1. Record Nr. UNINA9910845487203321 Autore Choi Andy H. Titolo Hydrogel for Biomedical Applications: 3D/4D Printing, Self-Healing, Microrobots, and Nanogenerators / / by Andy H. Choi, Besim Ben-Singapore:,: Springer Nature Singapore:,: Imprint: Springer,, 2024 Pubbl/distr/stampa **ISBN** 981-9717-30-2 Edizione [1st ed. 2024.] Descrizione fisica 1 online resource (100 pages) Collana Tissue Repair and Reconstruction, , 2731-9199 Disciplina 610.28 Soggetti Biomedical engineering **Biomaterials** Pharmaceutical chemistry Biomedical Engineering and Bioengineering **Biomedical Materials Medicinal Chemistry** Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Introduction -- Hydrogel in Tissue Engineering -- Self-healing Nota di contenuto Hydrogel in Biomedical Applications -- Future perspective and Concluding Remarks. This book highlights the latest clinical research and advancements in Sommario/riassunto 3D (bio)printing and 4D printing using stimulus-responsive hydrogels as well as the concept of self-healing and its amalgamation with 3D printed injectable cell-laden tissue constructs. It also explores the use of metal-free "click" chemistry and enzymes such as horseradish peroxidase, hematin, tyrosinase, and transglutaminase to obtain chemically crosslinked hydrogels and the in vitro and in vivo responses. Lastly, the book briefly examines the future of drug delivery and the potentials offered by microrobotics and self-powered devices based on

triboelectric nanogenerators. This book caters to biomedical

and drug/therapeutic delivery.

researchers and clinical practitioners working in tissue reconstruction