

Microelectronic Systems

for Improved Quality of Life

Wednesday, 17 November 2021, 12:00-13:00
To attend the seminar, click [here](#).



Julius Georgiou

Associate Professor

Microelectronic revolutions come in waves that are driven by necessity. Currently, the aging population is creating a need for various kinds of electronic systems to improve their quality of life. These include the restoration of lost functionality via electronic implants, better health screening technology and non-invasive monitoring in the home environment. This talk presents work that has been done towards addressing these needs, whether it be through the development of new required building blocks or through the development of more complex systems that combine custom built hardware and software. In particular, the talk covers work done towards developing a vestibular implant for balance restoration, a single chip low-power imager for a bionic eye, a cancer screening capsule for detecting early-stage carcinomas in the small intestine, a bio-inspired acoustic scene analysis system, the development of the ElectroUteroGraph, as well as the use of custom chips for the design of adaptive metamaterials.

Julius Georgiou (IEEE M'98-SM'08) is an Associate Professor at the University of Cyprus. He received his M.Eng degree in Electrical and Electronic Engineering and Ph.D. degree from Imperial College London in 1998 and 2003 respectively. For two years he worked as Head of Micropower Design in a technology start-up company, Toumaz Technology. In 2004 he joined the Johns Hopkins University as a Postdoctoral Fellow, before becoming a faculty member at the University of Cyprus from 2005 to date. He is one of the co-founders of AJM Med-i-CAPs Ltd.

Prof. Georgiou is a member of the IEEE Circuits and Systems Society, is the Chair of the IEEE Biomedical and Life Science Circuits and Systems (BioCAS) Technical Committee, as well as a member of the IEEE Circuits and Systems Society Analog Signal Processing Technical Committee. He served as the General Chair of the 2010 IEEE Biomedical Circuits and Systems Conference and is the Action Chair of the EU COST Action ICT-1401 on "Memristors-Devices, Models, Circuits, Systems and Applications - MemoCIS". Prof. Georgiou was an IEEE Circuits and Systems Society Distinguished Lecturer for 2016-2017. He also was an Associate Editor of the IEEE Transactions on Biomedical Circuits and Systems, an Associate Editor of the Frontiers in Neuromorphic Engineering Journal and a Guest Editor for the IEEE Journal on Emerging and Selected Topics in Circuits and Systems, for Programmable Metamaterials and also Circuits and Systems for Smart Agriculture. He is a recipient of a best paper award at the IEEE ISCAS 2011 International Symposium and at the IEEE BioDevices 2008 Conference. In 2016 he received ONE Award from the President of the Republic of Cyprus for his research accomplishments.

His research interests include Low-power analog and digital ASICs, adaptive metamaterials for medical applications, implantable biomedical devices, bioinspired electronic systems, electronics for space, brain-computer-interfaces (BCIs), electrouterography, circuits and systems for agriculture, memristive devices, inertial and optical sensors and related systems.

