1. Record Nr. UNINA9910380750403321

Titolo	Interpenetrating Polymer Network: Biomedical Applications / / edited by Sougata Jana, Subrata Jana
Pubbl/distr/stampa	Singapore : , : Springer Singapore : , : Imprint : Springer, , 2020
ISBN	981-15-0283-8
Edizione	[1st ed. 2020.]
Descrizione fisica	1 online resource (XII, 337 p. 59 illus., 37 illus. in color.)
Disciplina	547.7
Soggetti	Pharmacology Pharmaceutical chemistry Polymers Biomedical engineering Pharmacology/Toxicology Medicinal Chemistry Polymer Sciences Biomedical Engineering/Biotechnology
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Chapter 1. Interpenetrating Polymer Network in Microparticulate Systems: Drug Delivery and Biomedical Application -- Chapter 2. Interpenetrating Polymer Network (IPN) Nanoparticles for Drug Delivery Applications -- Chapter 3. Fabrication Technology of Chitosan-Based IPN: Drug Delivery Application -- Chapter 4. Alginate based Interpenetrating Network Carriers for Biomedical Applications -- Chapter 5. pH Sensed Interpenetrating Polymeric Network: Application in drug delivery -- Chapter 6. IPN Dendrimers in Drug Delivery -- Chapter 7. BioproteinBased IPN Nanoparticles as Potential Vehicles for Anticancer Drug Delivery: Fabrication Technology -- Chapter 8. Semi-IPN systems for drug delivery -- Chapter 9. IPN Systems for Cancer Therapy -- Chapter 10. Semi-interpenetrating networks based on (meth)acrylate, itaconic acid and poly(vinyl pyrrolidone) hydrogels for biomedical applications -- Chapter 11. Biomedical Applications of Interpenetrating Polymer Network Gels -- Chapter 12. Bio-Nanocomposite IPN for Biomedical Application.-.

Sommario/riassunto

The book focuses on novel interpenetrating polymer network (IPN) /semi-IPN technologies for drug delivery and biomedical applications. The dynamism of the design and development of interpenetrating network polymers is based on their ability to provide free volume for the easy encapsulation of drugs in the three-dimensional network structure obtained by cross-linking two or more polymer networks. Natural polymer-based IPNs can deliver drugs at a controlled rate over an extended period of time, while novel IPNs ensure better mechanical strength and sustained/ controlled drug-delivery properties. This book presents an overview of the use of this technology to fabricate nanomedicine, hydrogels, nanoparticles, and microparticles, thereby unlocking IPN’s potential in the area of drug delivery and biomedical engineering. It also discusses applications of IPN systems in cancer therapy and tissue engineering, and describes the various IPN systems and their wide usage and applications in drug delivery.