

FullMarch 2017

Engineering carrier lifetimes in type-II In(Ga)Sb/InAs mid-IR emitters

Lan Yu, Yujun Zhong, Sukrith Dev, and Daniel Wasserman

Journal of Vacuum Science & Technology B, Nanotechnology and Microelectronics: Materials, Processing, Measurement, and Phenomena **35**, 02B101 (2017); <http://doi.org/10.1116/1.4972978>

FullMarch 2017

Temperature monitoring of narrow bandgap semiconductors

Man Chun Tam, Yinqiu Shi, Denise Gosselink, Marc Jaikissoon, and Zbig R. Wasilewski

Journal of Vacuum Science & Technology B, Nanotechnology and Microelectronics: Materials, Processing, Measurement, and Phenomena **35**, 02B102 (2017); <http://doi.org/10.1116/1.4975926>

FullMarch 2017

Growth of InGaAsP solar cells and their application to triple-junction top cells used in smart stack multijunction solar cells

Takeyoshi Sugaya, Yuki Nagato, Yoshinobu Okano, Ryuji Oshima, Takeshi Tayagaki more...

Journal of Vacuum Science & Technology B, Nanotechnology and Microelectronics: Materials, Processing, Measurement, and Phenomena **35**, 02B103 (2017); <http://doi.org/10.1116/1.4975759>

FullMarch 2017

Control of unintentional oxygen incorporation in GaN

Stefan Schmult, Felix Schubert, Steffen Wirth, Andreas Großer, Terence Mittmann more...

Journal of Vacuum Science & Technology B, Nanotechnology and Microelectronics: Materials, Processing, Measurement, and Phenomena **35**, 02B104 (2017); <http://doi.org/10.1116/1.4975925>

FullMarch 2017

III-V semiconductor extended short-wave infrared detectors

Gregory R. Savich, Daniel E. Sidor, Xiaoyu Du, Gary W. Wicks, Mukul C. Debnath more...

Journal of Vacuum Science & Technology B, Nanotechnology and Microelectronics: Materials, Processing, Measurement, and Phenomena **35**, 02B105 (2017); <http://doi.org/10.1116/1.4975340>

FullMarch 2017

Transport properties of $\text{Bi}_2(\text{Se}_{1-x}\text{Te}_x)_3$ thin films grown by molecular beam epitaxy

Yong Wang, Theresa P. Ginley, Chiyu Zhang, and Stephanie Law

Journal of Vacuum Science & Technology B, Nanotechnology and Microelectronics: Materials, Processing, Measurement, and Phenomena **35**, 02B106 (2017); <http://doi.org/10.1116/1.4976622>

FullMarch 2017

On the study of antimony incorporation in InAs/InAsSb superlattices for infrared sensing

Heather J. Haugan, Gail J. Brown, and Joseph A. Peoples

Journal of Vacuum Science & Technology B, Nanotechnology and Microelectronics: Materials, Processing, Measurement, and Phenomena **35**, 02B107 (2017); <http://doi.org/10.1116/1.4977009>

FullMarch 2017

Controlling color emission of InGaN/AlGaN nanowire light-emitting diodes grown by molecular beam epitaxy

Moab R. Philip, Dipayan D. Choudhary, Mehrdad Djavid, Md Nasiruddin Bhuyian, James Piao more...

Journal of Vacuum Science & Technology B, Nanotechnology and Microelectronics: Materials, Processing, Measurement, and Phenomena **35**, 02B108 (2017); <http://doi.org/10.1116/1.4977174>

FullMarch 2017

Surface preparation of freestanding GaN substrates for homoepitaxial GaN growth by rf-plasma MBE

David F. Storm, Thomas O. McConkie, Matthew T. Hardy, D. Scott Katzer, Neeraj Nepal more...

Journal of Vacuum Science & Technology B, Nanotechnology and Microelectronics: Materials, Processing, Measurement, and Phenomena **35**, 02B109 (2017); <http://doi.org/10.1116/1.4977777>

FullMarch 2017

AlN/GaN/AlN resonant tunneling diodes grown by rf-plasma assisted molecular beam epitaxy on freestanding GaN

David F. Storm, Tyler A. Growden, Weidong Zhang, Elliott R. Brown, Neeraj Nepal more...

