

2020 20th European Conference on Radiation and Its Effects on Components and Systems (RADECS 2020)

**Virtual Conference
19 October – 20 November 2020**



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Tables of RADECS 2020 papers

As usual, the Conference authors had a choice to submit their papers to the IEEE Conference Record of RADECS 2020 and/or to the IEEE Transactions on Nuclear Science Journal, each path of edition comprising its own Reviewing Committee.

As a result, a coherent Proceeding of the 2020 RADECS Conference results in the merging of two lists of papers which result from these paths.

45 papers resulted in Conference Record papers and 34 papers in IEEE Transactions on Nuclear Science papers. Both can be accessed in IEEEXplore, in the two different Sections.

Therefore, in the following we successively present two lists of papers ordered in two Sections, subsequently ordered by their place in the Conference Sessions.

Section I – Conference Papers

These papers were submitted to the Conference Review Committee and appear in the RADECS 2020 Conference Papers in IEEE Xplore (Conference Section, RADECS 2020).

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(Volume: 68, [Issue: 8](#), Aug. 2021, part 1).

The August 2021 special issue of the IEEE Transactions on Nuclear Science contains 34 articles based on presentations made at the Conference and independently submitted to this Journal. They were reviewed independently of the Conference.

This Special issue can be reached at:

<https://ieeexplore.ieee.org/xpl/tocresult.jsp?isnumber=9514375>

For the completeness of the RADECS 2020 Conference Proceedings, the Conference Editors present in this Section II the list of these Journal papers ordered by their original sessions. The DOIs give easy access to this content which is reachable in the “Journal part” of IEEEXplore.

The content comprises the papers as follows:

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SEU Mechanisms in Spintronic Devices: Critical Parameters and Basic Effects

O. Coi, N. Andrianjohany, G. Di Pendina, L. Torres, D. Dangla, B. Dieny, R. Ecoffet

DOI: [10.1109/TNS.2021.3080080](https://doi.org/10.1109/TNS.2021.3080080), p. N/A

Defect-Induced Phase Transition in Hafnium Oxide Thin Films: Comparing Heavy Ion Irradiation and Oxygen-Engineering Effects

T. Vogel, N. Kaiser, E. Piros, S. Petzold, N. Guillaume, G. Lefèvre, C. Charpin-nicolle, S. David, C. Vallée, E. Nowak, C. Trautmann, L. Alff

DOI: [10.1109/TNS.2021.3085962](https://doi.org/10.1109/TNS.2021.3085962), p. N/A

Defect and Impurity-Complex Depassivation during Electron-Beam Irradiation of GaAs

D. Fleetwood, T. Mayer, M. Melloch

DOI: [10.1109/TNS.2021.3067769](https://doi.org/10.1109/TNS.2021.3067769), p. N/A

Investigation by Thermoluminescence of the Ionization and Annealing Processes in Irradiated Ge-Doped Silica Fiber Preform

A. Guttilla, C. Campanella, F. Mady, M. Benabdesselam, A. Morana, A. Boukenter, Y. Ouerdane2, S. Girard

DOI: [10.1109/TNS.2021.3070695](https://doi.org/10.1109/TNS.2021.3070695), p. N/A

TID Response and Radiation-Enhanced Hot-Carrier Degradation in 65-nm nMOSFETs: Concerns on the Layout-Dependent Effects

Z. Ren, X. An, G. Li, J. Liu, M. Xun, Q. Guo, X. Zhang, R. Huang

DOI: [10.1109/TNS.2021.3063137](https://doi.org/10.1109/TNS.2021.3063137), p. N/A

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TID Degradation Mechanisms in 16-nm Bulk FinFETs Irradiated to Ultrahigh Doses

T. Ma, S. Bonaldo, S. Mattiazzo, A. Baschilotto, C. Enz, A. Paccagnella, S. Gerardin

DOI: [10.1109/TNS.2021.3076977](https://doi.org/10.1109/TNS.2021.3076977), p. N/A

Supply Voltage Dependence of RO Frequencies for Total Ionizing Dose Exposures for 7nm Bulk FinFET Technology

