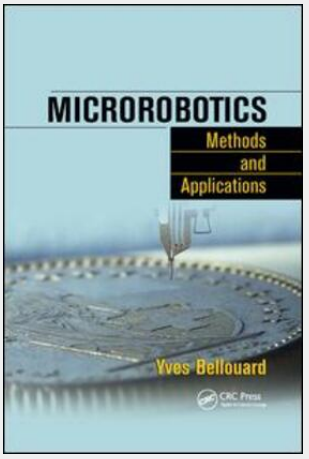
Bellouard

Microrobotics

Methods and Applications

From conception to realization, Microrobotics: Methods and Applications covers all aspects of miniaturized systems that physically interact and manipulate objects at the microscale. It provides a solid understanding of this multidisciplinary field, which combines areas of materials science, mechanical engineering, and applied physics. Requiring no formal prerequisites, the book begins by introducing basic results from the strength of materials, mechanics, and applied physics. After forming this foundation, the author describes various flexure systems, actuators, and sensors as well as fabrication techniques relevant for microrobots. He then explores applications of microrobotics in medicine, materials science, and other areas. Numerous exercises encourage hands-on appreciation of the content and ancillary materials are available on a CD-ROM. Focusing on design-oriented multidisciplinary activities, this text describes how to implement various methods for solving microrobotics problems and designing mechanical systems at the microscale. With a broad overview of the current state of the art from research and industry perspectives, the book envisions the future of microrobotics and explores its potential contributions to technology.



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