



Kinji Asaka, Hidenori Okuzaki (Eds.)

# Soft Actuators

**Materials, Modeling, Applications, and Future Perspectives**

- Facilitates quick learning with the inclusion of the newest technology and information on basic science and practical applications of soft actuators
- Makes generous use of color figures, diagrams, and photographs to provide full descriptions of the mechanism, apparatus, and motion of soft actuators
- Inspires readers with new ideas and encourages their research and development, opening up a new field of applications for the utilization and industrialization of soft actuators

This book is the second edition of Soft Actuators, originally published in 2014, with 12 chapters added to the first edition. The subject of this new edition is current comprehensive research and development of soft actuators, covering interdisciplinary study of materials science, mechanics, electronics, robotics, and bioscience. The book includes contemporary research of actuators based on biomaterials for their potential in future artificial muscle technology. Readers will find detailed and useful information about materials, methods of synthesis, fabrication, and measurements to study soft actuators. Additionally, the topics of materials, modeling, and applications not only promote the further research and development of soft actuators, but bring benefits for utilization and industrialization. This volume makes generous use of color figures, diagrams, and photographs that provide easy-to-understand descriptions of the mechanisms, apparatus, and motions of soft actuators. Also, in this second edition the chapters on modeling, materials design, and device design have been given a wider scope and made easier to comprehend, which will be helpful in practical applications of soft actuators. Readers of this work can acquire the newest technology and information about basic science and practical applications of flexible, lightweight, and noiseless soft actuators, which differ from conventional mechanical engines and electric motors. This new edition of Soft Actuators will inspire readers with fresh ideas and encourage their research and development, thus opening up a new field of applications for the utilization and industrialization of soft actuators.

2nd ed. 2019, X, 740 p. 495 illus., 275 illus. in color.

## Printed book

Hardcover

149,99 € | £129.99 | \$179.99

<sup>[1]</sup>160,49 € (D) | 164,99 € (A) | CHF 177,00

## eBook

117,69 € | £103.50 | \$139.00

<sup>[2]</sup>117,69 € (D) | 117,69 € (A) | CHF 141,50

Available from your library or  
[springer.com/shop](https://www.springer.com/shop)

## MyCopy <sup>[3]</sup>

Printed eBook for just

€ | \$ 24.99

[springer.com/mycopy](https://www.springer.com/mycopy)

Order online at [springer.com](https://www.springer.com) / or for the Americas call (toll free) 1-800-SPRINGER / or email us at: [customerservice@springernature.com](mailto:customerservice@springernature.com). / For outside the Americas call +49 (0) 6221-345-4301 / or email us at: [customerservice@springernature.com](mailto:customerservice@springernature.com).

The first € price and the £ and \$ price are net prices, subject to local VAT. Prices indicated with [1] include VAT for books; the €(D) includes 7% for Germany, the €(A) includes 10% for Austria. Prices indicated with [2] include VAT for electronic products; 19% for Germany, 20% for Austria. All prices exclusive of carriage charges. Prices and other details are subject to change without notice. All errors and omissions excepted. [3] No discount for MyCopy.

