1. Record Nr. UNINA9910367753103321 Autore Catauro Michelina **Titolo** Sol-Gel Chemistry Applied to Materials Science MDPI - Multidisciplinary Digital Publishing Institute, 2019 Pubbl/distr/stampa **ISBN** 3-03921-354-7 Descrizione fisica 1 electronic resource (216 p.) Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Sommario/riassunto Sol-gel technology is a contemporary advancement in science that requires taking a multidisciplinary approach with regard to its various applications. This book highlights some applications of the sol-gel technology, including protective coatings, catalysts, piezoelectric devices, wave guides, lenses, high-strength ceramics, superconductors, synthesis of nanoparticles, and insulating materials. In particular, for biotechnological applications, biomolecules or the incorporation of bioactive substances into the sol-gel matrix has been extensively studied and has been a challenge for many researchers. Some sol-gel materials are widely applied in light-emitting diodes, solar cells, sensing, catalysis, integration in photovoltaic devices, and more recently in biosensing, bioimaging, or medical diagnosis; others can be considered excellent drug delivery systems. The goal of an ideal drug delivery system is the prompt delivery of a therapeutic amount of the drug to the proper site in the body, where the desired drug concentration can be maintained. The interactions between drugs and the sol-gel system can affect the release rate. In conclusion, the sol-gel synthesis method offers mixing at the molecular level and is able to

opens new doors not only regarding

improve the chemical homogeneity of the resulting composite. This