Y. Xiong, A. Feeley, P. Wang, X. Li, E. Zhang, L. Massengill, B. Bhuvu

DOI: [10.1109/TNS.2021.3085341](https://doi.org/10.1109/TNS.2021.3085341), p. N/A

Analysis of Bipolar Integrated Circuit Degradation Mechanisms against Combined TID-DD Effects

R. Ferraro, R. Garcia, S. Danzeca, M. Alessandro

DOI: [10.1109/TNS.2021.3082646](https://doi.org/10.1109/TNS.2021.3082646), p. N/A

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Enhancing Fault Injection for SRAM FPGAs

J. Perez-Celis, C. Thurlow, M. Wirthlin

DOI: [10.1109/TNS.2021.3071704](https://doi.org/10.1109/TNS.2021.3071704), p. N/A

Analysis of Single Event Transients (SETs) using Machine Learning and Ionizing Radiation Effects Spectroscopy (IRES)

D. Loveless, D. Reising, J. Cancellari, L. W. Massengill, D. McMorrow

DOI: [10.1109/TNS.2021.3050879](https://doi.org/10.1109/TNS.2021.3050879), p. N/A

Role of Electron-Induced Coulomb Interactions to the Total SEU Rate during Earth and JUICE Missions

P. Caron, C. Inguibert, L. Artola, R. Ecoffet, F. Bezerra

DOI: [10.1109/TNS.2021.3082573](https://doi.org/10.1109/TNS.2021.3082573), p. N/A

The Pion SEL Cross Section Enhancement Mechanisms and Consequences for Accelerator RHA

A. Coronetti, R. Garcia Alia, W. Hajdas, D. Soderstrom, A. Javanainen, F. Saigné

DOI: [10.1109/TNS.2021.3070216](https://doi.org/10.1109/TNS.2021.3070216), p. N/A

Single Event Burnout Dependence on Reverse Gate Voltage for SiC Power MOSFETs in Atmospheric Environment

K. Niskanen, A. Touboul, R. Germanicus, A. Michez, F. Wrobel, J. Boch, V. Pouget, F. Saigné

DOI: [10.1109/TNS.2021.3077733](https://doi.org/10.1109/TNS.2021.3077733), p. N/A

A Track-Structure Based Approach to Upset-Rate Calculations

D. Hansen

DOI: [10.1109/TNS.2020.3046111](https://doi.org/10.1109/TNS.2020.3046111), p. N/A

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C. Ngom, V. Pouget, M. Zerarka, F. Coccetti, A. Touboul, M. Matmat, O. Crepel, S. Jonathas, G. Bascoul

DOI: [10.1109/TNS.2021.3081485](https://doi.org/10.1109/TNS.2021.3081485), p. N/A

Microprocessor Error Diagnosis by Trace Monitoring under Laser Testing

C M. Peña-fernandez, A. Lindoso, L. Entrena, I. Lopes, V. Pouget

DOI: [10.1109/TNS.2021.3067554](https://doi.org/10.1109/TNS.2021.3067554), p. N/A

Heavy Ion Testing Method and Results of Normally Off GaN-Based High Electron Mobility Transistor

J. Sauveplane, A. Dufour, E. Marcault, M. Orsatelli, G. Duran, J. Burky, B. Forgerit, F. Tilhac, F. Guerre

DOI: [10.1109/TNS.2021.3109990](https://doi.org/10.1109/TNS.2021.3109990), p. N/A

Dependency of Temperature and Back-Gate Bias on Single Event Upset Induced by Heavy Ion in 0.2 μm DSOI CMOS Technology

Y. Wang, F. Liu, B. Li, B. Li, Y. Huang, C. Yang, J. Zhang, G. Wang, J. Luo, Z. Han, X. Liu, K. Petrosyants

DOI: [10.1109/TNS.2021.3094669](https://doi.org/10.1109/TNS.2021.3094669), p. N/A

Analyzing DUE Errors with Neutron Irradiation Test and Fault Injection to Control Flow

