

FullJanuary 2017

Effects of interface states and near interface traps on the threshold voltage stability of GaN and SiC transistors employing SiO₂ as gate dielectric

Patrick Fiorenza, Giuseppe Greco, Filippo Giannazzo, Ferdinando Iucolano, and Fabrizio Roccaforte

Journal of Vacuum Science & Technology B, Nanotechnology and Microelectronics: Materials, Processing, Measurement, and Phenomena **35**, 01A101 (2017); <http://doi.org/10.1116/1.4967306>

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High-k/GaN interface engineering toward AlGaN/GaN MIS-HEMT with improved V_{th} stability

Nadine Szabó, Andre Wachowiak, Annett Winzer, Johannes Ocker, Jan Gärtner more...

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Impact of temperature on conduction mechanisms and switching parameters in HfO₂-based 1T-1R resistive random access memories devices

Eduardo Pérez, Christian Wenger, Alessandro Grossi, Cristian Zambelli, Piero Olivo more...

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Analysis and *in situ* observation of humidity dependent atomic layer deposited-Al₂O₃degradation

Andreas Ruckerl, Sophia Huppmann, Martin Mandl, Simeon Katz, and Roland Zeisel

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Effects of the extension of conductive filaments, a simulation approach

Marco A. Villena, Juan B. Roldán, Pedro García-Fernández, and Francisco Jiménez-Molinos

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Effect of illumination and electric field intensity on the efficiency improvement of amorphous silicon tandem solar cells

Andrea Scuto, Cosimo Gerardi, Anna Battaglia, and Salvatore Lombardo

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Low-temperature atomic layer deposition-grown Al₂O₃ gate dielectric for GaN/AlGaN/GaN MOS HEMTs: Impact of deposition conditions on interface state density

Milan Ľapajna, Lukáš Válik, Filip Gucmann, Dagmar Gregušová, Karol Fröhlich more...

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Function-fit model for the rate of conducting filament generation in constant voltage-stressed multilayer oxide stacks

A. Rodriguez-Fernandez, J. Suñé, E. Miranda, M. B. González, and F. Campabadal

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Mapping of CMOS FET degradation in bias space—Application to dram peripheral devices

B. Kaczer, J. Franco, S. Tyaginov, M. Jech, G. Rzepa more...

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In-depth study of the physics behind resistive switching in TiN/Ti/HfO₂/W structures

Gerardo González-Cordero, Francisco Jiménez-Molinos, Juan Bautista Roldán, Mireia Bargallo González, and Francesca Campabadal

Journal of Vacuum Science & Technology B, Nanotechnology and Microelectronics: Materials, Processing, Measurement, and Phenomena **35**, 01A110 (2017); <http://doi.org/10.1116/1.4973372>

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Reliability improvements of TiN/Al₂O₃/TiN for linear high voltage metal–insulator–metal capacitors using an optimized thermal treatment

Aude Lefevre, Delphine Ferreira, Marc Veillerot, Jean-Paul Barnes, Guy Parat more...

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Applications of clustering model to bimodal distributions for dielectric breakdown

Ernest Y. Wu, Ronald Bolam, Ronald Filippi, James H. Stathis, Baozhen Li more...

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Transmission microwave spectroscopy for local characterization of dielectric materials

Andrea Lucibello, Christopher Hardly Joseph, Emanuela Proietti, Giovanni Maria Sardi, Giovanni Capoccia more...

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Impact of low thermal processes on reliability of high-k/metal gate stacks

Artemisia Tsiara, Xavier Garros, Cao-Minh Vincent Lu, Claire Fenouillet-Béranger, and Gerard Ghibaudo

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Effect of oxide traps on channel transport characteristics in graphene field effect transistors

Marlene Bonmann, Andrei Vorobiev, Jan Stake, and Olof Engström

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Optimization of UV-assisted wet oxidation of GaAs

Filip Gučmann, Róbert Kúdela, Alica Rosová, Edmund Dobročka, Matej Mičušík more...

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Barrier tuning of atomic layer deposited Ta₂O₅ and Al₂O₃ in double dielectric diodes

Ibrahim Nemr Nouredine, Naser Sedghi, Ivona Z. Mitrovic, and Steve Hall

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Effects of annealing on top-gated MoS₂ transistors with HfO₂ dielectric

Peng Zhao, Angelica Azcatl, Pavel Bolshakov, Jiyoung Moon, Christopher L. Hinkle more...

