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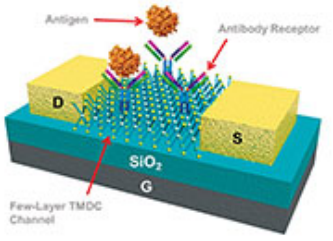

Fabrication and comparison of MoS_2 and WSe_2field-effect transistor biosensors

http://dx.doi.org/10.1116/1.4930040

LETTERS

S

Physical and electrical characteristics of hydrothermally synthesized nanocrystalline TiO_2 thin films

Chin-Lung Cheng, Jin-Tsong Jeng, Jung-Yen Yang, Tsung-Chieh Cheng andChi-Chung Liu
J. Vac. Sci. Technol. B **33**, 060601 (2015);
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Dependence of reverse bias leakage on depletion width and V-pit size in InGaN/GaN light-emitting diodes grown on silicon

Hyun Kum, Mihyun Kim, Dong-gun Lee, Youngjo Tak, Jongsun Maeng, Joosung Kim, Gilho Gu, Joong Jung Kim, Yongil Kim, Jun-Youn Kim and Youngsoo Park
J. Vac. Sci. Technol. B **33**, 060602 (2015);
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Ultrahigh vacuum deposition of higher manganese silicide Mn_4Si_7 thin films

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Flux dependent Sb-incorporation during molecular beam epitaxy of InAsSb

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Deep germanium etching using time multiplexed plasma etching

Maxime Darnon, Mathieu de Lafontaine, Maïté Volatier, Simon Fafard, Richard Arès, Abdelatif Jaouad and Vincent Aimez
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REVIEW ARTICLES

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Roll-to-roll UV imprinting lithography for micro/nanostructures

Peiyun Yi, Hao Wu, Chengpeng Zhang, Linfa Peng and Xinmin Lai
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http://dx.doi.org/10.1116/1.4933347

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TOP

ELECTRONIC & OPTOELECTRONIC MATERIALS, DEVICES & PROCESSING

S

Effect of GaN surface treatment on Al_2O_3/*n*-GaN MOS capacitors

Tashfin Hossain, Daming Wei, James H. Edgar, Nelson Y. Garces, Neeraj Nepal,Jennifer K. Hite, Michael A. Mastro, Charles R. Eddy Jr. and Harry M. Meyer III
J. Vac. Sci. Technol. B **33**, 061201 (2015);
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Investigation of traps in AlGaN/GaN high electron mobility transistors by sub-bandgap optical pumping

Tsung-Sheng Kang, Fan Ren, Brent P. Gila, Steve J. Pearton, Erin Patrick, David J. Cheney, Mark Law and Ming-Lan Zhang
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Deep level transient spectroscopy in III-Nitrides: Decreasing the effects of series resistance

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Comparison of acid- and non-acid-based surface preparations of Nb-doped $SrTiO_3$ (001)

Richard C. Hatch, Miri Choi, Agham B. Posadas and Alexander A. Demkov
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Modification of porous SiOCH by first contact with water vapor after plasma process

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Effect of excess Bi_2O_3 on structure and performance of ZnO-based thin film transistors

Wei Ye, Wei Ren, Zhao Wang, Peng Shi, Shuming Yang, Weixuan Jing andZhuangde Jiang
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Charge control in N-polar InAlN high-electron-mobility transistors grown by plasma-assisted molecular beam epitaxy

Matthew T. Hardy, David F. Storm, Brian P. Downey, D. Scott Katzer, David J. Meyer, Thomas O. McConkie and David J. Smith
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Fabrication of metal strip waveguides for optical and microwave data transmission

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Band offsets in $HfSiO_4$/IGZO heterojunctions

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Plasma-assisted oxide removal from p-type GaSb for low resistivity ohmic contacts

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Visible-light phototransistors based on InGaZnO and silver nanoparticles

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Etch residue removal of CoFeB using CO/NH_3 reactive ion beam for spin transfer torque-magnetic random access memory device

Min Hwan Jeon, Kyung Chae Yang, Jin Woo Park, Deok Hyun Yun, Kyong Nam Kim and Geun Young Yeom
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LITHOGRAPHY

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Highly selective removal of poly(methyl methacrylate) from polystyrene-*block*-poly(methyl methacrylate) by CO/H_2 plasma etching

Tsubasa Imamura, Hiroshi Yamamoto, Mitsuhiro Omura, Itsuko Sakai andHisataka Hayashi
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Electron beam lithography using a PMMA/P(MMA 8.5 MAA) bilayer for negative tone lift-off process

Andre-Pierre Blanchard-Dionne and Michel Meunier
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Effect of extreme ultraviolet photoresist underlayer optical properties on imaging performance

