub>3</sub> coatings on textiles at atmospheric pressure**

Moataz Bellah M. Mousa, Jennifer S. Ovental, Alexandra H. Brozena, Christopher J. Oldham more...

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### **Growth of yttrium iron garnet on SiO<sub>2</sub>**

Hadrian Renaldo O. Aquino, Sergei Rouvimov, Alexei Orlov, Wolfgang Porod more...

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### **Hydrogen annealing effects on local structures and oxidation states of atomic layer deposited SnO<sub>x</sub>**

Siliang Chang, Sriram Vijayan, Mark Aindow, Gregory Jursich more...

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## **Vacuum Science and Technology**

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### ***In situ* x-ray photoelectron emission analysis of the thermal stability of atomic layer deposited WO<sub>x</sub> as hole-selective contacts for Si solar cells**

Tian Zhang, Chang-Yeh Lee, Bin Gong, Sean Lim more...

Journal of Vacuum Science & Technology A **36**, 031601 (2018); <https://doi.org/10.1116/1.5020339>

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## **Simple plasma assisted atomic layer deposition technique for high substitutional nitrogen doping of TiO<sub>2</sub>**

Abdullah H. Alshehri, Nathan Nelson-Fitzpatrick, Khaled H. Ibrahim, Kissan Mistry more...

Journal of Vacuum Science & Technology A **36**, 031602 (2018); <https://doi.org/10.1116/1.5019170>

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## **Nonevaporable getter coating chambers for extreme high vacuum**

Marcy L. Stutzman, Philip A. Adderley, Md Abdullah A. Mamun, and Matt Poelker

Journal of Vacuum Science & Technology A **36**, 031603 (2018); <https://doi.org/10.1116/1.5010154>

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## **Quantitative measurements of various gases in high and ultrahigh vacuum**

Hajime Yoshida, and Kenta Arai

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## **Vapor-deposited octadecanethiol masking layer on copper to enable area selective Hf<sub>3</sub>N<sub>4</sub> atomic layer deposition on dielectrics studied by *in situ* spectroscopic ellipsometry**

Laurent Lecordier, Sebastiaan Herregods, and Silvia Armini

Journal of Vacuum Science & Technology A **36**, 031605 (2018); <https://doi.org/10.1116/1.5025688>

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## **Measurement and simulation of rarefied Couette Poiseuille flow with variable cross section**

Christopher Huck, Heiko Pleskun, and Andreas Brümmer

Journal of Vacuum Science & Technology A **36**, 031606 (2018); <https://doi.org/10.1116/1.5024899>

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## **Errata**

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### **Errata: “Influence of surface roughness on secondary electron emission from graphite” [J. Vac. Sci. Technol., A 35, 041404 (2017)]**

Thomas S. Burton, Tyson C. Back, Steven B. Fairchild, and Gregory B. Thompson

Journal of Vacuum Science & Technology A **36**, 033401 (2018); <https://doi.org/10.1116/1.5030547>

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## **Special Issue: AVS 64**

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### **Oxidant K edge x-ray emission spectroscopy of UF<sub>4</sub> and UO<sub>2</sub>**

J. G. Tobin, S.-W. Yu, R. Qiao, W. L. Yang more...

Journal of Vacuum Science & Technology A **36**, 03E101 (2018); <https://doi.org/10.1116/1.5016393>

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### **Low temperature growth of amorphous VO<sub>2</sub> films on flexible polyimide substrates with a TiO<sub>2</sub> buffer layer**

Dae Ho Jung, Hyeon Seob So, Jae Seong Ahn, Hosun Lee more...

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## **Modeling physical vapor deposition of energetic materials**

Koroush Shirvan, and Eric C. Forrest

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## **Application of linear least squares to the analysis of Auger electron spectroscopy depth profiles of plutonium oxides**

Scott B. Donald, Jeff A. Stanford, William McLean, and Art J. Nelson

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## **Gas modulation refractometry for high-precision assessment of pressure under non-temperature-stabilized conditions**

Isak Silander, Thomas Hausmaninger, Martin Zelan, and Ove Axner

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## **Large-aperture alumina ceramics beam pipes with titanium bellows for the rapid cycling synchrotron at Japan Proton Accelerator Research Complex**

Junichiro Kamiya, Michikazu Kinsho, Kazuhiko Abe, Kyusaku Higa more...

Journal of Vacuum Science & Technology A **36**, 03E106 (2018); <https://doi.org/10.1116/1.5023350>

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## **Epitaxial titanium nitride on sapphire: Effects of substrate temperature on microstructure and optical properties**

Hadley A. Smith, Said Elhamri, Kurt G. Eyink, Lawrence Grazulis more...

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## **Impact of plasma jet geometry on residence times of radical species**

James Lalor, Laurence Scally, Patrick J. Cullen, and Vladimir Milosavljević

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## **Modeling of silicon etching using Bosch process: Effects of oxygen addition on the plasma and surface properties**

Guillaume Le Dain, Ahmed Rhallabi, Christophe Cardinaud, Aurélie Girard more...

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