Implantable Biomedical Microsystems: Design Principles and Applications (Micro and Nano Technologies)

From Swarup Bhunia
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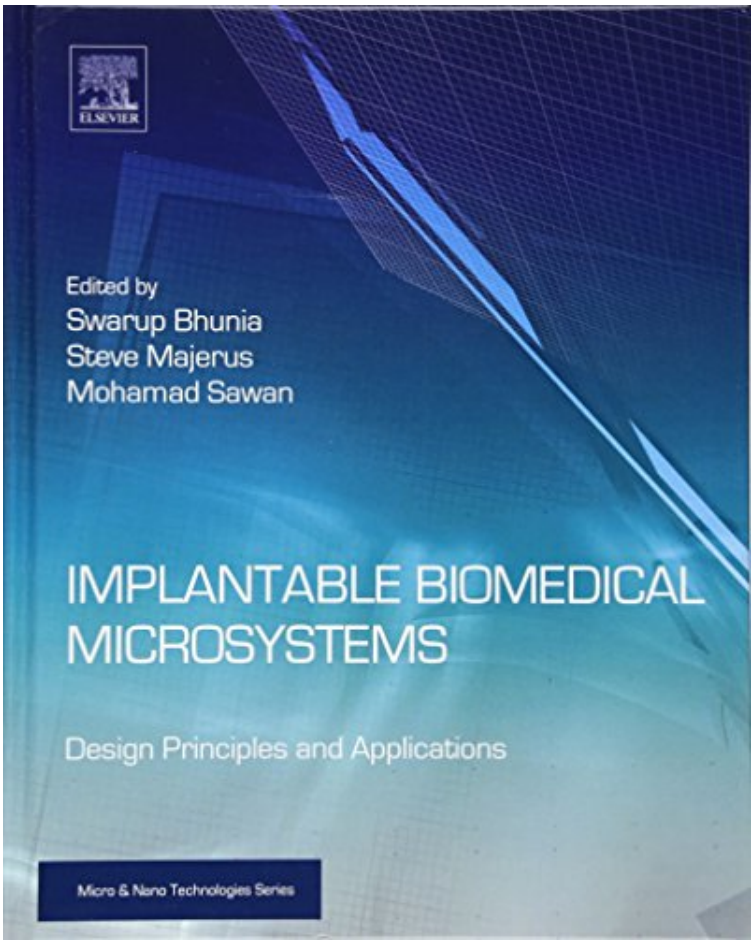

#4047284 in Books Swarup Bhunia 2015-02-10Original language:EnglishPDF # 1 9.25 x .81 x 7.52l, .0 #File Name: 0323262082336 pagesImplantable Biomedical Microsystems | File size: 41.Mb

From Swarup Bhunia : Implantable Biomedical Microsystems: Design Principles and Applications (Micro and Nano Technologies) before purchasing it in order to gage whether or not it would be worth my time, and all praised Implantable Biomedical Microsystems: Design Principles and Applications (Micro and Nano Technologies):

0 of 0 people found the following review helpful. All the chapters are written well with nice illustrative figuresBy Jongsun ParkThe book provides comprehensive coverage on both design approaches and applications. This book is really helpful for Circuit/System designers for bio-medical applications. All the chapters are written well with nice illustrative figures.

Research and innovation in areas such as circuits, microsystems, packaging, biocompatibility, miniaturization, power

supplies, remote control, reliability, and lifespan are leading to a rapid increase in the range of devices and corresponding applications in the field of wearable and implantable biomedical microsystems, which are used for monitoring, diagnosing, and controlling the health conditions of the human body. This book provides comprehensive coverage of the fundamental design principles and validation for implantable microsystems, as well as several major application areas. Each component in an implantable device is described in details, and major case studies demonstrate how these systems can be optimized for specific design objectives. The case studies include applications of implantable neural signal processors, brain-machine interface (BMI) systems intended for both data recording and treatment, neural prosthesis, bladder pressure monitoring for treating urinary incontinence, implantable imaging devices for early detection and diagnosis of diseases as well as electrical conduction block of peripheral nerve for chronic pain management. Implantable Biomedical Microsystems is the first comprehensive coverage of bioimplantable system design providing an invaluable information source for researchers in Biomedical, Electrical, Computer, Systems, and Mechanical Engineering as well as engineers involved in design and development of wearable and implantable bioelectronic devices and, more generally, teams working on low-power microsystems and their corresponding wireless energy and data links. First time comprehensive coverage of system-level and component-level design and engineering aspects for implantable microsystems.Provides insight into a wide range of proven applications and application specific design trade-offs of bioimplantable systems, including several major case studiesEnables Engineers involved in development of implantable electronic systems to optimize applications for specific design objectives.

About the AuthorSwarup Bhunia is a professor in the department of Electrical and Computer Engineering at the University of Florida. Previoously he was the T. and A. Schroeder Associate Professor of Electrical Engineering and Computer Science at Case Western Reserve University. He has over ten years of research and development experience with over 200 publications in peer-reviewed journals and premier conferences. His research interests include hardware security and trust, adaptive nanocomputing and novel test methodologies. Dr. Bhunia received the IBM Faculty Award (2013), National Science Foundation career development award (2011), Semiconductor Research Corporation Inventor Recognition Award (2009), and SRC technical excellence award (2005), and several best paper awards/nominations. He has been serving as an associate editor of IEEE Transactions on CAD, IEEE Transactions on Multi-Scale Computing Systems, ACM Journal of Emerging Technologies, and Journal of Low Power Electronics; served as guest editor of IEEE Design Test of Computers (2010, 2013) and IEEE Journal on Emerging and Selected Topics in Circuits and Systems (2014). He has served as co-program chair of IEEE IMS3TW 2011, IEEE NANOARCH 2013, IEEE VDAT 2014, and IEEE HOST 2015, and in the program committee of many IEEE/ACM conferences. He is a senior member of IEEE.