LETTERS

Selective atomic layer deposition of zirconia on copper patterned silicon substrates using ethanol as oxygen source as well as copper reductant
Sathees Kannan Selvaraj, Jaya Parulekar and Christos G. Takoudis
J. Vac. Sci. Technol. A **32**, 010601 (2014); http://dx.doi.org/10.1116/1.4826941

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REVIEW ARTICLES

***In situ* synchrotron based x-ray techniques as monitoring tools for atomic layer deposition**
Kilian Devloo-Casier, Karl F. Ludwig, Christophe Detavernier and Jolien Dendooven
J. Vac. Sci. Technol. A **32**, 010801 (2014); http://dx.doi.org/10.1116/1.4851716

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Reactor concepts for atomic layer deposition on agitated particles: A review
Delphine Longrie, Davy Deduytsche and Christophe Detavernier
J. Vac. Sci. Technol. A **32**, 010802 (2014); http://dx.doi.org/10.1116/1.4851676

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ATOMIC LAYER DEPOSITION (ALD)

Vacuum sealing using atomic layer deposition of Al_2O_3 at 250 °C
Seungdo An, Naveen K. Gupta and Yogesh B. Gianchandani
J. Vac. Sci. Technol. A **32**, 01A101 (2014); http://dx.doi.org/10.1116/1.4820240

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Adhesion testing of atomic layer deposited TiO_2 on glass substrate by the use of embedded SiO_2 microspheres
Jussi Lyytinen, Maria Berdova, Sami Franssila and Jari Koskinen
J. Vac. Sci. Technol. A **32**, 01A102 (2014); http://dx.doi.org/10.1116/1.4827197

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HfO_2 dielectric film growth directly on graphene by H_2O-based atomic layer deposition
Li Zheng, Xinhong Cheng, Duo Cao, Zhongjian Wang, Dawei Xu, Chao Xia, Lingyan Shen and Yuehui Yu
J. Vac. Sci. Technol. A **32**, 01A103 (2014); http://dx.doi.org/10.1116/1.4828361

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Kinetic study on hot-wire-assisted atomic layer deposition of nickel thin films
Guangjie Yuan, Hideharu Shimizu, Takeshi Momose and Yukihiro Shimogaki
J. Vac. Sci. Technol. A **32**, 01A104 (2014); http://dx.doi.org/10.1116/1.4829361

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Hybrid inorganic–organic superlattice structures with atomic layer deposition/molecular layer deposition
Tommi Tynell, Hisao Yamauchi and Maarit Karppinen
J. Vac. Sci. Technol. A **32**, 01A105 (2014); http://dx.doi.org/10.1116/1.4831751

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Role of plasma enhanced atomic layer deposition reactor wall conditions on radical and ion substrate fluxes
Mark J. Sowa
J. Vac. Sci. Technol. A **32**, 01A106 (2014); http://dx.doi.org/10.1116/1.4831896

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Capacitance and conductance versus voltage characterization of Al_2O_3 layers prepared by plasma enhanced atomic layer deposition at 25 °C≤ T ≤ 200 °C
Karsten Henkel, Hassan Gargouri, Bernd Gruska, Michael Arens, Massimo Tallarida andDieter Schmeißer
J. Vac. Sci. Technol. A **32**, 01A107 (2014); http://dx.doi.org/10.1116/1.4831897

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Low temperature hydrogen plasma-assisted atomic layer deposition of copper studied using *in situ* infrared reflection absorption spectroscopy
Rohan P. Chaukulkar, Nick F. W. Thissen, Vikrant R. Rai and Sumit Agarwal
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Growth mode evolution of hafnium oxide by atomic layer deposition
Xianglong Nie, Fei Ma, Dayan Ma and Kewei Xu
J. Vac. Sci. Technol. A **32**, 01A109 (2014); http://dx.doi.org/10.1116/1.4832224

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Numerical modeling of carrier gas flow in atomic layer deposition vacuum reactor: A comparative study of lattice Boltzmann models
Dongqing Pan, Tao Li, Tien Chien Jen and Chris Yuan
J. Vac. Sci. Technol. A **32**, 01A110 (2014); http://dx.doi.org/10.1116/1.4833561

