1. Record Nr. UNISA996453548003316

Titolo	Active Materials / / ed. by Peter Fratzl, Michael Friedman, Karin Krauthausen, Wolfgang Schäffner
Pubbl/distr/stampa	Berlin ; ; Boston : , : De Gruyter, , [2021] ©2022
ISBN	3-11-056206-5
Descrizione fisica	1 online resource (VI, 372 p.)
Collana	De Gruyter STEM
Disciplina	660
Soggetti	SCIENCE / Chemistry / General
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia

Sommario/riassunto

What are active materials? This book aims to introduce and redefine conceptions of matter by considering materials as entities that 'sense' and respond to their environment. By examining the modeling of, the experiments on, and the construction of these materials, and by developing a theory of their structure, their collective activity, and their functionality, this volume identifies and develops a novel scientific approach to active materials. Moreover, essays on the history and philosophy of metallurgy, chemistry, biology, and materials science provide these various approaches to active materials with a historical and cultural context. The interviews with experts from the natural sciences included in this volume develop new understandings of 'active matter' and active materials in relation to a range of research objects and from the perspective of different scientific disciplines, including biology, physics, chemistry, and materials science. These insights are complemented by contributions on the activity of matter and materials from the humanities and the design field. Discusses the mechanisms of active materials and their various conceptualizations in materials science. Redefines conceptions of active materials through interviews with experts from the natural sciences. Contextualizes, historizes, and reflects on different notions of matter/materials and activity through contributions from the humanities. A highly interdisciplinary approach

to a cutting-edge research topic, with contributions from both the sciences and the humanities.