

TABLE OF CONTENTS

Preface	iii
Foreword to the proceedings of the “2 nd International Symposium on Science and Technology of Dielectrics in Emerging Fields”	iii
Foreword to the proceedings of the “Symposium on Persistent Phosphors”	v

Part I: Dielectrics in Emerging Technologies

Session I	Thin Film Devices	3
Amorphous Silicon Integration on Plastic for Flexible Displays	Denis Striakhilev, Arokia Nathan, Andrei Sazonov (University of Waterloo), Peyman Servati (Ignis Innovation Inc)	5
Session II	Electronic Devices	19
High Capacitance Density Ceramic Thin Films on Metal Foils for Embedded Capacitor Applications: A Review	Shyama P. Mukherjee, William J. Borland, Seigi Suh (DuPont Electronic Technologies)	21
A Low- κ Copper Diffusion Barrier for 45 nm and Beyond	Albert Lee, Naoyuki Iwasaki, Maggie Le, Li Qun Xia, Derek Witty, Hichem M'Saad (Applied Materials Inc.)	38
Ge MOS Devices with Thermally Evaporated HfO ₂ as Gate Dielectric	R. Garg, D. Misra (New Jersey Institute of Technology), P. K. Swain (Sarnoff Corporation)	46
ISSG-SiNgen ONO Stack for NROM Memory: Electrical and Chemical Characterization	M. Lisiansky, A. Heiman, G. Garteiz, E. Alon, A. Fenigstein, Y. Roizin (Tower Semiconductor), A. Gladkikh, M. Oksman (Wolfson), R. Edrei, A. Hoffman (Technion, Haifa), G. Xing, G. Cautiero (Applied Materials)	60

Microstructure and Electrical Properties of PZT(10/90)/PZT(90/10) Multilayered Thin Films by rf Magnetron Sputtering	Chia-Han Lai, Hsiao-Lan Lin, Su-Jien Lin (Tsing Hua University), Shou-Yi Chang (Chung Hsing Univ.)	80
Study of Nanometer Thick BST Material by Simulation for DRAM Application	Saaminathan Viswanathan, Sumitra Rajendran (Multimedia University)	90
Technology and Reliability Challenges of Sub-nm EOT High- κ / Metal Gate Electrode Transistors	J. J. Peterson, G. Bersuker, P. Lysaght, S. Krishnan, P. Majhi, Y. Senzaki, C. D. Young, R. Choi, J. Sim, J. Barnett, G. A. Brown, P. M. Zeitzoff, H.R. Huff (SEMATECH), P. Kirsch, N. Moumen, Byoung-Hun Lee, C. Ramiller (IBM), M. Quevedo-Lopez, C. Huffman (Texas Instruments), Hong-Jyh Li (Infineon), R. Harris, M. I. Gardner (AMD)	105
Session III Thin Film Photonics		119
Fibre-Coupled High-Index PECVD Silicon-Oxynitride Waveguides on Silicon	Maxim Fadel, Edgar Voges (University of Dortmund)	121
Luminescence Spectroscopy of Thin Oxide Films Grown by Atomic Layer Deposition	Marco Kirm, Jaan Aarik, Eduard Feldbach, Sven Lange, Hugo Mändar, Teet Uustare (University of Tartu)	133
Session IV Poster Session		149
Ferroelectric Properties and Microstructure of SBT Thin Films with Modified Ta Compositions	Fan-Yi Hsu, Chen-Ti Hu, (Tsing Hua University), Ching-Chich Leu, Chao-Hsin Chien (Nat. Nano Device Lab.)	151
Thickness Effect of BaPbO ₃ Buffer Layers on the Ferroelectric Properties of PZT Thin Films	Chun-Sheng Liang, Jenn-Ming Wu (Tsing Hua University)	162
Rare Earth Doped Nanoparticles in Organic and Inorganic Host Materials for Application in Integrated Optics	R. Dekker, L.T.H. Hilderink, M.B.J. Diemeer, K. Wörhoff, A. Driessen (University of Twente), J.W. Stouwdam, V. Sudarsan, F.C.J.M. van Veggel (University of Victoria)	174

Part II: Persistent Phosphors

Magneto-Optical Resonance Investigations on Eu- and Nd-/Dy-codoped CaAl_2O_4 and SrAl_2O_4 Single Crystals	S. Schweizer, B. Henke (University of Paderborn), U. Rogulis (University of Latvia), W. M. Yen (University of Georgia)	191
Red and Orange Persistent Phosphors Doped with Mn^{2+}	Zhiyi He, W.M. Yen (University of Georgia), Xiaojun Wang (CIOFM, Georgia Southern University)	199
Energy Transfer and Red Phosphorescence in Strontium Aluminates Doped with Cr^{3+} , Eu^{2+} and Dy^{3+}	Jiahua Zhang, Xia Zhang, Shaozhe Lu (Chin. Academy of Sci.) Xiaojun Wang (Georgia Southern University), Ruixia Zhong (Acad. of Sci., Beijing)	206
Improvement of the Performance of Long Persistent Phosphors	R. Withnall, A. Newport, J. Silver (Univ. of Greenwich)	216
TL, IRSL and Phototransferred TL in Beta-Irradiated SrAl_2O_4 : Eu^{2+} , Dy^{3+}	V. Chernov, R. Meléndrez, M. Barboza-Flores, Z. Agúndez-Arvizu (Universidad de Sonora), W. M. Yen (University of Georgia)	231
A New Blue Persistent Phosphor $\text{SrMgSi}_2\text{O}_6$: Eu^{2+} , Nd^{3+}	Weiyi Jia, Yi Jia, Ming Ye (Univ. of Puerto Rico), Dongdong Jia (Lock Haven University)	249
Fluorescence Decay of ZnS Phosphor as a Function of Excitation Conditions	J. E. Martin, L. Shea-Rohwer (Sandia National Laboratories)	263
Author Index		285
Subject Index		287