

ПИ
E20/CS

VOL. 3, NO. 5, 2014

JSSS

ECS JOURNAL OF SOLID STATE
SCIENCE AND TECHNOLOGY



Table of Contents

Dielectric Science and Materials

Thermal Oxidation of Structured Silicon Dioxide

- Thomas Lehrmann Christiansen, Ole Hansen,
Jørgen Arendt Jensen, Erik Vilain Thomsen N63

**Fabrication Mechanism for Patterned Sapphire
Substrates by Wet Etching**

- Natsuko Aota, Hideo Aida, Yutaka Kimura,
Yuki Kawamata, Michio Uneda N69

**Kinetic Study of the Thermal Crystallization
Behavior of Hydrogenated Amorphous Silicon
Prepared by ECRCVD**

- I-Chen Chen, Pei-Yi Lin, Tomi T. Li, Jenq-Yang Chang N75

**Cyclic Plasma Treatment during ALD
Hf_{1-x}Zr_xO₂ Deposition**

- M. N. Bhuyian, D. Misra, K. Tapily, R. D. Clark,
S. Consiglio, C. S. Wajda, G. Nakamura, G. J. Leusink N83

Electronic Materials and Processing

**Atmospheric Spatial Atomic Layer Deposition
of In-Doped ZnO**

- A. Illiberi, R. Scherpenborg, F. Roozeboom, P. Poodt P111

**Temporary Wafer Bonding and Debonding
for 3D Integration Using an Electrochemically
Active Polymer Adhesive**

- Hithesh K. Gatty, Stephan Schröder, Frank Niklaus,
Niclas Roxhed, Göran Stemme P115

**Characterization of Ultra-Thin Ni Silicide Film
by Two-Step Low Temperature Microwave Anneal**

- Chien-Ting Wu, Yao-Jen Lee, Fu-Kuo Hsueh,
Po-Jung Sung, Ta-Chun Cho, Michael Ira Current,
Tien-Sheng Chao P122

**Modeling of Cu-CMP and Its Application
for Hotspot Prediction**

- Jingxun Fang, Zhibiao Mao, Yu Zhang, Sheng Ni,
Quan Chen, Shirui Yu, Tong Lei, Yefang Zhu, Huan Kan,
Zhengfang Liu, Yun Cao, Fang Wei, Jun Zhu P126

**Ambient Degradation of ZnO Powders:
Does Surface Polarity Matter?**

- Jiaqi Cheng, Kristin M. Poduska P133

**Translation of Particles to Wafers during
Spin Coating**

- C. W. Extrand, S. I. Moon, L. Monson,
Brian J. Pogainis P138

**Electrochemical Oxidation as Vertical
Structuring Tool for Ultrathin ($d < 10$ nm)
Valve Metal Films**

- Kevin Stella, Steffen Franzka, Damian Bürstel,
Detlef Diesing, Dirk Mayer, Vladimir Roddatis P143

**Phonon Dispersion in (100) Si Nanowire Covered
with SiO₂ Film Calculated by Molecular
Dynamics Simulation**

- Tomofumi Zushi, Kosuke Shimura,
Masanori Tomita, Kenji Ohmori,
Keisaku Yamada, Takanobu Watanabe P149

**Characterizations of Ga-Doped Cu_{1.75}Zn
(Sn_{1-x}Ga_x)Se₄ Bulks**

- Dong-Hau Kuo, Moges Tsega P155

**Characteristics of ALD-GZO Films
with Driven-in Zn and Zn/Mg Sources
for the Applications to Optoelectronic
Devices**

- Chi-Chen Huang, Chong-Long Ho, Shang-Fu Chen,
Yung-Fu Chang, Meng-Chyi Wu P159

**Surface Planarization of GaN-on-Sapphire
Template by Chemical Mechanical Polishing
for Subsequent GaN Homoeitaxy**

- Hideo Aida, Seong-woo Kim, Toshimasa Suzuki,
Koji Koyama, Natsuko Aota, Toshiro Doi,
Tsutomu Yamazaki P163

**Pad Scratching in Chemical-Mechanical
Polishing: The Effects of Mechanical
and Tribological Properties**

- Sanha Kim, Nannaji Saka, Jung-Hoon Chun P169

Electronic and Photonic Devices, and Systems

Degradation of Rhodamine B with Visible Light Response of $\text{Fe}_2\text{O}_3/\text{TiO}_2$ Film Electrode

Wenwei Tang, Lujun Wu, Xiaoying Chen,
Xinping Zeng Q69

Effect of Driving Frequency on Growth and Structure of Silicon Films Deposited by Radio-Frequency and Very-High-Frequency Magnetron Sputtering

Haijie He, Chao Ye, Xiangying Wang,
Fupei Huang, Yi Liu Q74

Chemical Vapor Deposition of Copper: Use of a Molecular Inhibitor to Afford Uniform Nanoislands or Smooth Films

Shaista Babar, Luke M. Davis, Pengyi Zhang,
Elham Mohimi, Gregory S. Girolami,
John R. Abelson Q79

 $\text{In}_{x}\text{Al}_{1-x}\text{N}/\text{AlN}/\text{GaN}$ High Electron Mobility Transistor Structures on 200 mm Diameter Si(111) Substrates with Au-Free Device Processing

S. Tripathy, L. M. Kyaw, S. B. Dolmanan, Y. J. Ngoo,
Y. Liu, M. K. Bera, S. P. Singh, H. R. Tan,
T. N. Bhat, E. F. Chor Q84

Oxidizing versus Reducing Co-Reactants in Manganese Atomic Layer Deposition (ALD) on Silicon Oxide Surfaces

Xiangdong Qin, Francisco Zaera Q89

Improvement of Negative Bias Temperature Illumination Stability of Amorphous IGZO Thin-Film Transistors by Water Vapor-Assisted High-Pressure Oxygen Annealing

Byung Du Ahn, Hyun-Suk Kim, Dong-Jin Yun,
Jin-Seong Park, Hyun Jae Kim Q95

Luminescence and Display Materials, Devices, and Processing

Luminescence Performance and Structural Characteristic of Eu^{2+} -Activated $\text{Na}_2\text{BaSi}_2\text{O}_6$ Phosphor

Zhengxu Tao, Yu Cheng, Yanlin Huang, Peiqing Cai,
Hyo Jin Seo R71

Influence of Al^{3+} Doping into the Zr^{4+} Site on the Photoluminescence Properties of $\text{Ca}_{3-x}\text{Eu}_x\text{ZrSi}_2\text{O}_{9+x/2}$ Phosphors

Yikang Zuo, Sun Woog Kim, Toshiyuki Masui,
Nobuhito Imanaka R79

Ultraviolet and Long-Lived Blue Luminescence of Oxidized Nano-Porous Silicon and Pure Nano-Porous Glass

B. Gelloz, R. Mentek, N. Koshida R83

Deep-UV-Driven Emission-Tailorable Borosilicate Glasses by Utilization of Sn^{2+} Cations as Versatile Energy-Transfer Establishers

Tianshuai Lv, Xuhui Xu, Dacheng Zhou, Jianbei Qiu R89