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Nota di contenuto	CONTENTS; Preface; Chapter 1. Ultimate CMOS, Novel MOSFETS, and Alternative Transistors; Challenges and Progress in III-V MOSFETs for CMOS Circuits S. Oktyabrsky, M. Yakimov, V. Tokranov, R. Kambhampati, H. Bakhru, S. Koveshnikov, W. Tsai, F. Zhu and J. Lee; 1. Introduction; 2. MOSFET vs. HEMT; 3. Wish List for III-V CMOS; 4. Interface Passivation Technologies; 5. Amorphous Si Interface Passivation Layer; 6. Enhancement- Mode Inversion-Type MOSFET; 7. Conclusions; Acknowledgements; References Short Channel, Floating Body, and 3D Coupling Effects in Triple-Gate MOSFET K.-I. Na, J.-H. Lee S. Cristoloveanu, Y.-H. Bae, P. Patruno and W. Xiong1. Introduction; 2. Experiment; 3. Short Channel Effect; 4. Three Dimensional Coupling Effect; 5. Gate-Induced Floating Body Effect (GIFBE); 6. Conclusions; Acknowledgments; References; Analog and Digital Performance of the Screen-Grid Field Effect Transistor (SGrFET) K. Fobelets, P. W. Ding, Y. Shadrokh and J. E. Velazquez-Perez; 1. Introduction; 2. The simulated device structures; 3. Analog RF performance of the devices

4. Digital performance of the devices 5. Conclusions; Acknowledgments; References; Analytical Characterization and Modeling of Shielded Test Structures for RF-CMOS E. Torres-Rios, R. Torres-Torres, R. Murphy-Arteaga and E. A. Gutierrez-D.; 1. Introduction; 2. Description of fabricated test structures; 3. General models for RF shielded test structures; 3.1 General model for the shielded test structure with pad probe design at the second metal level; 3.2 General model for the shielded test structure with pad probe design at the third metal level; 4. Equivalent circuit modeling 4.1 Calculation of the model parameters 4.2 Analytical parameter extraction; 5. Results and discussion; 6. Conclusions ; 7. Acknowledgments; References; Germanium on Sapphire H. S. Gamble, P. T. Baine, H. Wadsworth, Y. H. Low, P. V. Rainey, F. H. Ruddell, B. M. Armstrong, D. W. McNeill and S. J. N. Mitchell; 1. Introduction; 2. Semiconductor properties and applications; 3. Sapphire properties and applications; 4. Germanium on Sapphire; 5. Passives and Parasitics; 6. Optical Detection; 7. Germanium ICs; 8. Summary and Conclusions; References

Single Event Effects in the Nano Era M. L. Alles, L. W. Massengill, R. D. Schrimpf, R. A. Weller and K. F. Galloway 1. Introduction; 2. Single Event Effects; 3. Differential Scaling; 4. Mitigation; 5. Analysis; 6. Opportunities; 7. Conclusions; Acknowledgments; References; An Efficient Numerical Method of DC Modeling for Power MOSFET, MESFET and AlGaIn/GaN HEMT T. Rahman, M. A. Huque and S. K. Islam; 1. Introduction; 2. Mathematical Theory; 3. Model Development and Verification Using Analytical Data; 3.1. MOSFET; 3.2. MESFET; 4. Model Development and Verification Using Experimental Data 5. Conclusion

Sommario/riassunto

Frontiers in Electronics contains the selected best papers presented at the Workshop on Frontiers in Electronics (WOFE-07). This meeting was the fifth in the series of WOFE workshops, and strongly reinforced the tradition of scientific quality and visionary research. The issues addressed ranged from THz and infrared electronics to nanoelectronics and photonics. The papers focused on the fabrication, characterization and applications of nanodevices; wide band gap structures; and state-of-the-art FETs. The participants also discussed the device physics and processing issues including asp
