

LETTERS

Comparison of defects in crystalline oxide semiconductor materials by electron spin resonance

Tokiyoshi Matsuda and Mutsumi Kimura

J. Vac. Sci. Technol. A **33**, 020601 (2015); <http://dx.doi.org/10.1116/1.4904400>

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In-situ nitrogen plasma passivation of Al₂O₃/GaN interface states

Junwoo Son, Varistha Chobpattana, Brian M. McSkimming and Susanne Stemmer

J. Vac. Sci. Technol. A **33**, 020602 (2015); <http://dx.doi.org/10.1116/1.4905846>

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Enhancement of Raman signals from low-k dielectrics with angle-resolved light scattering on nanostructure patterned Cu/low-k interconnects of IC devices

Maggie Y. M. Huang, Bo Liu, Pik Kee Tan, Jeffrey C. K. Lam and Zhihong Mai

J. Vac. Sci. Technol. A **33**, 020603 (2015); <http://dx.doi.org/10.1116/1.4905939>

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Organometallic exposure dependence on organic–inorganic hybrid material formation in polyethylene terephthalate and polyamide 6 polymer fibers

Halil I. Akyildiz and Jesse S. Jur

J. Vac. Sci. Technol. A **33**, 020604 (2015); <http://dx.doi.org/10.1116/1.4907563>

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Effects of chemical intermixing on electrical and thermal contact conductances at metallized bismuth and antimony telluride interfaces

Devender, Rutvik J. Mehta, Kelly Lofgreen, Ravi Mahajan, Masashi Yamaguchi, Theodorian Borca-Tasciuc and Ganpati Ramanath

J. Vac. Sci. Technol. A **33**, 020605 (2015); <http://dx.doi.org/10.1116/1.4906573>

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Molecular beam epitaxy growth of SnO₂ using a tin chemical precursor

Tianqi Wang, Abhinav Prakash, Ellis Warner, Wayne L. Gladfelter and Bharat Jalan

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REVIEW ARTICLES

Electromagnetic effects in high-frequency large-area capacitive discharges: A review

Yong-Xin Liu, Yu-Ru Zhang, Annemie Bogaerts and You-Nian Wang

J. Vac. Sci. Technol. A **33**, 020801 (2015); <http://dx.doi.org/10.1116/1.4907926>

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Overview of atomic layer etching in the semiconductor industry

Keren J. Kanarik, Thorsten Lill, Eric A. Hudson, Saravanapriyan Sriraman, Samantha Tan, Jeffrey Marks, Vahid Vahedi and Richard A. Gottscho

J. Vac. Sci. Technol. A **33**, 020802 (2015); <http://dx.doi.org/10.1116/1.4913379>

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INTERFACES**Plasmon-enhanced photocurrent of Ge-doped InGaO thin film transistors using silver nanoparticles**

Si Jin Park, Sang Moo Lee, Seong Jun Kang, Kwang-Ho Lee and Jin-Seong Park

J. Vac. Sci. Technol. A **33**, 021101 (2015); <http://dx.doi.org/10.1116/1.4907729>

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PHOTOVOLTAICS AND ENERGY***In situ* photoluminescence system for studying surface passivation in silicon heterojunction solar cells**

Sergey N. Abolmasov and Pere Roca i Cabarrocas

J. Vac. Sci. Technol. A **33**, 021201 (2015); <http://dx.doi.org/10.1116/1.4902014>

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TiO₂ nanotube arrays for photocatalysis: Effects of crystallinity, local order, and electronic structure

Jing Liu, Pegah M. Hosseinpour, Si Luo, Don Heiman, Latika Menon, Dario A. Arena and Laura H. Lewis

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Properties of reactively sputtered oxygenated cadmium sulfide (CdS:O) and their impact on CdTe solar cell performance

Daniel M. Meysing, Colin A. Wolden, Michelle M. Griffith, Hasitha Mahabaduge, Joel Pankow, Matthew O. Reese, James M. Burst, William L. Rance and Teresa M. Barnes

J. Vac. Sci. Technol. A **33**, 021203 (2015); <http://dx.doi.org/10.1116/1.4903214>

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Performance enhancement of GaN metal–semiconductor–metal ultraviolet photodetectors by insertion of ultrathin interfacial HfO₂ layer

Manoj Kumar, Burak Tekcan and Ali Kemal Okyay

J. Vac. Sci. Technol. A **33**, 021204 (2015); <http://dx.doi.org/10.1116/1.4905735>

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13.2% efficiency double-hetero structure single-junction InGaAsN solar cells grown by MOVPE

TaeWan Kim, Luke J. Mawst, Youngjo Kim, Kangho Kim, Jaejin Lee and Thomas F. Kuech