Journal of Vacuum Science & Technology B, Nanotechnology and Microelectronics: Materials, Processing, Measurement, and Phenomena **35**, 02B110 (2017); <http://doi.org/10.1116/1.4977779>

FullMarch 2017

Mid-IR resonant cavity detectors

Trevor A. O'Loughlin, Gregory R. Savich, Daniel E. Sidor, Brendan T. Marozas, Terry D. Golding more...

Journal of Vacuum Science & Technology B, Nanotechnology and Microelectronics: Materials, Processing, Measurement, and Phenomena **35**, 02B111 (2017); <http://doi.org/10.1116/1.4977780>

Papers from the 32nd North American Conference on Molecular Beam Epitaxy

FullMarch 2017

Threading dislocations in MBE grown AlInSb metamorphic buffers: Revealed and counted

Yinqiu Shi, Denise Gosselink, Vladimir Y. Umansky, Jan L. Weyher, and Zbig R. Wasilewski

Journal of Vacuum Science & Technology B, Nanotechnology and Microelectronics: Materials, Processing, Measurement, and Phenomena **35**, 02B112 (2017); <http://doi.org/10.1116/1.4978025>

High-resolution x-ray reflection Fourier analysis of metamorphic Si/SiGe quantum wells

Christopher J. K. Richardson, Clayton A. Jackson, Lisa F. Edge, and Peter W. Deelman

Journal of Vacuum Science & Technology B, Nanotechnology and Microelectronics: Materials, Processing, Measurement, and Phenomena **35**, 02B113 (2017); <http://doi.org/10.1116/1.4978595>

FullMarch 2017

***In situ* flashes of gallium technique for oxide-free epitaxial GaSb (100) surface**

Sen Mathews, Theodore Schuler-Sandy, Jong Su Kim, Clark Kadlec, Alireza Kazemi more...

Journal of Vacuum Science & Technology B, Nanotechnology and Microelectronics: Materials, Processing, Measurement, and Phenomena **35**, 02B114 (2017); <http://doi.org/10.1116/1.4978604>

FullMarch 2017

MBE growth and digital etch of GaSb/InAs nanowires on Si for logic applications

Katherine Dropiewski, Vadim Tokranov, Michael Yakimov, Serge Oktyabrsky, Steven Bentley more...

Journal of Vacuum Science & Technology B, Nanotechnology and Microelectronics: Materials, Processing, Measurement, and Phenomena **35**, 02B115 (2017); <http://doi.org/10.1116/1.4978782>

FullMarch 2017

Growth of ordered and disordered ZnSnN

Robert Allen Makin, Nancy Senabulya, James Mathis, N. Feldberg, P. Miska more...

Journal of Vacuum Science & Technology B, Nanotechnology and Microelectronics: Materials, Processing, Measurement, and Phenomena **35**, 02B116 (2017); <http://doi.org/10.1116/1.4978021>

FullMarch 2017

MBE growth techniques for InAs-based nBn IR detectors

Daniel E. Sidor, Gregory R. Savich, Brendan T. Marozas, Xiaoyu Du, Trevor A. O'Loughlin more...

Journal of Vacuum Science & Technology B, Nanotechnology and Microelectronics: Materials, Processing, Measurement, and Phenomena **35**, 02B117 (2017); <http://doi.org/10.1116/1.4978389>

OpenMarch 2017

2D/3D image charge for modeling field emission

Kevin L. Jensen, Donald A. Shiffler, John R. Harris, Ian M. Rittersdorf, and John J. Petillo

Journal of Vacuum Science & Technology B, Nanotechnology and Microelectronics: Materials, Processing, Measurement, and Phenomena **35**, 02C101 (2017); <http://doi.org/10.1116/1.4968007>

OpenMarch 2017

Delayed photo-emission model for beam optics codes

Kevin L. Jensen, John J. Petillo, Dimitrios N. Panagos, Serguei Ovtchinnikov, and Nathan A. Moody

Journal of Vacuum Science & Technology B, Nanotechnology and Microelectronics: Materials, Processing, Measurement, and Phenomena **35**, 02C102 (2017); <http://doi.org/10.1116/1.4968511>

FullMarch 2017

Extraction of the characteristics of current-limiting elements from field emission measurement data

Michael Bachmann, Florian Dams, Felix Düsberg, Martin Hofmann, Andreas Pahlke more...