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MEMS & NEMS

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Sacrificial structures for deep reactive ion etching of high-aspect ratio kinoform silicon x-ray lenses

Frederik Stöhr, Jonas Michael-Lindhard, Jörg Hübner, Flemming Jensen, Hugh Simons, Anders Clemen Jakobsen, Henning Friis Poulsen and Ole Hansen
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Highly efficient initiation carrier injection for nonthermal atmospheric plasma generation

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MICROELECTRONIC & NANOELECTRONIC DEVICES

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Effects of conducting defects on resistive switching characteristics of SiN_x-based resistive random-access memory with MIS structure

Sungjun Kim, Seongjae Cho, Kyung-Chang Ryoo and Byung-Gook Park
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Concept for assembling individual nanostructure-based components into complex devices

Dmitry B. Suyatin, Richard Sundberg, Ivan Maximov, Sergey Shleev and Lars Montelius
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Integration of broken-gap heterojunction InAs/GaSb Esaki tunnel diodes on silicon

Kunal Bhatnagar, Manuel P. Caro, Juan S. Rojas-Ramirez, Ravi Droopad, Paul M. Thomas, Abhinav Gaur, Matthew J. Filmer and Sean L. Rommel
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ORGANIC ELECTRONICS AND OPTOELECTRONICS

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Quantum-dot light-emitting diodes with a double-layer structured hole injection layer

Sang Moo Lee, Nam-Kwang Cho and Seong Jun Kang
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EIPBN Invited Articles

S

Direct fabrication of high aspect-ratio metal oxide nanopatterns via sequential infiltration synthesis in lithographically defined SU-8 templates

Chang-Yong Nam, Aaron Stein and Kim Kisslinger
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Characterization of small microfluidic valves for studies of mechanical properties of bacteria

Da Yang, Clayton M. Greer, Branndon P. Jones, Anna D. Jennings, Scott T. Retterer and Jaan Männik
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Fabrication of pyramidal probes with various periodic patterns and a single nanopore

Seong Soo Choi, Myoung Jin Park, Chul Hee Han, Sae Joong Oh, Sang Hun Han, Nam Kyou Park, Yong-Sang Kim and Hyuck Choo
J. Vac. Sci. Technol. B **33**, 06F203 (2015);
http://dx.doi.org/10.1116/1.4935560

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Directed Self Assembly

S

Implementation of surface energy modification in graphoepitaxy directed self-assembly for hole multiplication

Jan Doise, Joost Bekaert, Boon Teik Chan, Roel Gronheid, Yi Cao, SungEun Hong, Guanyang Lin, Daniel Fishman, Yuli Chakk and Taisir Marzook
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Electrical yield verification of half-pitch 15 nm patterns using directed self-assembly of polystyrene-*block*-poly(methyl methacrylate)

Tsukasa Azuma, Yuriko Seino, Hironobu Sato, Yusuke Kasahara, Katsutoshi Kobayashi, Hitoshi Kubota, Hideki Kanai, Katsuyoshi Kodera, Naoko Kihara,Yoshiaki Kawamonzen, Satoshi Nomura, Ken Miyagi, Shinya Minegishi,Toshikatsu Tobana and Masayuki Shiraishi
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Simulation study on defect annihilation dynamics in directed self-assembly lithography

Katsuyoshi Kodera, Hideki Kanai, Hironobu Sato, Yuriko Seino, Katsutoshi Kobayashi, Yusuke Kasahara, Hitoshi Kubota, Naoko Kihara, Yoshiaki Kawamonzen, Shinya Minegishi, Ken Miyagi, Masayuki Shiraishi, Toshikatsu Tobana, Satoshi Nomura and Tsukasa Azuma
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High resolution nanofabrication using self-assembly of metal salt-polymer nanocomposite film

Celal Con, Ferhat Aydinoglu and Bo Cui
J. Vac. Sci. Technol. B **33**, 06F304 (2015);
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Nano- and Micro- Electromechanical systems

S

High performance lithium niobate surface acoustic wave transducers in the 4–12 GHz super high frequency range

Xiao Chen, Mohammad Ali Mohammad, James Conway, Bo Liu, Yi Yang and Tian-Ling Ren
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Beam Induced Deposition and Etching

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Enhancement of XeF_2-assisted gallium ion beam etching of silicon layer and endpoint detection from backside in circuit editing

Deying Xia, John Notte, Lewis Stern and Bernhard Goetze
J. Vac. Sci. Technol. B **33**, 06F501 (2015);
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Nanopore formation in TiN membranes by the focused electron beam of a transmission electron microscope

Hyun-Mi Kim, Seong-Yong Cho and Ki-Bum Kim
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http://dx.doi.org/10.1116/1.4935504

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Helium ion beam induced growth of hammerhead AFM probes

