

**7th Annual Non-Volatile Memory  
Technology Symposium**

**5-8 November 2006**

**San Mateo Marriott Hotel  
San Mateo, California**

# Table of Contents

<b>Visualization using the Scanning Nonlinear Dielectric Microscopy of Electrons and Holes Localized in the Thin Gate Film of Metal-Oxide-Nitride-Oxide-Semiconductor Type Flash Memory .....</b>	<b>1</b>
K. Honda and Y. Cho	
<b>1/f Noise Analysis of a 75 nm Twin-Flash™ Technology Non-Volatile Memory Cell.....</b>	<b>9</b>
G. Krause, K.R. Hofmann, M.F. Beug, T. Müller and T. Mikolajick	
<b>A New Self-Aligned NAND Type SONOS Flash Memory with High Scaling Abilities, Fast Programming/Erase Speeds and Good Data Retention Performances.....</b>	<b>13</b>
V.C.-W. Kuo, E.C.-S. Yang, W.-Z. Wong, C.-M. Chao, C.-K. Kang, L.-W. Liu, T.-B. Huang, L.-T. Kuo, S.-H. Chen, H.-C. Wei, H.-P. Hwang and S. Pittikoun	
<b>Eliminating Word Line Bending in Floating Gate NOR Flash Memory to Reduce Array Size and Improve Manufacturability.....</b>	<b>18</b>
S. Fang, K.-T. Chang, S.-C. Lee, J. Reiss, M. Takahashi, M. Plat, S. Ho, A. Rangarajan, W. Leung, M. Kwan, S.-H. Park, K. Ko, A. Joshi, H. Kinoshita, J. Wang, Y. Sun, K. Mizutani and H. Ogawa	
<b>EEPROM Compact Model with SILC Simulation Capability .....</b>	<b>23</b>
A. Regnier, J.M. Portal, H. Aziza, P. Masson, R. Bouchakour, C. Relliaud, D. Née and J.M. Mirabel	
<b>TCAD Modeling and Data of NOR Nanocrystal Memories .....</b>	<b>28</b>
S. Jacob, L. Perniola, P. Scheiblin, B. De Salvo, G. Lecarval, E. Jalaguier, G. Festes, R. Coppard, F. Boulanger and S. Deleonibus	
<b>Ferroelectric Ultra High-Density Data Storage Based on Scanning Nonlinear Dielectric Microscopy.....</b>	<b>31</b>
Y. Cho, S. Hashimoto, N. Odagawa, K. Tanaka and Y. Hiranaga	
<b>Reliability of Three-dimensional Ferroelectric Capacitor Memory-like Arrays Simultaneously Submitted to X-rays and Electrical Stresses .....</b>	<b>37</b>
Ch. Muller, L. Courtade, Ch. Turquat, L. Goux and D.J. Wouters	
<b>Magnetic Shadow RAM .....</b>	<b>42</b>
K.J. Hass, G.W. Donohoe, Y.-K. Hong, B.-C. Choi, K. DeGregorio and R. Hayhurst	
<b>Switching Properties in Spin Transfer Torque MRAM with Sub-50nm MTJ Size .....</b>	<b>46</b>
K.-T. Nam, S.C. Oh, J.E. Lee, J.H. Jeong, I.G. Baek, E.K. Yim, J.S. Zhao, S.O. Park, H.S. Kim, U.-I. Chung and J.T. Moon	
<b>Unique Challenges and Solutions in CMOS Compatible NVM .....</b>	<b>49</b>
J. Bu, W. Belcher, C. Parker and H. Prosack	
<b>Characterization of Silicided Polysilicon Fuse Implemented in 65nm Logic CMOS Technology.....</b>	<b>52</b>
J. Im, B. Ang, S. Tumakha and S. Paak	

<b>A Defect-Tolerant Architecture for Nanoelectronic Resistive Memories .....</b>	<b>55</b>
D.B. Strukov and K.K. Likharev	
<b>A 4-Mbit Non-volatile Chalcogenide-Random Access Memory Designed for Space Applications .....</b>	<b>61</b>
B. Li, A. Bumgarner, D. Pirkl, J. Stobie, W. Neiderer, M. Graziano, L. Burcin, T. Storey, B. Orlovsky, K.K. Hunt, J. Rodgers and J. Maimon	
<b>Integrated Analysis and Design of Phase-change Random Access Memory (PCRAM) Cells.....</b>	<b>68</b>
J.M. Li, L.P. Shi, H.X. Yang, K.G. Lim, X.S. Miao, H.K. Lee and T.C. Chong	
<b>Investigation of Nano-phase Change for Phase Change Random Access Memory.....</b>	<b>73</b>
L.P. Shi, T.C. Chong, X.Q. Wei, R. Zhao, W.J. Wang, H.X. Yang, H.K. Lee, J.M. Li, N.Y. Yeo, K.G. Lim, X.S. Miao and W.D. Song	
<b>Preparation of Oxygen-doped and Nitrogen-doped Ge-Sb-Te System Thin Film for Phase Change Random Access Memory by RF Magnetron Sputtering.....</b>	<b>78</b>
S. Kikuchi, D.Y. Oh, I. Kimura, Y. Nishioka, M. Ueda, M. Endo, Y. Kokaze and K. Suu	
<b>Snapback by Hot Filament.....</b>	<b>81</b>
J.-T. Yeh, F. Chen, D.-S. Chao, W.-H. Wang, Y.-C. Chen, C.-M. Lee, M.-J. Tsai and M.-J. Kao	
<b>Resistance Switching Characteristics of Metal Oxide and Schottky Junction for Nonvolatile Memory Applications.....</b>	<b>86</b>
D. Lee, W. Xiang, D. Sung, R. Dong, S. Oh, H. Choi and H. Hwang	
<b>Microstructure and Resistance Switching in NiO Binary Oxide Films Obtained from Ni Oxidation .....</b>	<b>91</b>
L. Courtade, Ch. Turquat, Ch. Muller, J.G. Lisoni, L. Goux, D.J. Wouters and D. Goguenheim	
<b>Resistance Switching Memory Effect in Transition Metal Oxide Thin Films .....</b>	<b>97</b>
A. Ignatiev, N.J. Wu, S.Q. Liu, X. Chen, Y.B. Nian, C. Papaginanni, J. Strozier and Z.W. Xing	
<b>A Low Power Non-volatile Memory Element Based on Copper in Deposited Silicon Oxide .....</b>	<b>101</b>
M. Balakrishnan, S.C.P. Thernmadam, M. Mitkova and M.N. Kozicki	
<b>Electrodeposit Formation in Solid Electrolytes .....</b>	<b>106</b>
M.N. Kozicki, C. Ratnakumar and M. Mitkova	
<b>On the Existence of Two Different Resistive Switching Mechanisms in Metal Organic Charge Transfer Complex Thin Films .....</b>	<b>113</b>
T. Kever, B. Klopstra, U. Böttger and R. Waser	
<b>Author Index .....</b>	<b>follows page 116</b>