Journal of Vacuum Science & Technology B, Nanotechnology and Microelectronics: Materials, Processing, Measurement, and Phenomena **35**, 02C103 (2017); <http://doi.org/10.1116/1.4971768>

FullMarch 2017

Modulation of the work function of graphene by Na and Cl coadsorbed on opposite sides on graphene

Guang Yuan, Xinxiang Song, and Hidenori Mimura

Journal of Vacuum Science & Technology B, Nanotechnology and Microelectronics: Materials, Processing, Measurement, and Phenomena **35**, 02C104 (2017); <http://doi.org/10.1116/1.4972772>

Papers from the 29th International Vacuum Nanoelectronics Conference

FullMarch 2017

Nonlinear Fowler-Nordheim behavior of a single SnO nanowire

Padmashree D. Joshi, Dilip S. Joag, Dattatray J. Late, and Imtiaz S. Mulla

Journal of Vacuum Science & Technology B, Nanotechnology and Microelectronics: Materials, Processing, Measurement, and Phenomena **35**, 02C105 (2017); <http://doi.org/10.1116/1.4973949>

FullMarch 2017

Bright and durable field-emission source derived from frozen refractory-metal Taylor cones

Gregory Hirsch

Journal of Vacuum Science & Technology B, Nanotechnology and Microelectronics: Materials, Processing, Measurement, and Phenomena **35**, 02C106 (2017); <http://doi.org/10.1116/1.4976536>

FullMarch 2017

***In situ* study of graphene crystallinity effect on field electron emission characteristics**

Shuai Tang, Yu Zhang, Ningsheng Xu, Runze Zhan, Li Gong more...

Journal of Vacuum Science & Technology B, Nanotechnology and Microelectronics: Materials, Processing, Measurement, and Phenomena **35**, 02C107 (2017); <http://doi.org/10.1116/1.4977546>

Papers from the 29th International Vacuum Nanoelectronics Conference

FullMarch 2017

Electrical properties of Cs Sb photocathode emitters in panel device applications

Hyo-Soo Jeong, Kris Keller, and Brad Culkin

Journal of Vacuum Science & Technology B, Nanotechnology and Microelectronics: Materials, Processing, Measurement, and Phenomena **35**, 02C108 (2017); <http://doi.org/10.1116/1.4977582>

FullMarch 2017

Electron extraction electrode for a high-performance electron beam from carbon nanotube cold cathodes

Jung Su Kang, and Kyu Chang Park

Journal of Vacuum Science & Technology B, Nanotechnology and Microelectronics: Materials, Processing, Measurement, and Phenomena **35**, 02C109 (2017); <http://doi.org/10.1116/1.4978045>

FullMarch 2017

Multiphoton photoemission of gold nanopillars fabricated by carbon nanotube templates

Mahta Monshipouri, Yaser Abdi, Sara Darbari, and Soichiro Tsujino

Journal of Vacuum Science & Technology B, Nanotechnology and Microelectronics: Materials, Processing, Measurement, and Phenomena **35**, 02C110 (2017); <http://doi.org/10.1116/1.4978655>

letter

FullMarch 2017

Structure compensation and illumination uniformity improvement through inkjet printing in organic light-emitting diode subpixels

Chin-Yen Lin, Li-Wen Wang, Kuan-Hsun Liao, and Cheng-Yao Lo

Journal of Vacuum Science & Technology B, Nanotechnology and Microelectronics: Materials, Processing, Measurement, and Phenomena **35**, 020601 (2017); <http://doi.org/10.1116/1.4974932>

FullMarch 2017

Formation of nickel germanides from Ni layers with thickness below 10 nm

Lukas Jablonka, Tomas Kubart, Daniel Primetzhofer, Ahmad Abedin, Per-Erik Hellström more...

