IEEE Journal on Emerging and Selected Topics in Circuits and Systems (JETCAS)

Guest editor

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Scope and purpose

The IEEE Journal on Emerging and Selected Topics in Circuits and Systems (JETCAS) seeks original contributions for an issue on Brain-Machine Interfaces (BMI) and Brain-Computer Interfaces (BCI), scheduled to appear in December 2011. The JETCAS special issue part of CAS-FEST 2011 workshop is organized jointly by the following IEEE Societies: Circuits and Systems (CAS), Engineering, Medicine and Biology (EMB), and Systems, Man, and Cybernetics (SMC). It welcomes contributions in current and emerging topics related to the state-of-the-art and future directions of the BMIs/BCIs.

BMI and BCI are emerging topics, which cover many disciplines, from signal processing to biomedical engineering. These devices and algorithms translate physiological activity into machine language, which can be used to restore or enhance, either partially or completely, the human perceptive or sensory-motor functions. Their numerous applications and fervent reception in the medical community have turned BMI into one of the most dynamic and interesting topics in the IEEE community. The implementation of complete BMIs offers many circuits and systems design challenges, which include neural sensors, wireless transmission, harvesting energy, signal processing activities, low-power and low-voltage circuits, material sciences and biocompatibility. The research community is now especially focused on the implementation of wireless sensors and biosignal processing.

Topic of interest

Authors are invited to submit their contributions following submission procedure of the IEEE JETCAS. The topic includes (but not limited to):

1. Brain-machine interface, brain-computer interface
2. Bioinspired, biomedical circuits and systems
3. Biomedical instrumentation and imaging technologies
4. Biosensor devices and interfaces
5. Biosignal and bioimage processing, and bioinformatics
6. Body area networks/body sensor networks
7. Electronics for brain science, and implantable electronics
8. Functional Electrical Neuromuscular Stimulation
9. Harvesting/scavenging energy
10. Lab-on-chip for diagnostic, and drug delivery devices
11. Medical information, and healthcare systems
12. Neural data recording, sorting, detection, and compression
13. Sensor array and multichannel systems
14. Wireless technology for medicine, biology, and life sciences

Important dates

+ Paper submission   **June 1, 2011**
+ Notification of acceptance   **July 15, 2011**

Request for information

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