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X-ray reflectivity characterization of atomic layer deposition Al_2O_3/TiO_2 nanolaminates with ultrathin bilayers
Sakari Sintonen, Saima Ali, Oili M. E. Ylivaara, Riikka L. Puurunen and Harri Lipsanen
J. Vac. Sci. Technol. A **32**, 01A111 (2014); http://dx.doi.org/10.1116/1.4833556

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Growth behavior and properties of atomic layer deposited tin oxide on silicon from novel tin(II)acetylacetonate precursor and ozone

Sathees Kannan Selvaraj, Alan Feinerman and Christos G. Takoudis
J. Vac. Sci. Technol. A **32**, 01A112 (2014); http://dx.doi.org/10.1116/1.4837915

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Atomic layer deposition of bismuth oxide using Bi(OCMe$_2$ ^{i}Pr)$_3$ and H_2O
Dustin Z. Austin, Derryl Allman, David Price, Sallie Hose, Mark Saly and John F. Conley Jr.
J. Vac. Sci. Technol. A **32**, 01A113 (2014); http://dx.doi.org/10.1116/1.4840835

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Waterless TiO_2 atomic layer deposition using titanium tetrachloride and titanium tetraisopropoxide
Virginia R. Anderson, Andrew S. Cavanagh, Aziz I. Abdulagatov, Zachary M. Gibbs andSteven M. George
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Vibration atomic layer deposition for conformal nanoparticle coating
Suk Won Park, Jun Woo Kim, Hyung Jong Choi and Joon Hyung Shim
J. Vac. Sci. Technol. A **32**, 01A115 (2014); http://dx.doi.org/10.1116/1.4845735

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On the reliability of nanoindentation hardness of Al_2O_3 films grown on Si-wafer by atomic layer deposition
Xuwen Liu, Eero Haimi, Simo-Pekka Hannula, Oili M. E. Ylivaara and Riikka L. Puurunen
J. Vac. Sci. Technol. A **32**, 01A116 (2014); http://dx.doi.org/10.1116/1.4842655

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Film properties of low temperature HfO_2 grown with H_2O, O_3, or remote O_2-plasma
Claudia Richter, Tony Schenk, Uwe Schroeder and Thomas Mikolajick
J. Vac. Sci. Technol. A **32**, 01A117 (2014); http://dx.doi.org/10.1116/1.4842675

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ATOMIC LAYER DEPOSITION (ALD)

Atomic layer deposition of $Hf_xAl_yC_z$ as a work function material in metal gate MOS devices

Albert Lee, Nobi Fuchigami, Divya Pisharoty, Zhendong Hong, Ed Haywood, Amol Joshi,Salil Mujumdar, Ashish Bodke, Olov Karlsson, Hoon Kim, Kisik Choi and Paul Besser

J. Vac. Sci. Technol. A **32**, 01A118 (2014); http://dx.doi.org/10.1116/1.4843535

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Atomic layer deposition of molybdenum oxide using bis(tert-butylimido)bis(dimethylamido) molybdenum

Adam Bertuch, Ganesh Sundaram, Mark Saly, Daniel Moser and Ravi Kanjolia

J. Vac. Sci. Technol. A **32**, 01A119 (2014); http://dx.doi.org/10.1116/1.4843595

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Rutile-structured TiO_2 deposited by plasma enhanced atomic layer deposition using tetrakis(dimethylamino)titanium precursor on *in-situ* oxidized Ru electrode

John Pointet, Patrice Gonon, Lawrence Latu-Romain, Ahmad Bsiesy and Christophe Vallée

J. Vac. Sci. Technol. A **32**, 01A120 (2014); http://dx.doi.org/10.1116/1.4843515

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***In situ* reaction mechanism studies on the $Ti(NMe_2)_2(O^iPr)_2$-D_2O and $Ti(O^iPr)_3[MeC(N^iPr)_2]$-$D_2O$ atomic layer deposition processes**

Yoann Tomczak, Kjell Knapas, Markku Leskelä and Mikko Ritala

J. Vac. Sci. Technol. A **32**, 01A121 (2014); http://dx.doi.org/10.1116/1.4843496

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Conduction processes in metal–insulator–metal diodes with Ta_2O_5 and Nb_2O_5insulators deposited by atomic layer deposition

Nasir Alimardani, John M. McGlone, John F. Wager and John F. Conley Jr.

