Record Nr. UNINA9910790188403321 **Titolo** Polystyrene [[electronic resource]]: properties, performance, and applications / / James E. Gray, editor Hauppauge, NY,: Nova Science Publishers, c2011 Pubbl/distr/stampa **ISBN** 1-61942-484-3 Descrizione fisica 1 online resource (200 p.) Collana Materials science and technology Altri autori (Persone) GrayJames E <1960-> (James Ehren) Disciplina 668.4/233 Soggetti Polystyrene **Thermoplastics** 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. ""POLYSTYRENE: PROPERTIES, PERFORMANCE AND APPLICATIONS ""; Nota di contenuto ""POLYSTYRENE: PROPERTIES, PERFORMANCE AND APPLICATIONS ""; ""CONTENTS ""; ""PREFACE ""; ""POLYSTYRENE TRIBOLOGICAL PERFORMANCE: PROGRESS IN THE UNDERSTANDING OF POLYMERS ATTRITION DURING CHEMICAL ENGINEERING PROCESSES ""; ""ABSTRACT ""; ""1. INTRODUCTION ""; ""2. EXPERIMENTAL METHODS ""; ""2.1. Description of Attrition Device ""; ""2.2. Specimen Preparation ""; ""2.3. Contact Angles Measurements and Surface Free Energy ""; ""2.4. Atomic Force Microscopy Examinations ""; ""2.5. Infrared Spectroscopy Measurements "" ""2.6. Differential Scanning Calorimetry Measurements """"2.7. Rheological Measurements ""; ""2.8. Gel-Permeation Chromatography (GPC) Measurements ""; ""3. RESULTS AND DISCUSSION ""; ""3.1. Discussion of Rubbing Results ""; ""3.2. Discussion of Attrition Results ""; ""Applied Normal Force Effect ""; ""Hemispheres Velocity Effect ""; ""Polymer Molecular Weight Effect ""; ""3.3. Discussion of Adhesion and Rubbing at the Nanometric Scale "": ""CONCLUSION"": ""ACKNOWLEDGMENT""; ""REFERENCES "" ""BIODEGRADABILITY OF POLYSTYRENE THAT CONTAINS N-BENZYL-4-VINYLPYRIDINIUM CHLORIDE IN THE MAIN CHAIN """"ABSTRACT "": ""INTRODUCTION ""; ""INDISPENSABLE QUALITY REQUIRED FOR BIODEGRADABLE POLYMER ""; ""Quality Required for Excellent

Biodegradability""; ""Quality Required for Test Microbes in Charges of

Biodegradation ""; ""DURABILITY AND BIODEGRADABILITY OF SYNTHETIC POLYMER "": ""PRINCIPAL CONTRIBUTION OF N-BENZYL-4-VINYLPYRIDINIUM CHLORIDE TO BIODEGRADATION OF THE MODIFIED POLYSTYRENE ""; ""Extraordinarily Strong Biodegradability "" ""Powerful Stimulation of Microbes to Degrade the Connected Portion """"Highly Nutritive Worth for Microbes in Charges of Biodegradation ""; ""Proliferation of Bacteria on the Surface of Cross-Linked PBVP(Br) ""; ""Violent Digestion of Cross-Linked PBVP(Br) by Activated Sludge ""; ""Strong Bactericidal Activity of Not-Cross-Linked PBVP(Br) ""; ""Strong Affinity with Microbial Cells That Increases Opportunity of Biodegradation ""; ""Capture of Bacterial Cells by Adhesion on the Surface of Cross-Linked PBVP(Br)""; ""Influence of Chemical Structure on the Ability to Capture Bacterial Cells "" ""Influence of Electrostatic and Hydrophobic Interactions on the Capture of Bacterial Cells """"Strong Hydrophilicity That Assists Biodegradation ""; ""EXPERIMENTAL METHODS ""; ""Materials ""; ""Preparation of Copolymers of Styrene with N-Benzyl-4-Vinylpyridinium Chloride ""; ""Degradation of the Modified Polystyrene by the Treatment with Activated Sludge in Soil ""; ""DEGRADATION OF THE MODIFIED POLYSTYRENE DURING TREATMENT WITH ACTIVATED SLUDGE IN SOIL ""; ""Biodegradation of Pst-co-BVP(CI) In Molar Ratio 1:1 ""; ""Biodegradation of PSt-co-BVP(CI) in Molar Ratio 2:1 "" ""Biodegradation of PSt-co-BVP(CI) in Molar Ratio 3:1 ""