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Advanced electronics for space and studies on climate change

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In order to determine the most suitable capacitors that may satisfy the different Climate Change field applications demands, we have searched, between the different manufacture companies in today's market, the most reliable, miniaturized and high temperature resistant silicon capacitors. With the recent progress in the 3D Silicon Capacitors, this technique was the best candidate for manufacturing capacitors with such characteristics. In this paper, an evaluation and testing analysis of three different families of PIC 3D silicon capacitors is presented. Following tests were supported by these silicon capacitors: Voltage and thermals step stress, accelerated life endurance and environmental tests including mechanical vibrations, mechanical and thermal shocks and cross section analysis. Furthermore, radiation tests with gamma radiation and heavy ions in order to study the Single Event Effect (SEE) were performed. It is concluded that their excellent behavior to these tests makes them highly suitable for Space and Climate Change applications.

Biography

Jose Sanchez Del Rio Saezhas has been working in Biotechnology with photonic biosensors for more than 4 years. He completed his PhD in photonic bio-sensing and DNA mutations detection at Madrid Microelectronics Institute (IMM-CNM-CSIC). Then he worked in a private company as a patent researcher in Biometrics and novel sensors and after as a Post-doc in the Face Recognition and Artificial Vision (FRAV) group of the Computer and Statistics department at Rey Juan Carlos University (URJC). He has done 2 Post-docs in the Nuclear Physics Department at the Matter Structure Institute (IEM-CSIC) and was specialized in high energy ions, protons and gamma radiation detection. Currently, he is working as a SW/HW testing engineer in the aerospace field for ALTER TECHNOLOGY.

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