

Journal of ELECTRONIC MATERIALS

Volume 38, No. 6

CONTENTS

June 2009

PAGE SPECIAL SECTION: CARBON-BASED ELECTRONIC MATERIALS

| | |
|-----|--|
| 717 | Foreword <i>Mike Capano and Huili (Grace) Xing</i> |
| 718 | Temperature Dependence of Epitaxial Graphene Formation on SiC(0001) <i>Luxmi, Shu Nie, P.J. Fisher, R.M. Feenstra, Gong Gu, and Yugang Sun</i> |
| 725 | Thickness Estimation of Epitaxial Graphene on SiC Using Attenuation of Substrate Raman Intensity <i>Shriram Shivaraman, M.V.S. Chandrashekhar, John J. Boeckl, and Michael G. Spencer</i> |
| 731 | Growth of Graphene-Like Structures on an Oxidized SiC Surface <i>Weijie Lu, W.C. Mitchel, J.J. Boeckl, Tiffany R. Crenshaw, W.E. Collins, R.P.H. Chang, and L.C. Feldman</i> |
| 737 | Growth and Characterization of Carbon Nanopearls on a Si Substrate by CVD Process <i>S. Houston, G.J. Brown, T. Murray, S. Fairchild, K. Eyink, and A. Smetana</i> |
| 742 | A Study of Deterministic Positioning of Carbon Nanotubes by Dielectrophoresis <i>A. Arun, P. Salet, and A.M. Ionescu</i> |
| 750 | Field Emission and Electric Discharge of Nanocrystalline Diamond Films <i>Bohr-Ran Huang, Shyankay Jou, and Meng-Chang Wu</i> |

REGULAR ISSUE PAPERS

| | |
|-----|--|
| 756 | Geometrical Characteristics and Surface Polarity of Inclined Crystallographic Planes of the Wurtzite and Zincblende Structures <i>Hisashi Masui, Samantha C. Cruz, Shuji Nakamura, and Steven P. DenBaars</i> |
| 761 | Phosphor-Concentration-Dependent Characteristics of White LEDs in Different Current Regulation Modes <i>Jian Pyng You, Nguyen T. Tran, Yuan-Chang Lin, Yongzhi He, and Frank G. Shi</i> |
| 767 | Improved Gettering Efficiency of Ni from Nickel-Mediated Crystallization Silicon Using Phosphorus-Doped Amorphous Silicon <i>Bau-Ming Wang and Yewchung Sermon Wu</i> |
| 772 | Improved Ni Schottky Contacts on <i>n</i> -Type 4H-SiC Using Thermal Processing <i>T.N. Oder, T.L. Sung, M. Barlow, J.R. Williams, A.C. Ahyi, and T. Isaacs-Smith</i> |
| 778 | Aqueous-Develop, Photosensitive Polynorbornene Dielectric: Properties and Characterization <i>Venmathy Rajarathinam, C. Hunter Lightsey, Tyler Osborn, Brian Knapp, Edmund Elce, Sue Ann Bidstrup Allen, and Paul A. Kohl</i> |
| 787 | Growth and Characterization of Zn-Incorporated Copper Oxide Films <i>M. Engin, F. Atay, S. Kose, V. Bilgin, and I. Akyuz</i> |
| 797 | Impact of Ti Sputter Target Denitridation on the Crystallographic Orientation of Single Ti Layers and Ti/TiN/AlCu Layer Stacks on Different Oxides <i>D. Wolansky and P. Zaumseil</i> |
| 802 | Microstructure Evolution and the Constitutive Relations of High-Temperature Solders <i>Harry Schoeller, Shubhra Bansal, Aaron Knobloch, David Shaddock, and Junghyun Cho</i> |
| 810 | Nanotribological Characteristics of Cu ₆ Sn ₅ , Cu ₃ Sn, and Ni ₃ Sn ₄ Intermetallic Compounds <i>Ping-Feng Yang, Sheng-Rui Jian, Yi-Shao Lai, and Rong-Sheng Chen</i> |

- 815 An Assessment of Immersion Silver Surface Finish for Lead-Free Electronics
Weiqiang Wang, Anupam Choubey, Michael H. Azarian, and Michael Pecht
- 828 Viscosity and Surface Tension of Liquid Sn-Cu Lead-Free Solders
N. Zhao, X.M. Pan, D.Q. Yu, H.T. Ma, and L. Wang
- 834 Comparison of Insulated with Bare Au Bonding Wire: HAZ Length, HAZ Breaking Force, and FAB Deformability
Wan Ho Song, Chunjin Hang, Andrew Pequegnat, Michael Mayer, Norman Y. Zhou, Young-Kyu Song, and John Persic
- 843 Thermal Fatigue Endurance of Lead-Free Composite Solder Joints over a Temperature Range of -55°C to 150°C
Olli Nousiainen, Tero Kangasvieri, Risto Rautioaho, and Jouko Vähäkangas
- 852 Tensile and Fatigue Behaviors of Aged Cu/Sn-4Ag Solder Joints
Q.K. Zhang, H.F. Zou, and Z.F. Zhang
- 860 Effect of Stand-Off Height on Microstructure and Tensile Strength of the Cu/Sn₉Zn/Cu Solder Joint
Fengshun Wu, Bo Wang, Bin Du, Bing An, and Yiping Wu
- 866 Effect of Intermetallic on Electromigration and Atomic Diffusion in Cu/SnAg_{3.0}Cu_{0.5}/Cu Joints: Experimental and First-Principles Study
Wei Zhou, Lijuan Liu, Baoling Li, and Ping Wu
- 873 Interfacial Reactions of Si Die Attachment with Zn-Sn and Au-20Sn High Temperature Lead-Free Solders on Cu Substrates
Seongjun Kim, Keun-Soo Kim, Katsuaki Saganuma, and Goro Izuta
- 884 High-Speed Cyclic Bend Tests and Board-Level Drop Tests for Evaluating the Robustness of Solder Joints in Printed Circuit Board Assemblies
E.H. Wong, S.K.W. Seah, C.S. Selvanayagam, R. Rajoo, W.D. van Driel, J.F.J.M. Caers, X.J. Zhao, N. Owens, M. Leoni, L.C. Tan, Y.-S. Lai, and C.-L. Yeh
- 896 Microstructural Changes of the Ag-Epoxy ICA/Sn Interface in a High-Humidity Environment
Sun Sik Kim, Keun Soo Kim, Seong Jun Kim, and Katsuaki Saganuma
- 902 Evaluation of Electrochemical Migration on Flexible Printed Circuit Boards with Different Surface Finishes
Bo-In Noh, Jeong-Won Yoon, Won-Sik Hong, and Seung-Boo Jung
- 908 Intermetallic Compound Formation and Evolution in Solid-State Sn/Immersion-Ag/Cu Trilayer Interfacial Reactions on a Flexible Polymer Board
Chi-pu Lin and Chih-ming Chen