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Circuits and Systems for Biomedical Applications

UKCAS 2018

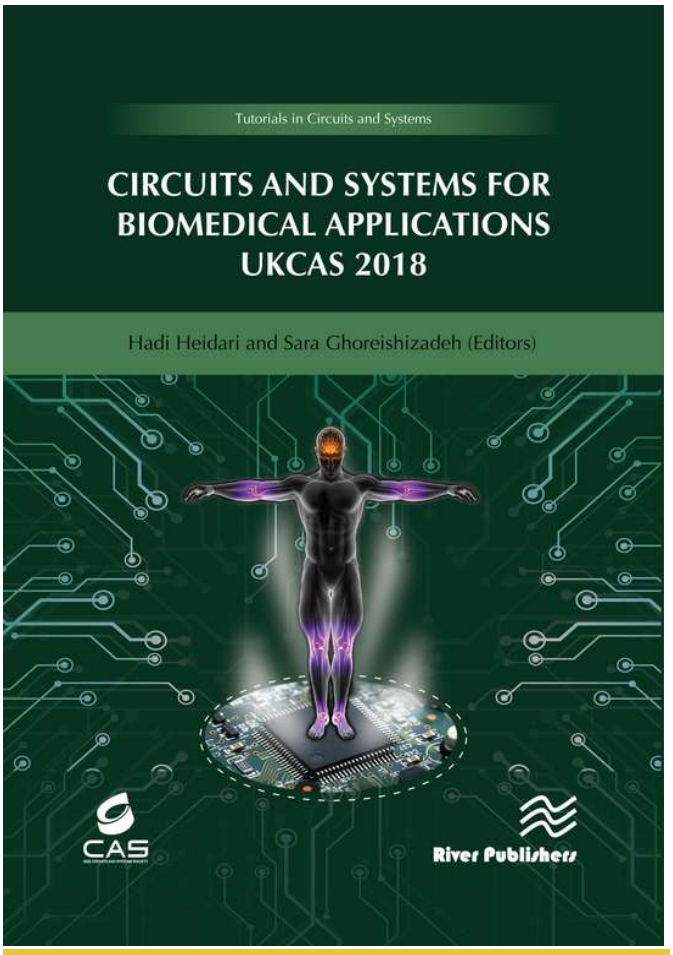
Editors:

Hadi Heidari, University of Glasgow, UK

Sara Ghoreishizadeh, University College London, UK

Circuits and Systems for Biomedical Applications -UKCAS 2018 covers several advanced topics in the area of Devices, Analog and Mixed-Signal Circuits and Systems for Biomedical Applications. The fundamental aspects of these topics are discussed, and state-of-the-art developments are presented.

The book proceeds the 1st United Kingdom Circuits and Systems (UKCAS 2018) Workshop. It addresses multidisciplinary theme areas such as Biosensing, Memristors, next-generation medical diagnostics, neural-inspired circuits, neural implants, neuro-prostheses, prosthetic hand and neuro-rehabilitation. Having perceived the device and circuit assets for such technologies and knowing what challenges these present for the biomedical scientists and engineers, integrated circuits for addressable biosensing are reviewed in the first chapter. The Second Chapter is harnessing the power of the brain using metaloxide Memristors. The third chapter contains construction of an endoscopic capsule for the diagnostics of dysmotilities in the gastrointestinal track. The next three chapters are on neural interfaces: analogue building blocks of neural inspired circuits are described in the fourth chapter while chapter five focuses on circuits for bio-potential recording from the brain. Networked Integrated circuits and their use in creating advanced implantable stimulation systems will be discussed in chapter six. This topic will be completed by circuits and systems for control of Prosthetic Hands in seventh chapter and genetically enhanced brainimplants for neuro-rehabilitation in chapter eight.



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