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Titolo	Bioinspired actuators and sensors // Minoru Taya [and three others] [[electronic resource]]
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Descrizione fisica	1 online resource (xiii, 523 pages) : digital, PDF file(s)
Disciplina	610.28/4
Soggetti	Biomedical materials
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Title from publisher's bibliographic system (viewed on 27 Oct 2016).
Nota di bibliografia	Includes bibliographical references and indexes.
Nota di contenuto	Principles of structural organization and functions in biological species -- Sensory and motor systems of the living world -- Synthetic sensing materials and sensors -- Synthetic active materials and actuators -- Bio-inspired designs of sensors, actuators -- Design of autonomous systems.
Sommario/riassunto	From authors renowned in the fields of engineering and biology, this is the first book to integrate sensor and actuator technology with bioinspired design. Beginning with detailed descriptions of actuation and sensing mechanisms in plants and animals, the authors move on to apply these principles to synthetic design, offering in-depth knowledge of the development of state-of-the-art smart materials and devices. All of this is supported with a range of real-world applications, from tactile sensory systems in insects linked with the development of robotic hands, to the structural colour systems in nature used to inspire camouflage technology. Further examples are given of successful designs along with their integrated autonomous systems, such as flying and swimming, unmanned systems, and autonomous zero-energy

building design. With a wide interdisciplinary appeal, this is an ideal resource for any student, practising engineer, or researcher interested in the connection between natural systems and synthetic design.

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