

TABLE OF CONTENTS

PREFACE	iii
---------	-----

Amorphous and Microcrystalline Silicon TFTs

Large TFT-LCD Manufacturing Technology* <i>C.-H. Oh, H.-C. Choi, and C. H. Hong</i>	1
a-Si:H TFT Circuit Integration on Glass and Plastic Substrates* <i>A. Nathan, P. Servati, K. S. Karim, D. Striakhilev, and A. Sazonov</i>	7
Effect of Mechanical and Electrical Stress on the Performance of an a-Si:H TFT on Plastic Substrate <i>S. H. Won, C. B. Lee, H. C. Nam, J. H. Hur, and J. Jang</i>	25
Gate Dielectrics for Thin Film Transistor of Nanocrystalline Silicon Deposited at 150°C <i>I-C. Cheng and S. Wagner</i>	33

Polycrystalline Silicon TFTs

A Novel Self-Aligned Ultra-Thin Elevated Channel Low Temperature CMOS Poly-Si TFT <i>Z. Xiong, H. Liu, C. Zhu, and J. K. O. Sin</i>	42
Development of Poly-Si CMOS TFT Using Counter Doping Process <i>J. Y. Yang, S. H. Yu, J. I. Kim, and M. S. Yang</i>	47
Polysilicon CMOS TFTs Inverters with a Gate Silicon Oxide Deposited using PECVD with Hexamethyldisiloxane (HMDSO) <i>G. Gautier, N. Coulon, C. E. Viana, S. Crand, R. Rogel, A. Goullet, N. I. Morimoto, and O. Bonnaud</i>	55
Location-Control of Large Grains by μ -Czochralski (Grain Filter) Process and Its Application to Single Crystalline Si Thin Film Transistors* <i>R. Ishihara, P. Ch. van der wilt, B. D. van Dijk, J. W. Metselaar and C. I. M. Beenakker</i>	63

*Invited Paper

Dynamic Characteristics of Single Grain Silicon TFTs <i>F. Yan, P. Migliorato, N. Bavidge, and R. Ishihara</i>	75
Microscopic beam profile and its relationship with the poly-Si film morphology grown laterally by a phase-modulated excimer-laser crystallization method <i>Y. Kimura, M. Jyumonji, M. Hiramatsu, M. Nishitani, and M. Matsumura</i>	82
High Performance Poly-Si TFTs on Non-Alkali Glass Produced Using Continuous Wave Laser Lateral Crystallization* <i>A. Hara, F. Takeuchi, M. Takei, K. Suga, K. Yoshino, M. Chida, Y. Sano, T. Kakehi, Y. Mishima, and N. Sasaki</i>	90
Device and Process Technology Requirements for Next-Generation, Ultra-High-Performance Poly-Si TFTs* <i>A. T. Voutsas</i>	109

Crystallization, Etching, Deposition, Hydrogenation, and Metallization

Polysilicon TFTs Made by Using Different Crystallization Techniques* <i>T. Mohammed-Brahim, O. Bonnaud, and Y. Helen</i>	119
Ni Silicide Mediated Crystallization of Amorphous Silicon Thin Film on Glass at 360°C <i>S. J. Park, K. H. Kim, W. S. Sohn, J. H. Choi, and J. Jang</i>	130
Low Temperature Polycrystalline Silicon Thin Film Transistors Fabricated by Electroless Plating Ni Induced Crystallization of Amorphous Si <i>C.-W. Chao, Y.C. Sermon Wu, Y.-C. Chen, G.-R. Hu, and M.-S. Feng</i>	137
The Effects of Oxygen Concentration in Ni Film on the Metal Induced Crystallization of a-Si:H <i>Y.-D. Lin, Y.C. Sermon Wu, C.-W. Chao, and G.-R. Hu</i>	140
Effect of Native Oxide Layer on Metal-Induced Crystallization of a-Si:H <i>M. Barghouti, H. Abu-Safe, H. Naseem, and W. D. Brown</i>	146
The Effects of Pd ₂ Si on the Electroless Plating Pd Induced Crystallization of Amorphous Silicon Thin Films <i>C. T. J. Huang, G.-R. Hu, Y.C. Sermon Wu, and C.-W. Chao</i>	155
High Quality TEOS Silicon Oxide Deposited at Low Temperature for TFT Gate Dielectric Application* <i>N. I. Morimoto, C. E. Viana, A. N. R. da Silva</i>	159