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In situ process monitoring during multistage coevaporation of Cu₂ZnSnS₄ thin films

Takahiro Mise, Shin Tajima, Tatsuo Fukano, Kazuo Higuchi and Hironori Katagiri

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Broadband low reflectance stepped-cone nanostructures by nanosphere lithography

Janghyuk Kim, Byung-Jae Kim, Jihyun Kim, Suyeon Lee and Q-Han Park

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PLASMA SCIENCE AND TECHNOLOGY

Surface cleaning for enhanced adhesion to packaging surfaces: Effect of oxygen and ammonia plasma

Sneha Gaddam, Haseeb Kazi, Bin Dong, Marcus Driver and Jeffrey Kelber

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Effect of helium pressure and flow rate on microplasma propagation along hollow-core fibers

Longfei Ji, Zhenhua Bi, Jinhai Niu, Xianhui Zhang, Renwu Zhou, Ying Song, Jiahong Liu and Dongping Liu

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Study on contact distortion during high aspect ratio contact SiO₂ etching

Jong Kyu Kim, Sung Ho Lee, Sung Il Cho and Geun Young Yeom

J. Vac. Sci. Technol. A **33**, 021303 (2015); <http://dx.doi.org/10.1116/1.4901872>

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Investigation of electrochemical etch differences in AlGaAs heterostructures using Cl₂ ion beam assisted etching

Kevin Anglin, William D. Goodhue, Reuel B. Swint and Jeanne Porter

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Optical emission spectroscopic studies and comparisons of CH₃F/CO₂ and CH₃F/O₂ inductively coupled plasmas

Qiaowei Lou, Sanbir Kaler, Vincent M. Donnelly and Demetre J. Economou

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Comparison of surface vacuum ultraviolet emissions with resonance level number densities. II. Rare-gas plasmas and Ar-molecular gas mixtures

John B. Boffard, Chun C. Lin, Shicong Wang, Amy E. Wendt, Cody Culver, Svetlana Radovanov and Harold Persing

J. Vac. Sci. Technol. A **33**, 021306 (2015); <http://dx.doi.org/10.1116/1.4904036>

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Formation of PtSi Schottky barrier MOSFETs using plasma etching

Young Min Woo, Wan Sik Hwang and Won Jong Yoo

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Viable chemical approach for patterning nanoscale magnetoresistive random access memory

Taeseung Kim, Younghee Kim, Jack Kun-Chieh Chen and Jane P. Chang

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Low damage etching method of low-k material with a neutral beam for interlayer dielectric of semiconductor device

Seung Hyun Kang, Jong Kyu Kim, Sung Ho Lee, Jin Woo Kim and Geun Young Yeom

J. Vac. Sci. Technol. A **33**, 021309 (2015); <http://dx.doi.org/10.1116/1.4905736>

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Modeling and experimental investigation of the plasma uniformity in CF₄/O₂ capacitively coupled plasmas, operating in single frequency and dual frequency regime

Yu-Ru Zhang, Stefan Tinck, Peter De Schepper, You-Nian Wang and Annemie Bogaerts

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Nitrogen mass transfer models for plasma-based low-energy ion implantation

Bocong Zheng, Kesheng Wang, Zhipeng Zhang, Honglong Che and Mingkai Lei

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Generation of a direct-current, atmospheric-pressure microplasma at the surface of a liquid water microjet for continuous plasma-liquid processing

Souvik Ghosh, Brittany Bishop, Ian Morrison, Rohan Akolkar, Daniel Scherson and R. Mohan Sankaran

J. Vac. Sci. Technol. A **33**, 021312 (2015); <http://dx.doi.org/10.1116/1.4907407>

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Molecular dynamic simulation of damage formation at Si vertical walls by grazing

incidence of energetic ions in gate etching processes

Kohei Mizotani, Michiro Isobe and Satoshi Hamaguchi

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SURFACES**Surface structure and surface kinetics of InN grown by plasma-assisted atomic layer epitaxy: A HREELS study**

Ananta R. Acharya, Brian D. Thoms, Neeraj Nepal and Charles R. Eddy Jr.

