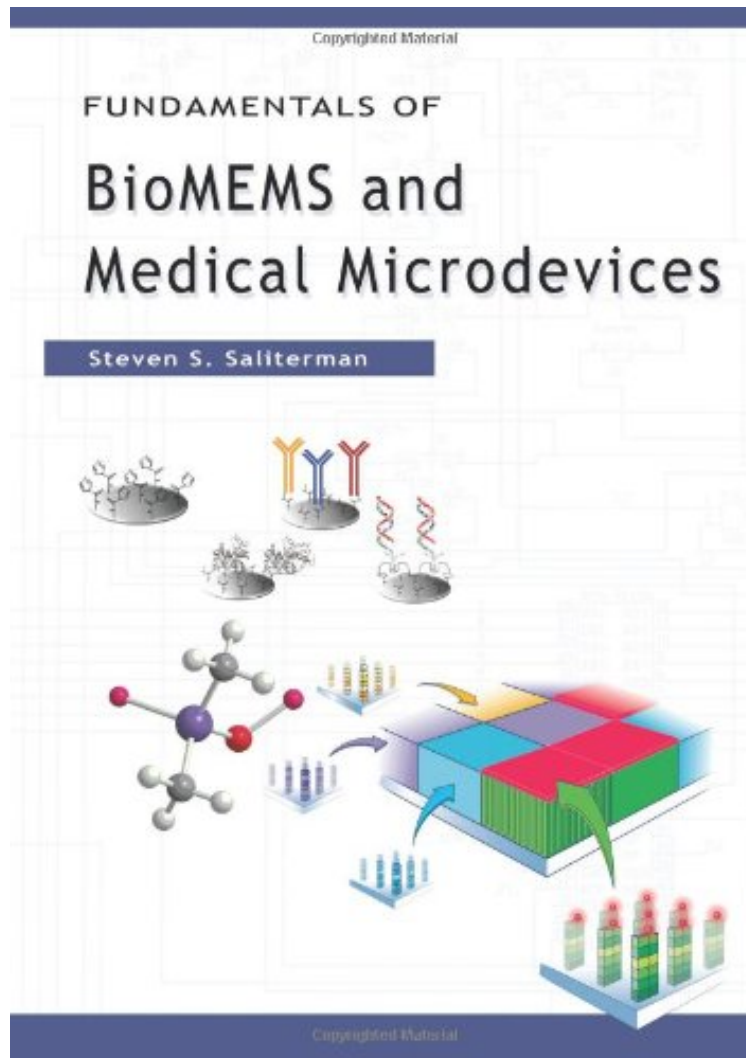


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Fundamentals of BioMEMS and Medical Microdevices

Steven S. Saliterman

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Steven S. Saliterman : Fundamentals of BioMEMS and Medical Microdevices before purchasing it in order to gage whether or not it would be worth my time, and all praised Fundamentals of BioMEMS and Medical Microdevices:

0 of 0 people found the following review helpful. Three StarsBy BretNot very intensive on the equations or physical explanations, but is very practical for the cleanroom.0 of 0 people found the following review helpful. Five StarsBy CococatGood read0 of 0 people found the following review helpful. Very extensive, but hard to read.By J. VerheggenI bought this book for my work in order to get a better understanding of the bio side of MEMS. Having a physics background, it is sometimes difficult to understand the needs of the medical and life sciences with respect to MEMS

devices. I think the book is very complete, it tries to incorporate all aspects of biomems, but everything is touched on only shortly. The book tries to be readable for both MEMS fabrication engineers (me) and for the medical field. But I feel that it failed in doing so by not elaborating enough. It is a steep learning curve for people with no background in chemistry. On the other hand, it will probably find its way on the shelf of many medical microdevice designers as it is very extensive and because of its completeness, gets 4 stars from me.

BioMEMS devices are as important to the future of medicine as microprocessors were to the computer revolution at the end of the last century. BioMEMS is a science that includes more than simply finding biomedical applications for microelectromechanical systems devices. It represents an expansion into a host of new polymer materials, microfluidic physics, surface chemistries and their modification, 'soft' fabrication techniques, biocompatibility, and cost-effective solutions to biomedical problems. It brings together the creative talents of electrical, mechanical, optical, and chemical engineers, materials specialists, clinical laboratory scientists, and physicians. BioMEMS devices are the platform upon which nanomedicine will be delivered. Based on the author's course on bioMEMS at the University of Minnesota, this book is an introduction to the science and a survey of the state of the art. Topics include microfabrication of silicon, glass, and polymer devices, microfluidics and electrokinetics, sensors, actuators, and drug-delivery systems, micro-total-analysis systems and lab-on-a-chip devices, detection and measuring systems, genomics, proteomics, DNA, and protein microarrays, emerging applications in medicine, research, and homeland security, and packaging, biocompatibility, and ISO 10993 testing. The first text of its kind dedicated to bioMEMS training, this book is suitable for a single semester course for senior and graduate-level students, or as an introduction to others interested or already working in the field. "A clear, well-organized, well-balanced book. Recommended." --CHOICE, July 2006.

From the Back Cover The world is on the threshold of a revolution that will change medicine and how patients are treated forever. Bringing together the creative talents of electrical, mechanical, optical and chemical engineers, materials specialists, clinical-laboratory scientists, and physicians, the science of biomedical microelectromechanical systems (bioMEMS) promises to deliver sensitive, selective, fast, low cost, less invasive, and more robust methods for diagnostics, individualized treatment, and novel drug delivery. This book is an introduction to this multidisciplinary technology and the current state of micromedical devices in use today. The first text of its kind dedicated to bioMEMS training. Fundamentals of BioMEMS and Medical Microdevices is Suitable for a single semester course for senior and graduate-level students, or as an introduction to others interested or already working in the field. About the Author Prof. Steven S. Saliterman teaches bioMEMS and senior design in the Department of Biomedical Engineering at the University of Minnesota. He is a faculty member of the Nano Microsystems Applications Center, past Chairman of the Department of Medicine at Methodist Hospital, diplomat of the American Board of Internal Medicine, and CLIA certified Clinical Laboratory Director. He is a former research intern at the NASA Johnson Space Center and research fellow at the NASA Ames Research Center. He participated in early design of the Space Shuttle Space Lab and developed implantable devices for space research. He designed and patented a system for simulating critical care patient management, inclusive of a manikin apparatus for practicing heart catheterization. His current research is in biomaterials, bioMEMS and nanotechnologies. He has been a guest lecturer at Johns Hopkins and the Mayo Clinic; and guest speaker at the design of Medical Devices conference sponsored by University of Minnesota, and the MedEdge International conference sponsored by Minnesota Medical Alley.