J. Vac. Sci. Technol. A **32**, 01A122 (2014); http://dx.doi.org/10.1116/1.4843555

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Controllable nitrogen doping in as deposited TiO_2 film and its effect on post deposition annealing

Shaoren Deng, Sammy W. Verbruggen, Silvia Lenaerts, Johan A. Martens, Sven Van den Berghe, Kilian Devloo-Casier, Wouter Devulder, Jolien Dendooven, Davy Deduytsche andChristophe Detavernier

J. Vac. Sci. Technol. A **32**, 01A123 (2014); http://dx.doi.org/10.1116/1.4847976

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Surface modification of nitrogen-doped carbon nanotubes by ozone via atomic layer deposition

Andrew Lushington, Jian Liu, Yongji Tang, Ruying Li and Xueliang Sun

J. Vac. Sci. Technol. A **32**, 01A124 (2014); http://dx.doi.org/10.1116/1.4847995

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Structure in multilayer films of zinc sulfide and copper sulfide via atomic layer deposition

Andrew Short, Leila Jewell, Anthony Bielecki, Trevor Keiber, Frank Bridges, Sue Carter and Glenn Alers

J. Vac. Sci. Technol. A **32**, 01A125 (2014); http://dx.doi.org/10.1116/1.4847956

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Improvement in mechanical and barrier properties of polyethylene blown films using atomic layer deposition

Gyeong Beom Lee, Seung Hak Song, Sung Wook Moon, Jun Woo Kim, Joon Hyung Shim, Byoung-Ho Choi and Young Moo Heo

J. Vac. Sci. Technol. A **32**, 01A126 (2014); http://dx.doi.org/10.1116/1.4849075

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Properties of HfLaO MOS capacitor deposited on SOI with plasma enhanced atomic layer deposition

Wenyan Wan, Xinhong Cheng, Duo Cao, Li Zheng, Dawei Xu, Zhongjian Wang, Chao Xia, Lingyan Shen, Yuehui Yu and DaShen Shen

J. Vac. Sci. Technol. A **32**, 01A127 (2014); http://dx.doi.org/10.1116/1.4850175

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Deposition temperature dependence of material and Si surface passivation properties of O_3-based atomic layer deposited Al_2O_3-based films and stacks

Stefan Bordihn, Verena Mertens, Jörg W. Müller and W. M. M. (Erwin) Kessels

J. Vac. Sci. Technol. A **32**, 01A128 (2014); http://dx.doi.org/10.1116/1.4852855

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Co-Pt core-shell nanostructured catalyst prepared by selective chemical vapor pulse deposition of Pt on Co as a cathode in polymer electrolyte fuel cells

Sang-Joon Seo, Ho-Kyoon Chung, Ji-Beom Yoo, Heeyeop Chae, Seung-Woo Seo and Sung Min Cho

J. Vac. Sci. Technol. A **32**, 01A129 (2014); http://dx.doi.org/10.1116/1.4853135

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Atmospheric pressure spatial atomic layer deposition web coating with *in situ* monitoring of film thickness

Alexander S. Yersak, Yung C. Lee, Joseph A. Spencer and Markus D. Groner

J. Vac. Sci. Technol. A **32**, 01A130 (2014); http://dx.doi.org/10.1116/1.4850176

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Self-forming Al oxide barrier for nanoscale Cu interconnects created by hybrid atomic layer deposition of Cu–Al alloy

Jae-Hyung Park, Dong-Suk Han, You-Jin Kang, So-Ra Shin and Jong-Wan Park

J. Vac. Sci. Technol. A **32**, 01A131 (2014); http://dx.doi.org/10.1116/1.4845595

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Highly transparent low capacitance plasma enhanced atomic layer deposition Al_2O_3-HfO_2 tunnel junction engineering

Khalil El Hajjam, Nicolas Baboux, Francis Calmon, Abdelkader Souifi, Olivier Poncelet,Laurent A. Francis, Serge Ecoffey and Dominique Drouin

J. Vac. Sci. Technol. A **32**, 01A132 (2014); http://dx.doi.org/10.1116/1.4853075

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