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Letters

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Effects of various bias and temperature stresses on low-frequency noise properties of amorphous InGaZnO thin-film transistors

Hee-Joong Kim, Chan-Yong Jeong, Sang-Dae Bae, and Hyuck-In Kwon

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Soft nanoimprint mold with rigid relief features for improved pattern transfer

Liran Menahem, and Mark Schvartzman

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Influence of copper nanowires grown in a dielectric layer on the performance of dielectric barrier discharge

Zhao He, Zhihu Liang, Xiaoning Zhang, and Chunliang Liu

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Review Articles

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Review Article: Molecular beam epitaxy of lattice-matched InAlAs and InGaAs layers on InP (111)A, (111)B, and (110)

Christopher D. Yerino, Baolai Liang, Diana L. Huffaker, Paul J. Simmonds, and Minjoo Larry Lee

Journal of Vacuum Science & Technology B, Nanotechnology and Microelectronics: Materials, Processing, Measurement, and Phenomena **35**, 010801 (2017); <http://doi.org/10.1116/1.4972049>

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Electronic & Optoelectronic Materials, Devices & Processing

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Fabrication and optical behavior of graded-index, moth-eye antireflective structures in CdTe

Lesley Chan, Amitabh Ghoshal, Eric A. DeCuir Jr., Yuan Ping Chen, Daniel E. Morse more...

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Comparison of scanning laser annealing and microwave annealing for As⁺ implanted Si

Zhao Zhao, Joe Hilman, Manny Oropeza, Qiong Nian, and Terry L. Alford

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Electrical properties related to growth defects in metamorphic GaSb films on Si

Shun Sasaki, Katie Dropiewski, Shailesh Madiseti, Vadim Tokranov, Michael Yakimov more...

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Influence of SiH₄ and pressure on PECVD preparation of silicon films with subwavelength structures

William W. Hernández-Montero, Carlos Zúñiga-Islas, Adrián Itzmoyotl-Toxqui, Joel Molina-Reyes, and Laura E. Serrano-De la Rosa

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Passivation of InGaAs interface states by thin AlN interface layers for metal-insulator-semiconductor applications

Igor Krylov, Boaz Pokroy, Dan Ritter, and Moshe Eizenberg

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Effect of deposition conditions and composition on band offsets in atomic layer deposited $\text{Hf}_x\text{Si}_{1-x}\text{O}_y$ on InGaZnO_4

David C. Hays, Brent P. Gila, Stephen J. Pearton, Andres Trucco, Ryan Thorpe more...

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Current relaxation analysis in AlGaN/GaN high electron mobility transistors

Alexander Y. Polyakov, N. B. Smirnov, Ivan V. Shchemerov, In-Hwan Lee, Taehoon Jang more...

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Synthesis and characterization of Ga_2O_3 nanosheets on 3C-SiC-on-Si by low pressure chemical vapor deposition

Subrina Rafique, Lu Han, Jaesung Lee, Xu-Qian Zheng, Christian A. Zorman more...

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Effects of postdeposition annealing on TiO₂/GaN/AlGaN/GaN/Si metal-oxide-semiconductor high-electron mobility transistors

Yu-Shyan Lin, and Chi-Che Lu

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Lithography

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Transparent and visible light-insensitive acrylic photoresist for negative tone optical lithography

Daniel J. Carbaugh, Savas Kaya, and Faiz Rahman

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Effect of droplet size, droplet placement, and gas dissolution on throughput and defect rate in UV nanoimprint lithography

Akhilesh Jain, Andrew Spann, and Roger T. Bonnecaze

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Subdiffraction plasmonic lens lithography prototype in stepper mode

Minggang Liu, Chengwei Zhao, Yunfei Luo, Zeyu Zhao, Yanqin Wang more...

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Volume-expansion polymerization for UV-curable nanoimprinting

Bingqing Luo, Zengju Fan, Ziping Li, Yulong Chen, Yanqing Tian more...

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High resolution TEM analysis of focused ion beam amorphized regions in single crystal silicon—A complementary materials analysis of the teardrop method

Yariv Drezner, Yuval Greenzweig, Shida Tan, Richard H. Livengood, and Amir Raveh

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Enhanced field emission properties from carbon nanotube emitters on the nanopatterned substrate

Se Jung Kim, Seol Ah Park, Young-Cho Kim, and Byeong-Kwon Ju

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Lithography-free positioned GaAs nanowire growth with focused ion beam implantation of Ga

Hermann Detz, Martin Kriz, Suzanne Lancaster, Donald MacFarland, Markus Schinnerl more...

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Investigations on the long-term performance of gated p-type silicon tip arrays with reproducible and stable field emission behavior

Christian Prommesberger, Christoph Langer, Robert Ławrowski, and Rupert Schreiner

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Impact of oxygen plasma on nitrided and annealed atomic layer deposited SiO₂/high-k/metal gate for high-voltage input and output fin-shaped field effect transistor devices

Shahab Siddiqui, Min Dai, Rainer Loesing, Erdem Kaltalioglu, Rajan Pandey more...

Journal of Vacuum Science & Technology B, Nanotechnology and Microelectronics: Materials, Processing, Measurement, and Phenomena **35**, 012202 (2017); <http://doi.org/10.1116/1.4974250>
