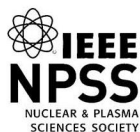


IEEE TRANSACTIONS ON NUCLEAR SCIENCE

A PUBLICATION OF THE IEEE NUCLEAR AND PLASMA SCIENCES SOCIETY



APRIL 2016

VOLUME 63

NUMBER 2

IETNAE

(ISSN 0018-9499)

PART III OF THREE PARTS

19TH REAL TIME CONFERENCE (RT2014), NARA, JAPAN, MAY 26–30, 2014

Advanced Data Acquisition System Implementation for the ITER Neutron Diagnostic Use Case Using EPICS and FlexRIO Technology on a PXIe Platform	1063
..... <i>D. Sanz, M. Ruiz, R. Castro, J. Vega, M. Afff, M. Monroe, S. Simrock, T. Debelle, R. Marawar, and B. Glass</i>	
JRTF: A Flexible Software Framework for Real-Time Control in Magnetic Confinement Nuclear Fusion Experiments	1070
..... <i>M. Zhang, G. Z. Zheng, W. Zheng, Z. Chen, T. Yuan, and C. Yang</i>	
Real-Time Data Acquisition for Single Photon Imaging Detector	1076
..... <i>K. Hu, X. Wang, Y. Yao, X. Gao, and Ge Jin</i>	

21ST SYMPOSIUM ON ROOM-TEMPERATURE SEMICONDUCTOR DETECTORS (RTSD), SEATTLE, WA, USA,
NOVEMBER 8–15, 2014

Deep Levels in n-Type 4H-Silicon Carbide Epitaxial Layers Investigated by Deep-Level Transient Spectroscopy and Isochronal Annealing Studies	1083
..... <i>M. A. Mannan, K. V. Nguyen, R. O. Pak, C. Oner, and K. C. Mandal</i>	
Effects of Chemical Treatments on CdZnTe X-Ray and Gamma-Ray Detectors	1091
..... <i>S. U. Egarievwe, A. Hossain, I. O. Okwechime, A. A. Egarievwe, D. E. Jones, U. N. Roy, and R. B. James</i>	

NUCLEAR AND SPACE RADIATION EFFECTS CONFERENCE (NSREC), BOSTON, MA, USA, JULY 13–17, 2015

An Investigation of the Use of Inverse-Mode SiGe HBTs as Switching Pairs for SET-Mitigated RF Mixers	1099
..... <i>I. Song, U. S. Raghunathan, N. E. Lourenco, Z. E. Fleetwood, M. A. Oakley, S. Jung, M.-K. Cho, N. J.-H. Roche, A. Khachatryan, J. H. Warner, S. P. Buchner, D. McMorro, P. Paki, and J. D. Cressler</i>	
Effects of Proton Radiation on Noise Performance in Solid-State Photomultipliers	1109
..... <i>X. J. Chen, E. B. Johnson, C. J. Stapels, D. Fernandez, M. Podolsky, S. Vogel, and J. F. Christian</i>	

(Contents Continued on Page 1061)