K. Ito, Y. Zhang, H. Itsuji, T. Uezono, T. Toba, M. Hashimoto

DOI: [10.1109/TNS.2021.3098845](https://doi.org/10.1109/TNS.2021.3098845), p. N/A

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C. Sabatier, M. Aubry, L. Mescia, A. Morana, G. Melin, T. Robin, E. Marin, S. Girard, Y. Ouerdane, A. Boukenter

DOI: [10.1109/TNS.2021.3070609](https://doi.org/10.1109/TNS.2021.3070609), p. N/A

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T. Blanchet, A. Morana, E. Marin, Y. Ouerdane, A. Boukenter, S. Girard

DOI: [10.1109/TNS.2021.3076508](https://doi.org/10.1109/TNS.2021.3076508), p. N/A

Photobleaching Effect on Infrared Radiation-Induced Attenuation of Germanosilicate Optical Fibers at MGy Dose Levels

C. Campanella, A. Guttilla, A. Morana, V. De Michele, C. Muller, M. Aubry, F. Mady, E. Marin, Y. Ouerdane, A. Boukenter, M. Benabdesselam, S. Girard

DOI: [10.1109/TNS.2021.3068829](https://doi.org/10.1109/TNS.2021.3068829), p. N/A

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M. Levillayer, S. Duzellier, I. Massiot, A. Arnoult, T. Nuns, C. Inguibert, C. Aicardi, S. Parola, F. Oliivié, R. Monflier, T. Le Cocq, R. Rey, C. Pons, G. Almuneau, L. Artola

DOI: [10.1109/TNS.2021.3068044](https://doi.org/10.1109/TNS.2021.3068044), p. N/A

A Kinetic Monte Carlo Algorithm to Model the Annealing Process and Compute the Dark Current Nonuniformity

K. Lemiere, C. Inguibert, T. Nuns

DOI: [10.1109/TNS.2021.3074369](https://doi.org/10.1109/TNS.2021.3074369), p. N/A

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A. Balbekov, M. Gorbunov, A. Galimov

DOI: [10.1109/TNS.2021.3077443](https://doi.org/10.1109/TNS.2021.3077443), p. N/A

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S. Blower, P. Rech, C. Cazzaniga, M. Kastriotou, C. Frost

DOI: [10.1109/TNS.2021.3086686](https://doi.org/10.1109/TNS.2021.3086686), p. N/A

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F. Mori, M. Ebara, Y. Tsukita, J. Furuta, K. Kobayashi

DOI: [10.1109/TNS.2021.3075176](https://doi.org/10.1109/TNS.2021.3075176), p. N/A

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I. Da Costa Lopes, V. Pouget, F. Wrobel, A. Touboul, F. Saigné, K. Roed

DOI: [10.1109/TNS.2022.3143862](https://doi.org/10.1109/TNS.2022.3143862), p. N/A

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R. Ladbury, T. Carstens

DOI: [10.1109/TNS.2021.3055694](https://doi.org/10.1109/TNS.2021.3055694), p. N/A

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DOI: [10.1109/TNS.2021.3071583](https://doi.org/10.1109/TNS.2021.3071583), p. N/A

Surface Ionizing Dose for Space Application Estimated With Low Energy Spectra Going Down to Some Hundreds of eV

C. Inguibert, P. Caron, Q. Gibaru, A. Sicard, N. Balcon, R. Ecoffet

DOI: [10.1109/TNS.2020.3045200](https://doi.org/10.1109/TNS.2020.3045200), p. N/A

On-Orbit Pile-Up Detection and Digital Pulse-Shape Measurement Results in the Radiation Telescope

H. Ueno, K. Kamiya, H. Matsumoto, M. Tomitaka, T. Takashima

DOI: [10.1109/TNS.2021.3078515](https://doi.org/10.1109/TNS.2021.3078515), p. N/A

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M. Andjelkovic, J. Chen, A. Simevski, O. Schrape, M. Krstic, R. Kraemer

DOI: [10.1109/TNS.2021.3076400](https://doi.org/10.1109/TNS.2021.3076400), p. N/A

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DOI: [10.1109/TNS.2021.3075481](https://doi.org/10.1109/TNS.2021.3075481), p. N/A