Gaurav Nanda, Emile van Veldhoven, Diederik Maas, Hamed Sadeghian and Paul F. A. Alkemade
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Nanoimprint Lithography

S

Flexible composite stamp for thermal nanoimprint lithography based on OrmoStamp

Marc Papenheim, Christian Steinberg, Khalid Dhima, Si Wang and Hella-Christin Scheer
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http://dx.doi.org/10.1116/1.4929885

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Method for high temperature nanoimprint of an organic semicrystalline polymer

Si Wang, Johannes Rond, Khalid Dhima, Christian Steinberg, Marc Papenheim,Hella-Christin Scheer and Jan-Christoph Gasse
J. Vac. Sci. Technol. B **33**, 06F602 (2015);
http://dx.doi.org/10.1116/1.4929882

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Thermal wrinkling of nanoimprinted SU-8 with masked UV-exposure

Christian Steinberg, Mhammed Belgouzi, Khalid Dhima, Marc Papenheim, Si Wang and Hella-Christin Scheer
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Stereolithography with variable resolutions using optical filter with high-contrast gratings

Yuanrui Li, Huachao Mao, He Liu, Yuhan Yao, Yifei Wang, Boxiang Song, Yong Chen and Wei Wu
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Nanophotonics

OA

Charging suppression in focused-ion beam fabrication of visible subwavelength dielectric grating reflector using electron conducting polymer

Mohd Sharizal Alias, Hsien-Yu Liao, Tien Khee Ng and Boon Siew Ooi
J. Vac. Sci. Technol. B **33**, 06F701 (2015);
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Nanobiotechnology

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Fabrication of free-standing casein devices with micro- and nanostructured regular and bioimprinted surface features

Azadeh Hashemi, Isha Mutreja, Maan M. Alkaisi, Volker Nock and Mohammad Azam Ali
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Advances in 3D neuronal cell culture

Jean-Philippe Frimat, Sijia Xie, Alex Bastiaens, Bart Schurink, Floor Wolbers,Jaap den Toonder and Regina Luttge
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Bosch etching for the creation of a 3D nanoelectroporation system for high throughput gene delivery

Paul Bertani, Wu Lu, Lingqian Chang, Daniel Gallego-Perez, Ly James Lee,Chiling Chiang and Natarajan Muthusamy
J. Vac. Sci. Technol. B **33**, 06F903 (2015);
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Carbon nanotube field effect transistor aptasensors for estrogen detection in liquids

Han Yue Zheng, Omar A. Alsager, Cameron S. Wood, Justin M. Hodgkiss and Natalie O. V. Plank
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Advanced Pattern Transfer

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Low DC-bias silicon nitride anisotropic etching

Yifei Wang, He Liu, Yuanrui Li and Wei Wu
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Directed ribbon-beam capability for novel etching applications

Simon Ruffell and Anthony Renau
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Topography-free sample for thermal spatial response measurement of scanning thermal microscopy

Yunfei Ge, Yuan Zhang, Jonathan M. R. Weaver, Haiping Zhou and Phillip S. Dobson
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Electron Beam Lithography

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Lossless layout image compression algorithms for electron-beam direct-write lithography

Narendra Chaudhary, Yao Luo, Serap A. Savari and Roger McCay
J. Vac. Sci. Technol. B **33**, 06FD01 (2015);
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Automated geometry assisted proximity effect correction for electron beam direct write nanolithography

Leonidas E. Ocola, David J. Gosztola, Daniel Rosenmann and Gerald Lopez
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Patterning of defect arrays with e-beam lithography used to develop a high throughput e-beam defect inspection tool

Kevin D. Cummings, Ben Bunday, Matt Malloy, John Hartley, Laila Banu, M. Mellish, Weilun Chao, A. R. Bleier and A. Banerjee
J. Vac. Sci. Technol. B **33**, 06FD03 (2015);
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Multilayer on-chip stacked Fresnel zone plates: Hard x-ray fabrication and soft x-ray simulations

Kenan Li, Michael J. Wojcik, Leonidas E. Ocola, Ralu Divan and Chris Jacobsen
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Fabricating a high-resolution mask with improved line-edge roughness by using a nonchemically amplified resist and a postexposure bake

Hidetatsu Miyoshi and Jun Taniguchi
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Enhanced adhesion of electron beam resist by grafted monolayer poly(methylmethacrylate-*co*-methacrylic acid) brush

Francesco Narda Viscomi, Ripon Kumar Dey, Roberto Caputo and Bo Cui
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Analytic estimation and minimization of line edge roughness in electron-beam lithography

Rui Guo, Soo-Young Lee, Jin Choi, Sung-Hoon Park, In-Kyun Shin and Chan-Uk Jeon
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http://dx.doi.org/10.1116/1.4936070

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Optical and Extreme UV (EUV) Lithography