REGULAR PAPERS

Validation of Cross Sections for Monte Carlo Simulation of the Photoelectric Effect	1117
..... M. C. Han, H. S. Kim, M. G. Pia, T. Basaglia, M. Batič, G. Hoff, C. H. Kim, and P. Saracco	
Highly Parallelized Pattern Matching Hardware for Fast Tracking at Hadron Colliders	1147
..... S. Citraro, A. Annovi, N. Biesuz, P. Giannetti, P. Luciano, H. Nasimi, M. Piendibene, C.-L. Sotiropoulou, and G. Volpi	
32k Channel Readout IC for Single Photon Counting Pixel Detectors with 75 μm Pitch, Dead Time of 85 ns, 9 e ⁻ rms Offset Spread and 2% rms Gain Spread	1155
..... P. Grybos, P. Kmon, P. Maj, and R. Szczygiel	
Sensitivity Enhancement in Radiation Portal Monitoring Using Adaptive Matched Filtering	1162
..... R. M. Cibils	
Sparse Approximation-Based Maximum Likelihood Approach for Estimation of Radiological Source Terms	1169
..... T. Lee, P. Singla, T. Singh, and A. Gunatilaka	
On Polarization of Compensated Detectors	1188
..... A. Ruzin	
An Effective Multilevel Offset Correction Technique for Single Photon Counting Pixel Detectors	1194
..... P. Kmon, P. Maj, P. Grybos, and R. Szczygiel	
Experimental Validation of Charge-Sensitive Amplifier Configuration that Compensates for Detector Capacitance	1202
..... I. Kwon, T. Kang, and M. D. Hammig	
Pilot Study of the Application of Plastic Scintillation Microspheres to Rn-222 Detection and Measurement ...	1209
..... K. Mitev, I. Dimitrova, A. Tarancón, D. Pressyanov, L. Tsankov, T. Boshkova, S. Georgiev, R. Sekalova, and J. F. García	
A Comparison of the Detection Sensitivity of the Poisson Clutter Split and Region of Interest Algorithms on the RadMAP Mobile System	1218
..... T. H. Joshi, R. J. Cooper, J. Curtis, M. Bandstra, B. R. Cosofret, K. Shokhirev, and D. Konno	
Capture-Gated Spectroscopic Measurements of Monoenergetic Neutrons with a Composite Scintillation Detector	1227
..... J. Nattress, M. Mayer, A. Foster, A. B. Meddeb, C. Trivelpiece, Z. Ounaies, and I. Jovanovic	
Investigation of Spatial Control Strategies for AHWR: A Comparative Study	1236
..... R. K. Munje, B. M. Patre, P. S. Londhe, A. P. Tiwari, and S. R. Shimjith	
Logic-I/O Threshold Comparing γ -Dosimeter in Radiation Insensitive Deep-Sub-Micron CMOS	1247
..... A. Tang, Y. Kim, and M.-C. F. Chang	
Impact of Bias Conditions on Total Ionizing Dose Effects of ⁶⁰ Co γ in SiGe HBT	1251
..... J. Zhang, Q. Guo, H. Guo, W. Lu, C. He, X. Wang, P. Li, and M. Liu	
On the Validity of Certain Approximations Used in the Modeling of Nuclear EMP	1259
..... W. A. Farmer, B. I. Cohen, and C. D. Eng	
NBTI and Irradiation Effects in P-Channel Power VDMOS Transistors	1268
..... V. Davidović, D. Danković, A. Ilić, I. Manić, S. Golubović, S. Djorić-Veljković, Z. Prijić, and N. Stojadinović	
Characterizing Radiation and Stress-Induced Degradation in an Embedded Split-Gate NOR Flash Memory	1276
..... A. R. Duncan, M. J. Gadlage, A. H. Roach, and M. J. Kay	
Evaluation of Radiation Sensor Aspects of Er ₂ O ₃ MOS Capacitors under Zero Gate Bias	1284
..... A. Kahraman, E. Yilmaz, A. Aktag, and S. Kaya	
Analysis of SRAM-Based FPGA SEU Sensitivity to Combined EMI and TID-Imprinted Effects	1294
..... J. Benfica, B. Green, B. C. Porcher, L. B. Poehls, F. Vargas, N. H. Medina, N. Added, V. A. P. de Aguiar, E. L. A. Macchione, F. Aguirre, M. A. G. Silveira, M. Perez, M. S. Haro, I. Sidelnik, J. Blostein, J. Lipovetzky, and E. A. Bezerra	
A Detailed Study on Zero-Bias Irradiation Responses of La ₂ O ₃ MOS Capacitors	1301
..... E. Yilmaz and S. Kaya	

Leakage Current of Grounded Dielectrics in Electron Radiation as a Diagnostic Method to Evaluate the Deep Charging Hazards in Space	<i>Y. XiangQian, C. HongFei, Z. QiuGang, W. JianZhao, S. WeiHong, Z. Hong, Z. JiQing, Z. WeiYing, C. Zhe, S. SiPei, and J. XiangHong</i>	1306
Commissioning and Field Tests of a Van-Mounted System for the Detection of Radioactive Sources and Special Nuclear Material	<i>D. Cester, M. Lunardon, L. Stevanato, G. Viesti, R. Chandra, G. Davatz, H. Friederich, U. Gendotti, D. Murer, J. Iwanowska-Hanke, P. Sibirzynski, M. Moszynski, L. Swiderski, F. Resnati, A. Rubbia, A. Iovene, S. Petrucci, C. Tintori, M. Caccia, V. Chmill, R. Santoro, A. Martemyanov, M. Doherty, J. L. Carrol, G. Christodoulou, T. Stainer, and C. Touramanis</i>	1314
