



The Department of Electrical and Computer Engineering

Title: High-performance, Low-Power Integrated Reference Circuits and Reference Circuits for Space Applications

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(PhD student in Dr. Julio Georgiou's group)

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Room ΠTE E116, Old Campus - University of Cyprus

Abstract

Precision, high performance voltage references and bandgap voltage references are sine qua non in an IC system design due to the necessity of supplying a temperature, process and voltage insensitive reference to many analog, digital and mixed signal circuits such as operational amplifiers, sensors, flash memories, DACs, filters and LDOs. The accuracy and robustness of the reference voltage will undoubtedly be of major importance if the resolution of the subsequent circuits is to have any significance in the system level. Extending the temperature range beyond commercial applications range and operating at low-power consumption, while sustaining similar temperature drift performance, becomes extremely challenging.

Furthermore, electronic circuits in the space environment, which do not enjoy the protection of the earth's atmosphere, are constantly bombarded by high energy particles (cosmic rays, solar particle events, etc.) in addition to being exposed to higher levels of background radiation. Consequently voltage reference circuits that are intended to be used for space applications (satellites, spaceships, robotic-explorers, etc.) have to be radiation tolerant, in addition to the performance requirements of commercial and military applications.

Biography

Charalambos Andreou is a researcher and PhD candidate at the Department of Electrical and Computer Engineering at the University of Cyprus. Charalambos has received his Diploma of Engineering in Electronics and Computer Engineering from the Technical University of Crete in 2006. He has received his Master degree in Nanotechnology for Integrated Systems from the Politecnico di Torino, Grenoble INP (Minatec) and EPFL Lausanne. He worked for six months at the Institut für Mikrosystemtechnik in Freiburg, Germany as a part of his Master thesis. His Phd thesis project is on the design, development and characterization of "High-performance, Low-Power Integrated Reference Circuits and Reference Circuits for Space Applications". Research Interests: Analog and mixed signal ICs, Implantable biomedical systems, MEMS design, Ultra low power (Subthreshold) circuits and systems, Space electronics.