J. Vac. Sci. Technol. A **33**, 021401 (2015); <http://dx.doi.org/10.1116/1.4901873>[+ VIEW DESCRIPTION](#)**First-principles study of nitric oxide oxidation on Pt(111) versus Pt overlayer on 3d transition metals**

Ryan Lacdao Arevalo, Mary Clare Sison Escaño and Hideaki Kasai

J. Vac. Sci. Technol. A **33**, 021402 (2015); <http://dx.doi.org/10.1116/1.4903225>[+ VIEW DESCRIPTION](#)**Growth mechanism and optical properties of Ti thin films deposited onto fluorine-doped tin oxide glass substrate**

Motahareh Einollahzadeh-Samadi and Reza S. Dariani

J. Vac. Sci. Technol. A **33**, 021403 (2015); <http://dx.doi.org/10.1116/1.4904976>[+ VIEW DESCRIPTION](#)**Non-Arrhenius temperature dependence of the island density of one-dimensional Al chains on Si(100): A kinetic Monte Carlo study**

Jason R. Albia and Marvin A. Albao

J. Vac. Sci. Technol. A **33**, 021404 (2015); <http://dx.doi.org/10.1116/1.4905457>[+ VIEW DESCRIPTION](#)**Composition and work function relationship in Os–Ru–W ternary alloys**

Phillip D. Swartzentruber, Michael J. Detisch and T. John Balk

J. Vac. Sci. Technol. A **33**, 021405 (2015); <http://dx.doi.org/10.1116/1.4905499>[+ VIEW DESCRIPTION](#)**Real-time x-ray studies of indium island growth kinetics**

Alexander Demasi, Meliha G. Rainville and Karl F. Ludwig Jr.

J. Vac. Sci. Technol. A **33**, 021406 (2015); <http://dx.doi.org/10.1116/1.4905498>[+ VIEW DESCRIPTION](#)**Analysis of the surface density and reactivity of perfluorophenylazide and the impact on ligand immobilization**

Gilad Zorn, David G. Castner, Anuradha Tyagi, Xin Wang, Hui Wang and Mingdi Yan

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Anomalous structural evolution and $\sqrt{3} \times \sqrt{3}$ reconstruction of a clean Si(111) surface observed after thermal desorption of thallium

Pavel Kocán, Ondřej Krejčí and Hiroshi Tochihara

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THIN FILMS**Roll-to-roll sputtered Si-doped In₂O₃/Ag/Si-doped In₂O₃ multilayer as flexible and transparent anodes for flexible organic solar cells**

Da-Young Cho, Yong-Hee Shin, Han-Ki Kim, Yong-Jin Noh, Seok-In Na and Kwun-Bum Chung

J. Vac. Sci. Technol. A **33**, 021501 (2015); <http://dx.doi.org/10.1116/1.4901875>[+ VIEW DESCRIPTION](#)

AuCl₃ chemical doping on defective graphene layer

Sooyeoun Oh, Gwangseok Yang and Jihyun Kim

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Residual stress modeling of density modulated silicon thin films using finite element analysis

Erman Citirik, Taha Demirkan and Tansel Karabacak

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Stress engineering using low oxygen background pressures during Volmer–Weber growth of polycrystalline nickel films

Hang Z. Yu and Carl V. Thompson

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Influence of hydrogen impurities on p-type resistivity in Mg-doped GaN films

Jing Yang, Degang Zhao, Desheng Jiang, Ping Chen, Jianjun Zhu, Zongshun Liu, Lingcong Le, Xiaoguang He, Xiaojing Li, Y. T. Zhang and G. T. Du

J. Vac. Sci. Technol. A **33**, 021505 (2015); <http://dx.doi.org/10.1116/1.4904035>[+ VIEW DESCRIPTION](#)

Ultrathin polycrystalline 6,13-Bis(triisopropylsilylethynyl)-pentacene films

Min-Cherl Jung, Dongrong Zhang, Gueorgui O. Nikiforov, Michael V. Lee, Tae Joo Shin, Docheon Ahn, Han-Koo Lee, Jaeyoon Baik, Hyun-Joon Shin and Yabing Qi

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Electrical properties of ultrathin titanium dioxide films on silicon

Shankar Dutta, Leeladhar, Akhilesh Pandey, Om Prakash Thakur and Ramjay Pal

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Gallium codoping for high visible and near-infrared transmission in Al-doped ZnO thin films for industrial-scale applications

Ji Hun Park, Sang Ho Shin, Hyung Seok Yoon, Yongbae Jeon, Seunghun Lee, Yoongyu Lee and Sangwon Yoon

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Optical modeling of plasma-deposited ZnO films: Electron scattering at different length scales

Harm C. M. Knoop, Bas W. H. van de Loo, Sjoerd Smit, Mikhail V. Ponomarev, Jan-Willem Weber, Kashish Sharma, Wilhelmus M. M. Kessels and Mariadriana Creatore

J. Vac. Sci. Technol. A **33**, 021509 (2015); <http://dx.doi.org/10.1116/1.4905086>[+ VIEW DESCRIPTION](#)

Interdiffusion in nanometric Fe/Ni multilayer films

Jiaxing Liu and Katayun Barmak

J. Vac. Sci. Technol. A **33**, 021510 (2015); <http://dx.doi.org/10.1116/1.4905465>[+ VIEW DESCRIPTION](#)

On the physical and chemical details of alumina atomic layer deposition: A combined experimental and numerical approach

