1. Record Nr. UNINA9910962336303321

Autore	Menaa Bouzid
Titolo	Bioencapsulation in silica-based nanoporous sol-gel glasses / / Bouzid Menaa, Farid Menaa and Olga Sharts
Pubbl/distr/stampa	New York, : Nova Science Publishers, c2010
ISBN	1-61761-752-0
Edizione	[1st ed.]
Descrizione fisica	1 online resource (84 p.)
Collana	Nanotechnology science and technology
Altri autori (Persone)	MenaaFarid ShartsOlga
Disciplina	612/.01575
Soggetti	Biocolloids Protein folding Silica gel
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references (p. [51]-66) and index.
Nota di contenuto	""BIOENCAPSULATION IN SILICA-BASED NANOPOROUS SOL-GEL GLASSES ""; ""BIOENCAPSULATION IN SILICA-BASED NANOPOROUS SOL-GEL GLASSES ""; ""CONTENTS""; ""PREFACE""; ""ABSTRACT ""; ""1. INTRODUCTION""; ""2. BIOENCAPSULATION VIA SOL-GEL PROCESS IN SILICA-BASED MATERIALS: METHOD, MATERIALS, BIOAPPLICATIONS, AND CHARACTERIZATION TECHNIQUES ""; ""2.1. Protein Bioencapsulation via Sol-Gel Process""; ""2.2. Materials and Bioapplications""; ""2.3. Probing the Silica-Protein Interactions and Protein-Folding""; ""2.3.1. Characterization of the Silica Host Matrix"" ""2.3.2. Characterizing the Protein Folding in Nanoporous Sol-Gel Glasses """"3. PARAMETERS INFLUENCING THE PROTEIN CONFORMATION IN NANOPOROUS SILICA-BASED SOL-GEL GLASSES ""; ""3.1. INTRODUCTION TO THERMODYNAMICSa€? DRIVING FORCES AND INTERACTIONS INFLUENCING THE PROTEIN FOLDING IN SILICA-BASED NANOPOROUS MATERIALS""; ""3.2. The Surface Hydration and Hydrophobicity Influence the Protein Folding in Nanoporous Sol-Gel Glasses ""; ""3.2.1. Hydrophobic Effects on Protein Conformation Induced by Silica Glass Surface Modification with Hydrophobic Organosilanes Precursors "" ""3.2.2. Hydrophobic Effects Induced by the Decrease of siloxane a€? [O-Si-O]- Network Dimension by Glass Surface Modification with

Multiple Hydrophobic Alkyl Groups Attached at the Silicon of Organosilane Precursors"""""3.2.3. Solute Effects and Hofmeister Ions Effects""; ""3.3. STERIC EFFECTS INDUCED BY THE CHOICE OF CROWDED SILANE MODIFIERS IN TMOS- DERIVED SOL-GEL GLASSES THE HOST MATRIX ""; ""3.4. INFLUENCE OF THE PORE SIZE, PORE SHAPE AND SURFACE AREA OF THE SILICA-BASED HOST MATRIX ON PROTEIN FOLDING ""; ""3.5. THERMAL STABILITY OF PROTEINS CONFINED IN THE POROUS HOST MATRIX ""
""4. ENHANCING THE PROTEIN FOLDING BY INTRODUCING AND ASSOCIATING HYDROPHOBIC AND STERIC EFFECTS IN MODIFIED SILICA-BASED POROUS GLASSES """""4.1. INCORPORATING FLUORO-BASED ORGANOSILANES IN TO FORM SUPERHYDROPHOBIC CROWDED ORGANICALLY MODIFIED SILICA BASED HOST MATRICES""; ""4.2. INCORPORATING PHOSPHONATE GROUPS IN HYDROPHOBIC SILICA NETWORK ""; ""5. EMERGING TECHNIQUES FOR A BETTER UNDERSTANDING OF PROTEIN INTERACTIONS AND CONFORMATIONS IN NANOPOROUS SOL-GEL GLASSES ""; ""5.1. IN-SITU MAS NMR""; ""5.2. FLUORO-RAMAN SPECTROSCOPY""; ""CONCLUSION ""; ""REFERENCES""; ""INDEX ""

Sommario/riassunto

In this text, the authors report the recent results on the influence of different parameters on the protein conformation based on the design and the characterization of nanoporous silica-based materials containing different functional groups.