Journal of Vacuum Science & Technology B, Nanotechnology and Microelectronics: Materials, Processing, Measurement, and Phenomena **35**, 020602 (2017); <http://doi.org/10.1116/1.4975152>

FullMarch 2017

Fabrication of radiation hardened SOI with embedded Si nanocrystal by ion-cut technique

Yongwei Chang, Shi Cheng, Lihua Dai, Da Chen, Zhongying Xue more...

Journal of Vacuum Science & Technology B, Nanotechnology and Microelectronics: Materials, Processing, Measurement, and Phenomena **35**, 020603 (2017); <http://doi.org/10.1116/1.4977577>

FullMarch 2017

Advanced single precursor based pSiCOH $k = 2.4$ for ULSI interconnects

Deepika Priyadarshini, Son V. Nguyen, Hosadurga Shobha, Eric Liniger, James H.-C. Chen more...

Journal of Vacuum Science & Technology B, Nanotechnology and Microelectronics: Materials, Processing, Measurement, and Phenomena **35**, 021201 (2017); <http://doi.org/10.1116/1.4974317>

FullMarch 2017

Reduction of persistent photoconduction in Ge-Ga-In-O semiconductors by the incorporation of nitrogen

Hyun-Mo Lee, Kyung-Chul Ok, Hyun-Jun Jeong, Jin-Seong Park, Junhyung Lim more...

Journal of Vacuum Science & Technology B, Nanotechnology and Microelectronics: Materials, Processing, Measurement, and Phenomena **35**, 021202 (2017); <http://doi.org/10.1116/1.4974925>

FullMarch 2017

Oxidation and oxidative vapor-phase etching of few-layer MoS

Timothy N. Walter, Frances Kwok, Hamed Simchi, Haila M. Aldosari, and Suzanne E. Mohney

Journal of Vacuum Science & Technology B, Nanotechnology and Microelectronics: Materials, Processing, Measurement, and Phenomena **35**, 021203 (2017); <http://doi.org/10.1116/1.4975144>

FullMarch 2017

Cryogenic etching of porous low-k dielectrics in CF Br and CF plasmas

Askar Rezvanov, Andrey V. Miakonkikh, Alexey S. Vishnevskiy, Konstantin V. Rudenko, and Mikhail R. Baklanov

Journal of Vacuum Science & Technology B, Nanotechnology and Microelectronics: Materials, Processing, Measurement, and Phenomena **35**, 021204 (2017); <http://doi.org/10.1116/1.4975646>

FullMarch 2017

Properties of pseudomorphic and relaxed germanium_{1-x}tin_xalloys (x < 0.185) grown by MBE

Ryan Hickey, Nalin Fernando, Stefan Zollner, John Hart, Ramsey Hazbun more...

Journal of Vacuum Science & Technology B, Nanotechnology and Microelectronics: Materials, Processing, Measurement, and Phenomena **35**, 021205 (2017); <http://doi.org/10.1116/1.4975149>

FullMarch 2017

Sub-10 nm plasma nanopatterning of InGaAs with nearly vertical and smooth sidewalls for advanced n-fin field effect transistors on silicon

Fares Chouchane, Bassem Salem, Guillaume Gay, Mickael Martin, Erwine Pargon more...

