Microbiorobotics: Biologically Inspired Microscale Robotic Systems (Micro and Nano Technologies)

From William Andrew
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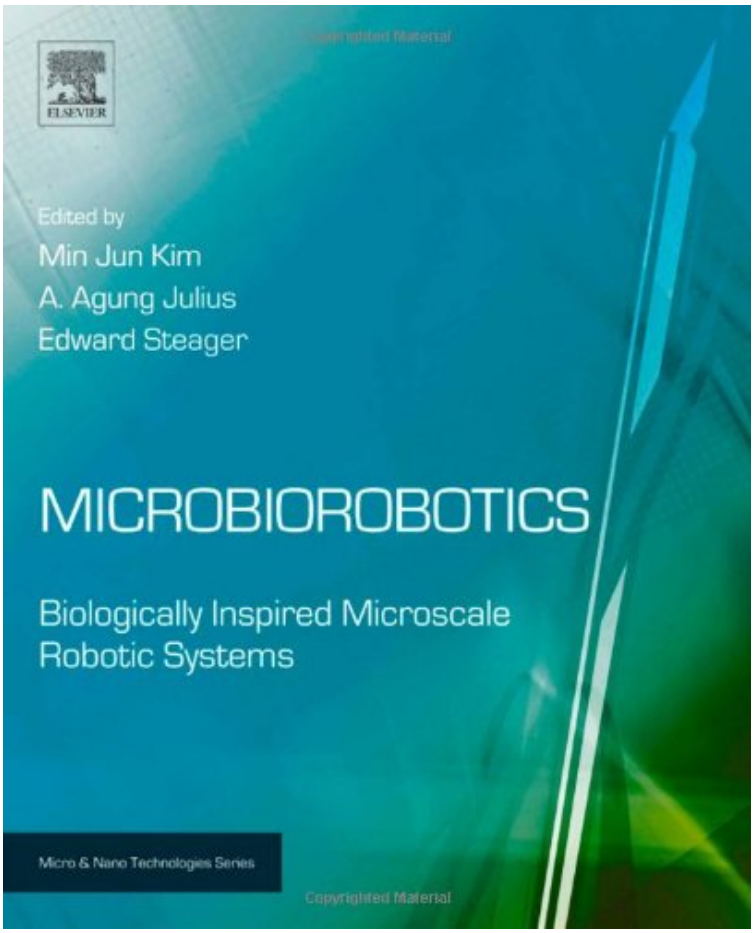

#4745405 in Books 2012-04-06Original language:EnglishPDF # 1 9.30 x .90 x 7.50l, 1.63 #File Name: 1455778915328 pages | File size: 28.Mb

From William Andrew : Microbiorobotics: Biologically Inspired Microscale Robotic Systems (Micro and Nano Technologies) before purchasing it in order to gage whether or not it would be worth my time, and all praised Microbiorobotics: Biologically Inspired Microscale Robotic Systems (Micro and Nano Technologies):

Microbiorobotics is a new engineering discipline that inherently involves a multidisciplinary approach (mechanical engineering, cellular biology, mathematical modeling, control systems, synthetic biology, etc). Building robotics system in the micro scale is an engineering task that has resulted in many important applications, ranging from micromanufacturing techniques to cellular manipulation. However, it is also a very challenging engineering task. One of the reasons is because many engineering ideas and principles that are used in larger scales do not scale well to the

micro-scale. For example, locomotion principles in a fluid do not function in the same way, and the use of rotational motors is impractical because of the difficulty of building of the required components.Microrobotics is an area that is acknowledged to have massive potential in applications from medicine to manufacturing. This book introduces an inter-disciplinary readership to the toolkit that micro-organisms offer to micro-engineeringThe design of robots, sensors and actuators faces a range of techology challenges at the micro-scale. This book shows how biological techniques and materials can be used to meet these challengesWorld-class multi-disciplanry editors and contributors leverage insights from engineering, mathematical modeling and the life sciences creating a novel toolkit for microrobotics

About the AuthorDr MinJun Kim is presently an associate professor at Drexel University with a joint appointment in both the Department of Mechanical Engineering Mechanics and the School of Biomedical Engineering, Science Health System.. For the past several years, Dr. Kim has been exploring biological transport phenomena including cellular/molecular mechanics and engineering in novel nano/microscale architectures to produce new types of nanobiotechology, such as nanopore technology and nano/micro robotics. His notable awards include the National Science Foundation CAREER Award (2008), Drexel Career Development Award (2008), Human Frontier Science Program Young Investigator Award (2009), Army Research Office Young Investigator Award (2010), Alexander von Humboldt Fellowship (2011), KOFST Brain Pool Fellowship (2013), Bionic Engineering Outstanding Contribution Award (2013), Louis Bessie Stein Fellowship (2014), ISBE Fellow (2014), and ASME Fellow (2014).Dr. Anak Agung Julius is an Assistant Professor at the Department of Electrical, Computer, and Systems Engineering at the Rensselaer Polytechnic Institute. He is also a faculty member of the Rensselaer Center for Automation Technologies and Systems. His research interests lie in the intersection of systems and control theory, systems biology, and theoretical computer science