



Guest Editors

Mehmet R. Yuce, PhD
Monash University
Mehmet.yuce@monash.edu

Ilangko Balasingham, PhD
Norwegian University of Science and Technology
ilangko.balasingham@medisin.uio.no

Yong-Kyu "YK" Yoon, Ph.D.
University of Florida
ykyoon@ece.ufl.edu

Jianqing Wang, Ph.D.
Nagoya Institute of Technology, Japan
wang@nitech.ac.jp

Carmen C.Y. Poon, PhD
The Chinese University of Hong Kong
cpoon@surgery.cuhk.edu.hk

Key Dates

Deadline for Submission:
1st November 2014

First Reviews Due:
30th November, 2014

Revised Manuscript Due:
15th February, 2015

Final Decision:
15th March, 2015

Editor-in-Chief:

Guang-Zhong Yang, PhD,
FREng, FIEEE, FIET, FAIMBE, FIAMBE
Director & Co-Founder,
The Hamlyn Centre
Level 4, Bessemer Building
Imperial College London
London SW7 2AZ
T: +44 (0)20 7594 1499
F: +44 (0)20 7594 5196

RF and Communication Technologies for Wireless Implants

J-BHI Special Issue

An in-body medical device is a miniature medical device that is inserted in the human body to collect images and physiological data or to act like a prosthetic device restoring certain body functions. These devices should communicate with the external world to maintain their operation for a long period of time. This is achieved by integrating wireless communication technologies within these devices. Sometimes, a body worn device is used to receive the medical information from the devices in the human body and then transmit to remote stations for remote medical monitoring.

There are already several commercial in-body medical devices that are used in the clinical settings for diagnosis of diseases. Currently, researchers are working to add new features with help of advanced nano- and micro- technologies. New sensing mechanisms, advanced wireless telemetry links, and low power RF building blocks are still required to enable high performance and better diagnostic capabilities for healthcare applications. However size constraints present a significant problem when designing such links. New developments also consider wireless energy mechanism to provide power supply for wireless implants operating within the body.

This special issue aims to cover recent research activities that tackle some of the existing challenges and design issues related to the use of RF and Communication Technologies for wireless implants. Topics of interests include but are not limited to:

- Wireless telemetry techniques
- Optimization and modelling of wireless telemetry links in the body
- Wireless endoscopy devices
- Wireless telemetry links for prosthetic devices. E.g. Bionic eye implants, cochlear implants etc.
- Wireless energy techniques for wireless implants and wireless endoscopy devices
- Wireless medical sensor design
- Wireless neural systems
- Wireless biosensors, MEMS based wireless sensor systems
- In-body propagation issues
- Electromagnetics effects and safety limits of wireless links
- Wireless inductive links and antenna design
- Low-power circuit building blocks
- Microwave and electromagnetic studies related to wireless implants

Submission of manuscripts

Submitted articles must not have been previously published or currently submitted for journal publication elsewhere. As an author, you are responsible for understanding and adhering to our submission guidelines (<http://jbhi.embs.org/for-authors/>). When submitting, authors are requested to choose "RF and Communication Technologies for Wireless Implants" in the manuscript type to indicate that the paper is intended for this special issue. The managing editor for coordinating this special issue is Dr Carmen Poon.