*Invited Paper

Low-Temperature-Proceeded Gate Insulator for Poly-Si TFTs by Combination of Photo-Oxidation and PECVD <i>Y. Nakata, T. Okamoto, M. Goto, and K. Azuma</i>	176
Electrical Properties of Room Temperature SiO ₂ Deposited by a Combination of Jet Vapor and Multipolar Electron Cyclotron Resonance Plasma <i>G. Isai, A. Kovalgin, J. Holleman, P. Woerlee, and H. Wallinga</i>	190
Effects of Plasma Treatments on the Characteristics of Poly-Si Thin-Film Transistors Having Electrical Junctions Induced by a Bottom Sub-Gate <i>C.-M. Yu, H.-C. Lin, T.-F. Lei, and T.-Y. Huang</i>	198
Schottky Barrier Poly-Si Thin-Film Transistors with Nano-scale Channel Width <i>H.-C. Lin, M.-H. Lee, K.-L. Yeh, F.-J. Hou, M.-F. Wang and T.-Y. Huang</i>	208
On Gas-Phase Depletion During LPCVD of GeSi Films using GeH ₄ /SiH ₄ and GeH ₄ /Si ₂ H ₆ Gas Sources <i>A. Kovalgin and J. Holleman</i>	216
Reactive Ion Etching and Via Opening in Low Permittivity Inter-level Dielectric Films for Pixelated TFT Arrays <i>R. Jeyakumar, K. S. Karim, S. Sivoththaman, and A. Nathan</i>	224
Characteristics of Schottky Barrier Poly-Si Thin-Film Transistors with Excimer Laser Annealing Treatment <i>K.-L. Yeh, H.-C. Lin, R.-W. Tsai, M.-H. Lee, and T.-Y. Huang</i>	231

Devices, Modeling, and Characterization

Simulation and Modeling of Nanocrystallization Silicon Thin Film Transistors* <i>B. Iñiguez, D. Dosev, J. Pallarès, L. F. Marsal, and T. Ytterdal</i>	238
Conduction and Low-Frequency Noise: Diagnostic Tools for Low-Temperature (<600°C) Polysilicon Thin Film Transistor Technology* <i>L. Pichon, A. Mercha, O. Bonnaud, and R. Carin</i>	246

New, Novel Applications and Materials

A Highly Stress-Resistant and High-Performance Poly-Si TFT for System-in Displays* <i>T. Shiba, M. Hatano, M. Matsumura, Y. Toyota, Y. Tai, M. Ohkura, T. Miyazawa, and T. Itoga</i>	257
--	-----

*Invited Paper

Amorphous Silicon Thin-Film Transistor for Active-Matrix Field Emission Display*	269
<i>Y.-H. Song</i>	
Polysilicon TFT Magnet Sensors*	276
<i>F. Le Bihan, E. Carvou, and O. Bonnaud</i>	
Pentacene-Based Field Effect Transistors*	288
<i>A. C. Mayer, M. L. Swiggers, C. J. Johnson, J. L. Mack, Z.-T. Zhu, R. L. Headrick, and G. Malliaras</i>	
Boron-doped a-Si:H Thin Film Deposition Process and Applications in p-channel Thin Film Transistor and Photodiode for He-Ne Laser Light Detection	292
<i>Y. Kuo, H. Nominanda, M. Ristova, H. H. Lee, and J.-Y. Tewg</i>	
AUTHOR INDEX	301
SUBJECT INDEX	304

*Invited Paper