Record Nr. UNINA9910823537503321 Organic solvents [[electronic resource]]: properties, toxicity, and **Titolo** industrial effects / / Ryan E. Carter, editor Pubbl/distr/stampa New York, : Nova Science Publishers, c2011 **ISBN** 1-61122-229-X Edizione [1st ed.] Descrizione fisica 1 online resource (185 p.) Collana Chemical engineering methods and technology Biotechnology in agriculture, industry and medicine Altri autori (Persone) CarterRyan E Disciplina 660/.29482 Soggetti Organic solvents Organic compounds 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 and index. Nota di contenuto Intro -- ORGANIC SOLVENTS: PROPERTIES, TOXICITY, AND INDUSTRIAL EFFECTS -- ORGANIC SOLVENTS: PROPERTIES, TOXICITY, AND INDUSTRIAL EFFECTS -- CONTENTS -- PREFACE -- Chapter 1 CO-SOLVENT APPLICATION FOR BIOLOGICAL SYSTEMS -- ABSTRACT -- 1. INTRODUCTION -- 2. SOLVENT EFFECT OVERVIEW -- APPLICATIONS OF

CO-SOLVENTS -- 1. Enhancing Protein Stability -- B. Protein Biopharmaceuticals -- C. Chromatography -- D. Sub-Zero Temperature Enzymology -- E. Application of the Organic Solvent for NMR Studies --F. Powder Enzyme Reaction in Organic Solvent: Low Water Activity -- G. Protein Precipitation -- H. Virus Inactivation and Processing -- Virus Inactivation -- Virus and Plasmid Processing/Purification --CONCLUSION -- REFERENCES -- Chapter 2 LIPASE-CATALYZED SYNTHESIS OF EDIBLE SURFACTANTS IN MICROAQUEOUS ORGANIC SOLVENTS -- ABSTRACT -- INTRODUCTION -- 1. EQUILIBRIUM CONSTANT FOR LIPASE-CATALYZED CONDENSATION OF SACCHARIDE AND LAURIC ACID IN WATER-MISCIBLE ORGANIC SOLVENTS IN A BATCH REACTION -- 2. CONTINUOUS PRODUCTION OF ACYL .MANNOSES BY IMMOBILIZED LIPASE USING A PACKED-BED REACTOR AND THEIR SURFACTANT PROPERTIES -- 3. SYNTHESES OF LAUROYL PHENOLIC GLYCOSIDES BY IMMOBILIZED LIPASE IN ORGANIC SOLVENT AND THEIR ANTIOXIDATIVE ACTIVITIES -- CONCLUSION -- ACKNOWLEDGMENTS --REFERENCES -- Chapter 3 ANALYSIS OF THE ORGANIC SOLVENT

EFFECT ON THE STRUCTURE OF DEHYDRATED PROTEINS BY ISOTHERMAL CALORIMETRY, DIFFERENTIAL SCANNING CALORIMETRY AND FTIR SPECTROSCOPY -- ABSTRACT -- 1. BACKGROUND AND SIGNIFICANCE -- 2. METHODOLOGY -- 2.1. FTIR Spectroscopy -- 2.2. Isothermal Calorimetry -- 2.3. Differential Scanning Calorimetry -- 2.4. Solubility Control -- 2.5. Water Content of Organic Solvents -- 3. DRIED PROTEINS IN ANHYDROUS ORGANIC SOLVENTS -- 3.1. Choice of Proteins -- 3.2. Choice of Organic Solvents -- 3.3. Solvent Hydrophilicity.

- 3.4. Definition of the System under Study -- 3.5. Analysis and Band Assignment of Protein Infrared Spectra -- 3.6. Interaction Enthalpies of the Dried Proteins with Organic Solvents -- 3.7. Effect of Solvent Hydrophilicity on the Enthalpy and Integral Absorbance Changes -- 3.8. The Dried Proteins in Anhydrous Organic Solvents as Studied by Differential Scanning Calorimetry -- 3.9. Effect of Hydrogen Bond Accepting Ability -- 3.10. Effect of Hydrogen Bond Donating Ability --3.11. Effect of Organic Solvents on the Structure of the Dehydrated Proteins -- ACKNOWLEDGMENTS -- REFERENCES -- Chapter 4 ORGANIC-SOLVENT TOLERANT GRAM-POSITIVE BACTERIA: APPLICATIONS AND MECHANISMS OF TOLERANCE -- ABSTRACT -- 1. INTRODUCTION -- 2. PREDICTING SOLVENT TOXICITY -- 3. ORGANIC-SOLVENT TOLERANCE IN GRAM POSITIVE BACTERIA -- 3.1. Environmental Niches for Isolation of Tolerant Bacteria -- 3.2. Bacterial Mechanisms of Tolerance and Adaptation to Organic Solvents -- 3.2.1. Biodegradation of Toxic Compounds -- 3.2.2. Adaptation by Cell Wall and Membrane Modifications -- 3.2.2.1. Fatty Acid Composition --3.2.2.2. Mycolic Acid Composition -- 3.2.3. Efflux Pumps and other Mechanisms -- CONCLUSIONS -- ACKNOWLEDGMENTS -- REFERENCES -- Chapter 5 TOXICITY OF ORGANIC SOLVENTS AND IONIC LIQUIDS TO LACTIC ACID-PRODUCING MICROBES -- ABSTRACT -- INTRODUCTION -- 1. TOXICITY OF ORGANIC SOLVENTS TO LACTIC ACID-PRODUCING MICROBES -- 2. TOXICITY OF IMIDAZOLIUM-BASED IONIC LIQUIDS ON LACTIC ACID-PRODUCING BACTERIA -- 3. GREENNESS OF IONIC LIQUIDS AS AN ALTERNATIVE SOLVENT -- CONCLUSION -- REFERENCES -- Chapter 6 EFFECT OF HYDROGEN BOND ACCEPTING ORGANIC SOLVENTS ON THE BINDING OF COMPETITIVE INHIBITOR AND STORAGE STABILITY OF -CHYMOTRYPSIN1 -- ABSTRACT -- 1. BACKGROUND AND SIGNIFICANCE.
- 2. BINDING OF THE COMPETITIVE INHIBITOR PROFLAVIN AND THE STORAGE STABILITY OF -CHYMOTRYPSIN IN ORGANIC SOLVENTS -- 2.1. Choice of Organic Solvents -- 2.2. Thermodynamic Activity of Water in Organic Solvents -- 2.3. Binding of Proflavin in Water -- 2.4. Spectra of Proflavin in Water-Organic Mixtures -- 2.5. Binding of Proflavin in Organic Solvents -- 2.6. Enzyme Storage Stability -- 2.7. The State of Hydrogen Bond Network of Water in Hydrogen Bond Accepting Organic Solvents as Studied By FTIR Spectroscopy -- 2.8. Excess Partial Molar Quantities of Water and Organic Solvents -- 2.9. Effect of Organic Solvents on Storage Stability and Binding of Competitive Inhibitor -- REFERENCES -- Chapter 7 REGULARITIES OF ORGANIC SOLVENTS PENETRATION INTO TETRAFLUOROETHYLENE-PROPYLENE COPOLYMER1 -- ABSTRACT -- REFERENCES -- INDEX.