Dongqing Pan, Lulu Ma, Yuanyuan Xie, Tien Chien Jen and Chris Yuan

J. Vac. Sci. Technol. A **33**, 021511 (2015); <http://dx.doi.org/10.1116/1.4905726>[+ VIEW DESCRIPTION](#)

Highly (001) oriented L1₀-CoPt/TiN multilayer films on glass substrates with perpendicular magnetic anisotropy

Hongyu An, Qian Xie, Jian Wang, Takumi Sannomiya, Shinji Muraishi, Zhengjun Zhang, Yoshio Nakamura and Ji Shi

J. Vac. Sci. Technol. A **33**, 021512 (2015); <http://dx.doi.org/10.1116/1.4905847>[+ VIEW DESCRIPTION](#)

Continuous production of nanostructured particles using spatial atomic layer deposition

J. Ruud van Ommen, Dirkjan Kooijman, Mark de Niet, Mojgan Talebi and Aristeidis Goulas

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Method to control deposition rate instabilities—High power impulse magnetron

sputtering deposition of TiO₂

Anna Kossoy, Rögnvaldur L. Magnusson, Tryggvi K. Tryggvason, Kristjan Leosson and Sveinn Olafsson

J. Vac. Sci. Technol. A **33**, 021514 (2015); <http://dx.doi.org/10.1116/1.4905737>

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Parametric study of Y-doped BaZrO₃ thin film deposited via pulsed laser deposition

Ikwhang Chang, Jun Yeol Paek and Suk Won Cha

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Epitaxial niobium dioxide thin films by reactive-biased target ion beam deposition

Yuhan Wang, Ryan B. Comes, Salinporn Kittiwatanakul, Stuart A. Wolf and Jiwei Lu

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Atomic layer deposition of tin oxide and zinc tin oxide using tetraethyltin and ozone

Ellis J. Warner, Forrest Johnson, Stephen A. Campbell and Wayne L. Gladfelter

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Deposition of highly textured AlN thin films by reactive high power impulse magnetron sputtering

Milena A. Moreira, Tobias Törndahl, Ilia Katardjiev and Tomas Kubart

J. Vac. Sci. Technol. A **33**, 021518 (2015); <http://dx.doi.org/10.1116/1.4907874>

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Pore radius fine tuning of a silica matrix (MCM-41) based on the synthesis of alumina nanolayers with different thicknesses by atomic layer deposition

Elena G. Zemtsova, Andrei Yu. Arbenin, Alexander F. Plotnikov and Vladimir M. Smirnov

J. Vac. Sci. Technol. A **33**, 021519 (2015); <http://dx.doi.org/10.1116/1.4907989>

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Effects of high-temperature thermal annealing on the electronic properties of In-Ga-Zn oxide thin films

Qin Li, Zhong Xiao Song, Fei Ma, Yan Huai Li and Ke Wei Xu

J. Vac. Sci. Technol. A **33**, 021520 (2015); <http://dx.doi.org/10.1116/1.4908157>

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VACUUM SCIENCE AND TECHNOLOGY

Optimized MEMS Pirani sensor with increased pressure measurement sensitivity in the fine and rough vacuum regimes

Mario Grau, Friedemann Völklein, Andreas Meier, Christina Kunz, Ilia Kaufmann and Peter Woias

J. Vac. Sci. Technol. A **33**, 021601 (2015); <http://dx.doi.org/10.1116/1.4902340>

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Application of electron stimulated desorption techniques to measure the isotherm and the mean residence time of hydrogen physisorbed on a metal surface

Ichiro Arakawa, Hideyuki Shimizu, Taku Kawarabuki, Koichiro Yamakawa and Takashi Miura

J. Vac. Sci. Technol. A **33**, 021602 (2015); <http://dx.doi.org/10.1116/1.4904033>

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Outgassing rate measurements of stainless steel and polymers using the difference method

Katharina Battes, Christian Day and Volker Hauer

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Preparation of scanning tunneling microscopy tips using pulsed alternating current etching

Victor A. Valencia, Avesh A. Thaker, Jonathan Derouin, Damian N. Valencia, Rachael G. Farber, Dana A. Gebel and Daniel R. Killelea

J. Vac. Sci. Technol. A **33**, 023001 (2015); <http://dx.doi.org/10.1116/1.4904347>

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ERRATA

Retraction: "Electrical behavior of atomic layer deposited high quality SiO₂ gate dielectric" [J. Vac. Sci. Technol., A **33, 01A107 (2015)]**

S. K. Pradhan, E. K. Tanyi, J. R. Skuza, B. Xiao and A. K. Pradhan

J. Vac. Sci. Technol. A **33**, 023401 (2015); <http://dx.doi.org/10.1116/1.4905778>

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