TELEMETRY: RESEARCH, TECHNOLOGY AND APPLICATIONS

DIANA BARCULO

AND

JULIA DANIELS

EDITORS

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Chapter 1

BIOMEDICAL TELEMETRY:
TECHNOLOGY AND APPLICATIONS

Azran Azhim¹, Yohsuke Kinouchi² and Masatake Akutagawa²
1. Frontier Research and Development Center, Tokyo Denki University, Ishizaka, Hatoyama, Hiki, Saitama, 350-0394 Japan
2. The Institute of Technology and Science, The University of Tokushima, 1-2 Minamijou Sanjima, Tokushima, 770-8506 Japan

ABSTRACT

Telemetry has now become a vital constituent in the field of medical sciences to remote measurement of biological parameters. Biomedical telemetry provides a means for monitoring and studying human and animal physiologic functions from a remote site with wireless transmission for the goals of minimally disturbing normal activity or freedstrain of target’s subject to allow ambulatory freedom. Signals derived from physiologic transducers have been encoded and formatted in many different ways in an effort to improve transmission reliability in air space and water and carrier signals have included radio, sound and light. The long-lived primary and secondary cells have been developed for power source of transmitters. Power can now be transferred at such a radio frequency (RF) across the tissues to implanted biotelemeters using magnetic inductive powering system. Inductive powering of implantable monitoring devices is a widely accepted solution for replacing implanted batteries. Thin film solid state lithium batteries are an attractive to telemetry system of choice, offering high energy density, flexible, lightweight, miniature, rechargeable and longer lifespan so that usable in such applications of implantable medical devices, active radio frequency identification (RFID) tags, flexible displays, and E-paper. The evolution in sophisticated miniaturization provides the improvements of electronic components and assembly capabilities that available to investigators. A new technology of a capsule-camera for endoscopy is now found in sophisticated miniaturized microcontroller implementations. A survey of

* Correspondence: Azran Azhim, Frontier R&D Center, Tokyo Denki University, Ishizaka, Hatoyama, Hiki, Saitama, 350-0394 JAPAN. Tel: +81-49-296-1935, Fax: +81-49-296-2925. Email: azran@frontier.dendai.ac.jp or azran2020@gmail.com.
Telemetry Research, Technology and Applications

Contributors

Azran Azhim
Yohsuke Kinouchi
Masatake Akutagawa
Jodie Martin
Vincent Tolon
Bram Van Moorter
Mathieu Basille
Clément Calenge
Marco Weiergräber
Matthew S. P. Ho
Jürgen Hescheler
Toni Schneider
Filipa Loureiro
Luís Miguel Rosalino
Pier Andrea Serra
Martin Hebel
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Ralph F. Tate
Yuya Makiguchi

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Hisaya Nii
Katsuya Nakao
Hiroshi Ueda
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Natchanon Amornthammarong
Duangjai Nacapricha
Kamonthip Sreenonchai
Peerapat Anujarawat
Prapin Wilairat
Jacopo P. Mortola

Diana Barculo
Julia Daniels
Editors

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