

	Speaker	Shuenn-Yuh Lee
	Talk Title	Low Power Wireless ECG Acquisition and Cardiac Stimulation SOCs for Body Sensor Networks
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1. Tentative Abstract

Heart diseases are always the ranked first cause of ten leading causes of death over ten years, and there are several medical devices are made to monitor their heart to avert the heart diseases. In recent years, body sensor networks (BSNs) based applications or devices have become more and more popular, and acceptable to the people for monitoring the real-time health information, such as the electrocardiogram (ECG). In order to enhance the portability and increase the popularization of BSNs, a low-power wireless ECG acquisition system on a chip (SOC) stuck on the body is required. In this tutorial, a bio-signal acquisition system with the features of low power consumption, wireless transmission, and the on-time monitoring will be presented. Moreover, some researches have been reported that it is efficient to electrically generate neural action potential to control dysfunctional organs. Therefore, various implantable microstimulators have been designed for various clinical applications, such as cardiac pacemaker. The telemetry integrated circuits will be required because they can provide coupling power and are able to transmit or receive data to or from according to implantable body sensor network. In this tutorial, a closed-loop implantable micro-stimulator system on chip (IMSoC), which possesses the sensing of a physiological signal, micro-stimulation, and wireless data/command transmission, will be also presented.

2. Brief Biography

Shuenn-Yuh Lee was born in Taichung, Taiwan, in 1966. He received the B.S. degree from the National Taiwan Ocean University, Keelung, Taiwan, in 1988, and the M.S. and Ph.D. degrees from the National Cheng Kung University, Tainan, Taiwan, in 1994 and 1999, respectively.

He was an Associate Professor from 2006 and Professor from 2011, respectively, at the Department of Electrical Engineering, National Chung Cheng University, Chia-Yi, Taiwan. He is currently a Professor at the Department of Electrical Engineering, National Cheng Kung University, Tainan, Taiwan. He served as the Chairman of Heterogeneous Integration Consortium (HIC) under the VLSI Educational Program sponsored by Ministry of Education, Taiwan, from 2009 to 2011. He served as the

Technical Program Chair (TPC) of the 2011 International Symposium on Bioelectronics & Bioinformatics (ISBB) and the 2013 IEEE International Conference on Orange Technologies (ICOT), and the Publication Chair for the 2012 IEEE Asia Pacific Conference on Circuits and Systems (APCCAS). From 2013, he serves as the Chairman of IEEE Solid-State Circuits Society Tainan Chapter.

His research interests include biomedical circuits and systems design, low-power signal acquisition systems, and wireless healthcare systems. He has published more than 20 papers on IEEE Transactions/Journals.

Dr. Lee is a member of IEEE Engineering in Medicine and Biology (EMB) Society, Circuits and Systems (CAS) Society, and Solid-State Circuits (SSC) Society.

3. List of Representative Publications (*corresponding author)

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