Journal of Vacuum Science & Technology B, Nanotechnology and Microelectronics: Materials, Processing, Measurement, and Phenomena **35**, 021206 (2017); <http://doi.org/10.1116/1.4975796>

FullMarch 2017

Electronic field effect tuning of the electronic properties of fluorinated epitaxial graphene

Kelly D. McAllister, Michael D. Williams, Sonam D. Sherpa, and Dennis W. Hess

Journal of Vacuum Science & Technology B, Nanotechnology and Microelectronics: Materials, Processing, Measurement, and Phenomena **35**, 021207 (2017); <http://doi.org/10.1116/1.4975801>

FullMarch 2017

Study of phosphorus doped Si:C films formed by *in situ* doped Si epitaxy and implantation process for n-type metal-oxide-semiconductor devices

FullMarch 2017

Study of phosphorus doped Si:C films formed by *in situ* doped Si epitaxy and implantation process for n-type metal-oxide-semiconductor devices

Shogo Mochizuki, Rainer Loesing, Yun-Yu Wang, and Hemanth Jagannathan

Journal of Vacuum Science & Technology B, Nanotechnology and Microelectronics: Materials, Processing, Measurement, and Phenomena **35**, 021208 (2017); <http://doi.org/10.1116/1.4975923>

FullMarch 2017

Assessment of nitrogen incorporation in dilute GaAsN films using isotopically enriched molecular beam epitaxy and resonant nuclear reaction analysis

John D. Demaree, Stefan P. Svensson, and Wendy L. Sarney

Journal of Vacuum Science & Technology B, Nanotechnology and Microelectronics: Materials, Processing, Measurement, and Phenomena **35**, 021209 (2017); <http://doi.org/10.1116/1.4977022>

FullMarch 2017

Investigation of thin InN/GaN heterostructures with *in situ* SiN dielectric grown by plasma-assisted molecular beam epitaxy

Christos Zervos, Adam Adikimenakis, Petros Beleniotis, Athanasios Kostopoulos, Maria Androulidaki

Journal of Vacuum Science & Technology B, Nanotechnology and Microelectronics: Materials, Processing, Measurement, and Phenomena **35**, 021210 (2017); <http://doi.org/10.1116/1.4977606>

Electronic & Optoelectronic Materials, Devices & Processing

FullMarch 2017

Pore surface grafting of porous low-k dielectrics by selective polymers

Askar Rezvanov, Liping Zhang, Mitsuhiro Watanabe, Mikhail B. Krishtab, Lin Zhang more...

Journal of Vacuum Science & Technology B, Nanotechnology and Microelectronics: Materials, Processing, Measurement, and Phenomena **35**, 021211 (2017); <http://doi.org/10.1116/1.4978046>

FullMarch 2017

Modification of Schottky barrier properties of Al/p-type Si Schottky rectifiers with graphene-oxide-doped poly(3,4-ethylenedioxythiophene):poly(styrene sulfonate) interlayer

Vallivedu Janardhanam, Inapagundla Jyothi, Shim-Hoon Yuk, Chel-Jong Choi, Hyung-Joong Yun more...

Journal of Vacuum Science & Technology B, Nanotechnology and Microelectronics: Materials, Processing, Measurement, and Phenomena **35**, 021212 (2017); <http://doi.org/10.1116/1.4978511>

FullMarch 2017

Influence of symmetry and duty cycles on the pattern generation in achromatic Talbot lithography

Shumin Yang, Jun Zhao, Liansheng Wang, Fangyuan Zhu, Chaofan Xue more...

Journal of Vacuum Science & Technology B, Nanotechnology and Microelectronics: Materials, Processing, Measurement, and Phenomena **35**, 021601 (2017); <http://doi.org/10.1116/1.4974930>

FullMarch 2017

Conformal reversal imprint lithography for polymer nanostructuring over large curved geometries

Mary Nora Dickson, Justin Tsao, Elena I. Liang, Noel I. Navarro, Yash R. Patel more...

Journal of Vacuum Science & Technology B, Nanotechnology and Microelectronics: Materials, Processing, Measurement, and Phenomena **35**, 021602 (2017); <http://doi.org/10.1116/1.4974927>

FullMarch 2017

Process development for high resolution hydrogen silsesquioxane patterning using a commercial scanner for extreme ultraviolet lithography

Vishal Desai, Mac Mellish, Stephen Bennett, and Nathaniel C. Cady

Journal of Vacuum Science & Technology B, Nanotechnology and Microelectronics: Materials, Processing, Measurement, and Phenomena **35**, 021603 (2017); <http://doi.org/10.1116/1.4975797>

FullMarch 2017

Fabrication of germanium nanodisk array by neutral beam etching with protein as etching mask

Takuya Fujii, Takeru Okada, Taiga Isoda, Mohd Erman Syazwan, Mohamed-Tahar Chentir more...

