Record Nr. UNINA9910337658103321 Autore Peraza Hernandez Edwin A Titolo Active Origami [[electronic resource]]: Modeling, Design, and Applications / / by Edwin A. Peraza Hernandez, Darren J. Hartl, Dimitris C. Lagoudas Cham:,: Springer International Publishing:,: Imprint: Springer,, Pubbl/distr/stampa 2019 3-319-91866-4 ISBN Edizione [1st ed. 2019.] 1 online resource (XXI, 464 p. 263 illus., 38 illus. in color.) Descrizione fisica Disciplina 620.0042 Soggetti Engineering design Structural materials Mechanics Mechanics, Applied **Engineering Design** Structural Materials Solid Mechanics Lingua di pubblicazione Inglese Materiale a stampa **Formato** Livello bibliografico Monografia Nota di contenuto Chapter 1.Introduction to Active Origami Structures -- Chapter 2. Kinematics of Origami Structures with Creased Folds -- Chapter 3. Unfolding Polyhedra Method for the Design of Origami Structures with Creased Folds -- Chapter 4. Tuck-Folding Method for the Design of Origami Structures with Creased Folds -- Chapter 5. Kinematics of Origami Structures with Smooth Folds -- Chapter 6.Unfolding Polyhedra Method for the Design of Origami Structures with Smooth Folds -- Chapter 7. Tuck-Folding Method for the Design of Origami Structures with Smooth Folds -- Chapter 8. Structural Mechanics and Design of Active Origami Structures. Sommario/riassunto Origami structures have the ability to be easily fabricated from planar forms, enable the deployment of large structures from small volumes, and are potentially reconfigurable. These characteristics have led to an increased interest in theoretical and computational origami among

engineers from across the world. In this book, the principles of origami.

active materials, and solid mechanics are combined to present a full theory for origami structures. The focus is on origami structures morphed via active material actuation and formed from sheets of finite thickness. The detailed theoretical derivations and examples make this an ideal book for engineers and advanced students who aim to use origami principles to develop new applications in their field.