

E-MRS 2012 Spring Meeting, Symposium M: More than Moore: Novel Materials Approaches for Functionalized Silicon Based Microelectronics

**IOP Conference Series: Materials Science and Engineering
Volume 41**

**Strasbourg, France
14 - 18 May 2012**

**ISBN: 978-1-63439-852-7
ISSN: 1757-8981**

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

Copyright© by the Institute of Physics
All rights reserved.

Printed by Curran Associates, Inc. (2015)

For permission requests, please contact the Institute of Physics
at the address below.

Institute of Physics
Dirac House, Temple Back
Bristol BS1 6BE UK

Phone: 44 1 17 929 7481
Fax: 44 1 17 920 0979

techtracking@iop.org

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2634
Email: curran@proceedings.com
Web: www.proceedings.com

Table of contents

Volume 41

E-MRS 2012 Spring Meeting, Symposium M: More than Moore: Novel materials approaches for functionalized Silicon based Microelectronics
14–18 May 2012, Strasbourg, France

Accepted papers received: 12 September 2012
Published online: 6 December 2012

011001

[E-MRS 2012 Spring Meeting, Symposium M: More than Moore: Novel materials approaches for functionalized Silicon based Microelectronics](#) Christian Wenger, Jean Fompeyrine, Christophe Vallée and Jean-Pierre Locquet

Papers

012001

[A new concept for spatially divided Deep Reactive Ion Etching with ALD-based passivation](#) F Roozeboom, B Kniknie, A M Lankhorst, G Winands, R Knaapen, M Smets, P Poodt, G Dingemans, W Keuning and W M M Kessels pg. 1

012002

[Ge technology beyond Si CMOS](#) A Chin pg. 8

012003

[GaAs clean up studied with synchrotron radiation photoemission](#) M Tallarida, C Adelman, A Delabie, S van Elshocht, M Caymax and D Schmeisser pg. 14

012004

[The effect of composition on the bandgap width in insulating \$Nb_xTa_yO_z\$ nanolayers](#) W C Wang, H Y Chou, M Badylevich¹, T Blomberg, Ch Wenger, J A Kittl and V V Afanas'ev pg. 22

012005

[Sacrificial ion beam etching process for seed layer removal of 6 \$\mu\$ m pitch CuSn micro bumps](#) J Hess and H Vogt pg. 26

012006

[Atomic Layer Deposition of SiN for spacer applications in high-end logic devices](#) F Koehler, D H Triyoso, I Hussain, S Mutas and H Bernhardt pg. 33

012007

[Oxidation of Germanium and Silicon surfaces \(100\): a comparative study through DFT methodology](#) C Mastail, I Bourennane, A Estève, G Landa, M Djafari Rouhani, N Richard and A Hémercyk pg. 37

012008

[Electron Trap Energy Distribution in ALD \$Al_2O_3\$, \$LaAl_4O_x\$, and \$Gd_yAl_{2-y}O_3\$ Layers on Silicon](#) W C Wang, M Badylevich, C Adelman, J Swerts, J A Kittl and V V Afanas'ev pg. 47

012009

[Gigahertz monolithic delay lines for surface acoustic waves on Silicon](#) P V Santos, S Rauwerdink, K Biermann, B Drescher, W Seidel, M Kaynak, U Kaletta, M Fraschke, D Wolansky and Ch Wenger pg. 51

012010

[Influence of the Surface Pretreatment on the Electrical Properties of \$MgO\$ and \$Al_2O_3\$ Gate Stacks grown by MBE](#) C-Y Su, M Menghini, T Smets, L Dillemans, R Lieten and J P Locquet pg. 57

012011

[Semiconducting YBaCuO films grown on silicon substrates: IR room temperature sensing and fast pyroelectric response](#) A J Kreisler, V S Jagtap, G Sou, G Klisnick and A F Dégardin pg. 61

012012

[Epitaxial PZT thin films on YSZ-buffered Si \(001\) substrates for piezoelectric MEMS or NEMS applications](#) C Jorel, H Colder, A Galdi and L Méchin pg. 65

012013

[Broadband dielectric and IR pyroelectric response of amorphous Y-Ba-Cu-O oxygen depleted thin films](#) A Gensbittel, A F Dégardin, O Dubrunfaut, M K Kulsreshath, V S Jagtap and A J Kreisler pg. 69

012014

[Synthesis and characterization of highly c-textured \$\text{Al}_{\(1-x\)}\text{Sc}_{\(x\)}\text{N}\$ thin films in view of telecom applications](#) M A Moreira, J Bjurström, V Yantchev and I Katardjiev pg. 73

012015

[Metal-Insulator-Metal capacitors with ALD grown \$\text{SrTiO}_3\$: Influence of Pt electrodes](#) M Lukosius, T Blomberg, D Walczyk, G Ruhl and Ch Wenger pg. 77

012016

[Fuzzy-logic-based approach to study the electrons mobility in nanoscale Double Gate MOSFETs](#) T Bendib, F Djeflal, D Arar, Z Dibi and A Ferdi pg. 84

012017

[Multilevel current stress technique for investigation thin oxide layers of MOS structures](#) V V Andreev, G G Bondarenko, V M Maslovsky and A A Stolyarov pg. 92

012018

[Resistive switching of Ti/HfO₂-based memory devices: impact of the atmosphere and the oxygen partial pressure](#) T Bertaud, M Sowinska, D Walczyk, Ch Walczyk, S Kubotsch, Ch Wenger and T Schroeder pg. 101

012019

[Internal Photoemission at Interfaces of ALD TaSiO_x Insulating Layers Deposited on Si, InP and In_{0.53}Ga_{0.47}As](#) H Y Chou, V V Afanas'ev, N H Thoan, C Adelmann, H C Lin, M Houssa and A Stesmans pg. 105

012020

[Investigation of SiGe/Si heterostructures using state-of-the-art Auger Nanoprobes](#) P K Yadav, E Martinez, F Bertin, M Bouttemy, E De Vito, O Renault, J M Hartmann, A Etcheberry and A Chabli pg. 109

012021

[Electron spin resonance study of point defects in thermal GaAs/GaAs-oxide structures](#) S Nguyen, V V Afanas'ev and A Stesmans pg. 113

012022

[Biostability of an implantable glucose sensor chip](#) M Fröhlich, M Birkholz, K E Ehwald, P Kulse, O Fursenko and J Katzer pg. 121