Record Nr. UNINA9910299699103321 Soft Robotics: Transferring Theory to Application / / edited by **Titolo** Alexander Verl, Alin Albu-Schäffer, Oliver Brock, Annika Raatz Pubbl/distr/stampa Berlin, Heidelberg:,: Springer Berlin Heidelberg:,: Imprint: Springer, , 2015 **ISBN** 3-662-44506-9 Edizione [1st ed. 2015.] Descrizione fisica 1 online resource (293 p.) Disciplina 629.892 Soggetti Robotics Automation Control engineering Biomedical engineering Manufactures Robotics and Automation Control and Systems Theory Biomedical Engineering and Bioengineering Manufacturing, Machines, Tools, Processes Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Note generali Description based upon print version of record. Includes bibliographical references at the end of each chapters and Nota di bibliografia index. Sensors and Actuators -- Simulation, Modeling and Control -- Design, Nota di contenuto Materials and Manufacturing -- Soft Robotics Applications. The research areas as well as the knowledge gained for the practical Sommario/riassunto use of robots are growing and expanding beyond manufacturing and industrial automation, making inroads in sectors such as health care and terrain sensing, as well as general assistive systems working in close interaction with humans. In a situation like this, it is necessary for future robot systems to become less stiff and more specialized by taking inspiration from the mechanical compliance and versatility found in natural materials and organisms. At present, a new discipline is

emerging in this area, called »Soft Robotics«. It particularly challenges the traditional thinking of engineers, as the confluence of technologies,

ranging from new materials, sensors, actuators and production

techniques to new design tools, will make it possible to create new systems whose structures are almost completely made of soft materials, which bring about entirely new functions and behaviors, similar in many ways to natural systems. These Proceedings focus on four main topics: • Soft Actuators and Control • Soft Interactions • Soft Robot Assistants: Potential and Challenges • Human-centered »Soft Robotics«.