

EC Low Power Biomedical Communication

CMOS, BiCMOS and SOI CMOS technologies, CMOS inverters, static logic circuits of CMOS, pMOS transistor, BiCMOS, SOI CMOS and low power CMOS static circuit design techniques.

Basic concepts of dynamic logic circuits, various problems associated with dynamic logic circuits, Differential, BiCMOS and low voltage dynamic logic circuit design techniques.

Low-Power ADCs for Bio-Medical Applications: ADC Specifications, Charge-Sharing Successive Approximation ADCs, Comparator-Based Asynchronous Binary Search ADCs

Low Power Bio-Medical DSP: ECG Signal Processor Design, Pre Processing, Classification Processor, Post-processor, Low Energy Techniques

Short Distance Wireless Communications: Biomedical Telemetry Methods, Modulation Methods, Compression, Error Correction, Carrier Frequency Selection for RF Links. Body Channel Communication for Energy-Efficient BAN: Channel Characteristics, Design of Wideband Signal Transceiver, Wideband Signaling Communication Link

References:

- 1) Hoi-Jun Yoo, Chris van Hoof: *Integrated Circuits and Systems-Biomedical CMOS ICs*, Springer, 2011
- 2) Jan Rabaey: *Low Power Design Essentials (Integrated Circuits and Systems)*, Springer, 2006
- 3) J.B.Kuo, J.H.Lou: *Low-voltage CMOS VLSI Circuits*, Wiley, 1999
- 4) D.C. Reddy, *Biomedical Signal Processing, Principles and Techniques*, Tata McGrawHill, 2005.

Mod-RB/BM
for Sample
16-3-15