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IEEE SSCS講師(IEEE SSCS Distinguished Lecturer)による回路セミナ
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この度、IEEE SSCS Japan Chapterでは下記の日程で、IEEE SSCS講師(IEEE SSCS Distinguished Lecturer)による回路セミナを東京において開催することとなりました.大変貴重な御講演ですので、どうぞ奮って御参加下さい.参加費無料、参加申込み不要です.なお、11/21(月)に大阪において同様のセミナが開催されます.

日時: 11/18(金) 13:15-17:45
場所: 早稲田大学グリーンコンピューティングシステム研究開発センター
1階プレゼンテーションルーム
http://www.kikou.waseda.ac.jp/gcs/contact/index.html

主催: IEEE SSCS Japan Chapter
共催: IEEE SSCS Kansai Chapter
早稲田大学グリーンコンピューティングシステム研究機構

参加費: 無料
参加申込み: 不要
問合せ先: IEEE SSCS Japan Chapter Secretary 大島俊(日立)
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プログラム
13:15-13:25 Opening:
Dr. Kunio Uchiyama(Hitachi Ltd.), SSCS Japan Chapter Chair
13:25-14:25 Lecture 1:
Prof. Hoi-Jun Yoo, KAIST
Topic: Healthcare CMOS IC System Design
14:30-15:30 Lecture 2:
Prof. Bram Nauta, University of Twente
Topic: Analog and RF Circuit Techniques in Nanometer CMOS
15:40-16:40 Lecture 3:
Dr. David Su, Qualcomm
Topic: Challenges in Designing CMOS Wireless System-on-a-Chip
16:45-17:45 Lecture 4:
Prof. Minoru Fujishima, Hiroshima University
Topic: Millimeter-Wave and Terahertz CMOS Design

Prof. Hoi-Jun Yoo の御講演内容

Compact and convenient healthcare systems made of CMOS IC are necessary for the low cost ubiquitous healthcare service. Healthcare systems, such as portable, wearable and implantable, are anatomized, and the signals, circuits and systems from the body to the LAN or other public networks are examined. The compact CMOS circuits for the sensor read-out, ADC, ultra low power platform, and wireless communication will be explained. The packaging technology, especially wearable forms, is important for user's convenience. Fabric will be used extensively as the system integration substrate, and a new integration scheme that the CMOS ICs will be directly bonded on the fabric will be introduced. Bandage type ECG monitors, wirelessly powered and connected to the reader, will be explained as the system example.

Prof. Bram Nauta の御講演概要

The BLIXER is a combination of Balun, LNA and Mixer, in one. The circuit features the cancelling of thermal noise coming from the input matching-transistor. This compact circuit enables down-conversion over a wide RF (0-7GHz) band at low noise (NF<5dB). An interferer-robust receiver for wideband RF signals. (e.g. TV tuner or cognitive radio receiver) In this new concept, the harmonic rejection of a wideband receiver is improved by 20dB to 60dB using a 2-stage harmonic cancellation scheme. The 2-stage technique is highly insensitive for component accuracies and no trimming or calibration is therefore needed. Also thanks to an impedance up-conversion technique, the filter requirements at RF are strongly relaxed. Also a digital technique is introduced to achieve even 80dB harmonic rejection at the strongest interferer, making use of the same analog hardware....

Dr. David Su の御講演概要

This talk describes the challenges in designing CMOS systems-on-a-chip for wireless communications. RF transceiver building blocks for signal amplification, frequency translation, and frequency selectivity are examined with special emphasis on low noise amplifier, power amplifier, mixer, and frequency synthesizer. System-on-a-chip integration issues are also discussed.

Prof. Minoru Fujishima の御講演概要

Millimeter-wave and its higher-frequency part 'terahertz' have attracted many attentions to open up new applications such as ultrahigh-speed wireless communication and noninvasive transparent image. Utilizing recent transistor

performance in CMOS technology, those new applications are being realized by commercial CMOS process. Since base-band signal processors are indispensable in a system level, CMOS circuits for millimeter-wave and terahertz have advantage against compound-semiconductor circuits from viewpoint of high-volume production and low-power consumption. In this talk, we will discuss millimeter-wave and terahertz CMOS design by clarifying difference from conventional microwave design. Design examples from system level to building block for mobile high-speed communication are also discussed.

以上