S

Demonstration of 22-nm half pitch resolution on the SHARP EUV microscope

Markus P. Benk, Kenneth A. Goldberg, Antoine Wojdyla, Christopher N. Anderson, Farhad Salmassi, Patrick P. Naulleau and Michael Kocsis
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Variation in phase defect size on extreme ultraviolet mask before and after reflective multilayer coating

Tsuyoshi Amano and Tsukasa Abe
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Atomic Layer Deposition

S

ZnO functionalization of multiwalled carbon nanotubes for methane sensing at single parts per million concentration levels

Md Tanim Humayun, Ralu Divan, Liliana Stan, Ashu Gupta, Daniel Rosenmann,Lara Gundel, Paul A. Solomon and Igor Paprotny
J. Vac. Sci. Technol. B **33**, 06FF01 (2015);
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Nanoelectronics

S

Fabrication and comparison of MoS_2 and WSe_2 field-effect transistor biosensors

Hongsuk Nam, Bo-Ram Oh, Mikai Chen, Sungjin Wi, Da Li, Katsuo Kurabayashi and Xiaogan Liang
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Fabrication of nanodamascene metallic single electron transistors with atomic layer deposition of tunnel barrier

Golnaz Karbasian, Alexei O. Orlov and Gregory L. Snider
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Fabrication of artificial graphene in a GaAs quantum heterostructure

Diego Scarabelli, Sheng Wang, Aron Pinczuk, Shalom J. Wind, Yuliya Y. Kuznetsova, Loren N. Pfeiffer, Ken West, Geoff C. Gardner, Michael J. Manfra andVittorio Pellegrini
J. Vac. Sci. Technol. B **33**, 06FG03 (2015);
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Resists and Lithography Materials

S

Cross sections of photoacid generators at low electron energies

Steven Grzeskowiak, Amrit Narasimhan, Jonathan Ostrander, Jonathon Schad,William Earley, Robert L. Brainard, Greg Denbeaux, Leonidas E. Ocola and Mark Neisser
J. Vac. Sci. Technol. B **33**, 06FH01 (2015);
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Multiscale simulation of resist pattern shrinkage during scanning electron microscope observations

Masaaki Yasuda, Yuki Furukawa, Hiroaki Kawata and Yoshihiko Hirai
J. Vac. Sci. Technol. B **33**, 06FH02 (2015);
http://dx.doi.org/10.1116/1.4935956

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Charged Particle Optics and Sources

S

Low-energy scanning electron microscope using a monochromator with double-offset cylindrical lenses

Takashi Ogawa, Boklae Cho and Sang Jung Ahn
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Novel Imaging and Characterization Techniques

S

1.5 nm fabrication of test patterns for characterization of metrological systems

Sergey Babin, Giuseppe Calafiore, Christophe Peroz, Raymond Conley, Nathalie Bouet, Stefano Cabrini, Elaine Chan, Ian Lacey, Wayne R. McKinney, Valeriy V. Yashchuk and Andras E. Vladar
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Modeling of local dielectric charging induced by line scan during SEM observation

Zh. H. Cheng, H. Koyama, Y. Kimura, H. Shinada and O. Komuro
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http://dx.doi.org/10.1116/1.4936069

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Micro- and Nanofluidics

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Nanofluidic interfaces in microfluidic networks

Larry J. Millet, Mitchel J. Doktycz and Scott T. Retterer
J. Vac. Sci. Technol. B **33**, 06FM01 (2015);
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Characterization of extended channel bioreactors for continuous-flow protein production

Andrea C. Timm, Peter G. Shankles, Carmen M. Foster, Mitchel J. Doktycz andScott T. Retterer
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http://dx.doi.org/10.1116/1.4932155

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Fabrication of nanoporous membranes for tuning microbial interactions and biochemical reactions

Peter G. Shankles, Andrea C. Timm, Mitchel J. Doktycz and Scott T. Retterer
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High Throughput Electron Microscopy

S

Proposed architecture of a multicolumn electron-beam wafer inspection system for high-volume manufacturing

Dan Meisburger, James Spallas, Kurt Werder and Lawrence Muray
J. Vac. Sci. Technol. B **33**, 06FN01 (2015);
http://dx.doi.org/10.1116/1.4931589

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Simulation technique for pattern inspection using a projection electron microscope

Susumu Iida, Ryoichi Hirano, Tsuyoshi Amano and Hidehiro Watanabe
J. Vac. Sci. Technol. B **33**, 06FN02 (2015);
http://dx.doi.org/10.1116/1.4931932

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High-brightness miniature column for high-speed multicolumn wafer inspection

James Spallas, Dan Meisburger, Kurt Werder and Lawrence Muray
J. Vac. Sci. Technol. B **33**, 06FN03 (2015);
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