Journal of Vacuum Science & Technology B, Nanotechnology and Microelectronics: Materials, Processing, Measurement, and Phenomena **35**, 021801 (2017); <http://doi.org/10.1116/1.4976524>

FullMarch 2017

Gas-phase diagnostics during H and H O plasma treatment of SnO nanomaterials: Implications for surface modification

Erin P. Stuckert, Christopher J. Miller, and Ellen R. Fisher

Journal of Vacuum Science & Technology B, Nanotechnology and Microelectronics: Materials, Processing, Measurement, and Phenomena **35**, 021802 (2017); <http://doi.org/10.1116/1.4976534>

Nanometer Science & Technology

FullMarch 2017

Sub-100 nm integrated ferroelectric tunnel junction devices using hydrogen silsesquioxane planarization

Mohammad Abuwasib, Jung-Woo Lee, Hyungwoo Lee, Chang-Beom Eom, Alexei Gruverman more...

Journal of Vacuum Science & Technology B, Nanotechnology and Microelectronics: Materials, Processing, Measurement, and Phenomena **35**, 021803 (2017); <http://doi.org/10.1116/1.4978519>

FullMarch 2017

Top-down technique for scaling to nano in silicon MEMS

Mustafa Yilmaz, Yasin Kilinc, Gokhan Nadar, Zuhail Tasdemir, Nicole Wollschläger more...

Journal of Vacuum Science & Technology B, Nanotechnology and Microelectronics: Materials, Processing, Measurement, and Phenomena **35**, 022201 (2017); <http://doi.org/10.1116/1.4978047>

FullMarch 2017

Effect of growth conditions on interface stability and thermophysical properties of sputtered Cu films on Si with and without WTi barrier layers

Imane Souli, Velislava L. Terziyska, Jozef Keckes, Werner Robl, Johannes Zechner more...

Journal of Vacuum Science & Technology B, Nanotechnology and Microelectronics: Materials, Processing, Measurement, and Phenomena **35**, 022201 (2017); <http://doi.org/10.1116/1.4975805>

FullMarch 2017

Enhanced photocathode performance through optimization of film thickness and substrate

Anna Alexander, Nathan A. Moody, and Prabhakar R. Bandaru

Journal of Vacuum Science & Technology B, Nanotechnology and Microelectronics: Materials, Processing, Measurement, and Phenomena **35**, 022202 (2017); <http://doi.org/10.1116/1.4976527>

FullMarch 2017

Electrical and physical characteristics of metal–oxide–semiconductor structured nonvolatile memory with HfLa Ti O charge trapping layers

Jin-Tsong Jeng, Yan-Lin Li, and Chin-Lung Cheng

Journal of Vacuum Science & Technology B, Nanotechnology and Microelectronics: Materials, Processing, Measurement, and Phenomena **35**, 022203 (2017); <http://doi.org/10.1116/1.4978048>

FullMarch 2017

Fabrication of Mo microcones for volcano-structured double-gate Spindt-type emitter cathodes using triode high power pulsed magnetron sputtering

Takeo Nakano, Tomoki Narita, Kei Oya, Masayoshi Nagao, and Hisashi Ohsaki

Journal of Vacuum Science & Technology B, Nanotechnology and Microelectronics: Materials, Processing, Measurement, and Phenomena **35**, 022204 (2017); <http://doi.org/10.1116/1.4978506>

shop-note

FullMarch 2017

Economical rotatable holder for magnetotransport measurements

Avyaya J. Narasimham, Daniel Pennock, Graham J. Potter, Brian Taylor, and Vincent P. LaBella

Journal of Vacuum Science & Technology B, Nanotechnology and Microelectronics: Materials, Processing, Measurement, and Phenomena **35**, 023201 (2017); <http://doi.org/10.1116/1.4974488>