1. Record Nr. UNINA9910141418203321

Titolo	Antioxidant polymers [[electronic resource]] : synthesis, properties, and applications / / edited by Giuseppe Cirilo and Francesca Iemma
Pubbl/distr/stampa	Beverly, MA, : Scrivener Hoboken, N.J., : Wiley, c2012
ISBN	1-280-76816-9 9786613678935 1-118-44551-1 1-118-44544-9 1-118-44548-1
Descrizione fisica	1 online resource (522 p.)
Classificazione	TEC055000
Altri autori (Persone)	CiriloGiuseppe IemmaFrancesca
Disciplina	613.2/86
Soggetti	Antioxidants Polymers Stabilizing agents
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	Antioxidant Polymers: Synthesis, Properties, and Applications; Contents; Preface; List of Contributors; 1. Antioxidants: Introduction; 1.1 The Meaning of Antioxidant; 1.2 The Category of Antioxidants and Introduction of often Used Antioxidants; 1.2.1 BHT; 1.2.2 Quercetin; 1.2.3 BHA; 1.2.4 2-tert-Butylhydroquinone (TBHQ); 1.2.5 Gallic Acid; 1.2.6 Resveratrol; 1.2.7 Luteolin; 1.2.8 Caffeic Acid; 1.2.9 Catechin; 1.3 Antioxidant Evaluation Methods; 1.3.1 DPPH Radical Scavenging Assay; 1.3.2 ABTS Radical Scavenging Activity; 1.3.3 Phosphomolybdenum Assay; 1.3.4 Reducing Power Assay 1.3.5 Total Phenols Assay by Folin-Ciocalteu Reagent1.3.6 Hydroxyl Radical Scavenging Assay; 1.3.7 -carotene-linoleic Acid Assay; 1.3.8 Superoxide Radical Scavenging Assay; 1.3.9 Metal Ion Chelating Assay; 1.3.10 Determination of Total Flavonoid Content; 1.4 Antioxidant and its Mechanisms; 1.4.1 Mechanism of Scavenging Free Radicals; 1.4.2 Mechanism of Metal Chelating Properties; 1.5 Adverse Effects of

Antioxidants; References; 2. Natural Polyphenol and Flavonoid Polymers; 2.1 Introduction; 2.2 Structural Classification of Polyphenols; 2.2.1 Simple Phenolics; 2.2.2 Stilbenes; 2.2.3 Lignin
2.2.4 Flavonoids2.2.5 Tannins; 2.3 Polyphenol Biosynthesis and Function in Plants; 2.3.1 Biosynthesis; 2.3.2 Protective Roles; 2.4 Tannins in Human Nutrition; 2.4.1 Dietary Sources and Intake; 2.4.2 Absorption and Metabolism; 2.5 Antioxidant Activity of Tannins; 2.5.1 Mechanisms; 2.5.2 Structure-activity Relationships; 2.6 Protective Effects of Proanthocyanidins in Human Health; 2.7 Conclusion; Acknowledgements; References; 3. Synthesis and Applications of Polymeric Flavonoids; 3.1 Introduction; 3.2 Polycondensates of Catechin with Aldehydes; 3.3 Enzymatically Polymerized Flavonoids
3.4 Biopolymer-flavonoid Conjugates3.5 Conclusion; References; 4. Antioxidant Polymers: Metal Chelating Agents; 4.1 Introduction; 4.1.1 Antioxidants; 4.1.2 Natural Polymers as Antioxidants; 4.1.3 Chelating Polymers and Heavy Metal Ions; 4.2 Chitin and Chitosan; 4.2.1 Chitin and Chitosan Derivatives; 4.2.2 Chitin and Chitosan as Chelating Agents; 4.3 Alginates; 4.4 Chelation Studies; 4.4.1 Chitosan Derivatives as Chelating Agents; 4.4.2 Alginates as Chelating Agents; 4.5 Conclusions; References; 5. Antioxidant Polymers by Chitosan Modification; 5.1 Introduction; 5.2 Chitosan Characteristics
5.3 Reactive Oxygen Species and Chitosan as Antioxidant5.4 Structure Modifications; 5.4.1 N-Carboxymethyl Chitosan Derivatives; 5.4.2 Quaternary Salts; 5.4.3 Sulphur Derivatives; 5.4.4 Chitosan Containing Phenolic Compounds; 5.4.5 Schiff Bases of Chitosan; 5.5 Conclusion; References; 6. Cellulose and Dextran Antioxidant Polymers for Biomedical Applications; 6.1 Introduction; 6.2 Antioxidant Polymers Cellulose-based; 6.2.1 Cellulose; 6.2.2 Antioxidant Biomaterials Carboxymethylcellulose-based; 6.2.3 Ferulate Lipoate and Tocopherulate Cellulose
6.2.4 Cellulose Hydrogel Containing Trans-ferulic Acid

Sommario/riassunto

Antioxidant Polymers is an exhaustive overview of the recent developments in the field of polymeric materials showing antioxidant properties. This research area has grown rapidly in the last decade because antioxidant polymers have wide industry applications ranging from materials science to biomedical, pharmaceuticals and cosmetics.

2. Record Nr. UNINA9910780044703321

Titolo	Continuum thermomechanics [[electronic resource]] : the art and science of modelling material behaviour / / edited by Gerard A. Maugin, Raymonde Drouot, and Francois Sidoroff
Pubbl/distr/stampa	Dordrecht ; ; Boston, : Kluwer Academic Publishers, c2000
ISBN	1-280-20498-2 9786610204984 0-306-46946-4
Edizione	[1st ed. 2002.]
Descrizione fisica	1 online resource (433 p.)
Collana	Solid mechanics and its applications ; ; v. 76
Altri autori (Persone)	GermainPaul <1920-> MauginG. A <1944-> (Gerard A.) DrouotRaymonde SidoroffFrancois
Disciplina	536/.7
Soggetti	Thermodynamics Continuum mechanics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di contenuto	Double diffusive aspects of the convection in moist-saturated air -- Application of the theory of Cosserat media to the elasto-plastic behaviour of polycrystals -- From Clausius to finite anelasticity, via Bridgman, Eckart and Ziegler -- On viscous fluid flow near a moving crack tip -- Elastoviscoplasticity with aging in aluminium alloys -- The application of the irreversible thermodynamics to the development of constitutive equations -- On micromechanics of martensitic transformation in SMA and TRIP steels -- Modelling of coupled effects of damage by microcracking and friction in closed cracks -- Structural plastic microbuckling and compressive strength of long-fibre composite materials -- A new method of optimisation for composite structures -- Material evolution in plasticity and growth -- Thermoelasticity of second-grade media -- The power of the interior forces in solid mechanics -- A continuum damage model in stress corrosion -- Modelling Wetting Behaviour -- Thermodynamics and phenomenology -- On the thermomechanical modelling of shape

memory alloys -- Thermo-Mechanical Modelling of Nematic Polymers -- Multiscale thermomechanical approaches to SMA behaviour -- Regularization of flutter ill-posedness in fluid-saturated porous media -- A 3D-Numerical Thermomechanical Approach for Materials Cutting -- From Clausius-Duhem and Drucker-Ilyushin inequalities to standard materials -- Constitutive relations involving internal variables based on a micromechanical analysis -- Adiabatic shear banding as an example of viscoplastic flow instability -- On the evaluation of damping in a structure with viscoelastic components -- Standard dissipative systems and stability analysis -- Enriched damage models for continuum failure analyses -- Constitutive laws, relaxation thermodynamics and Lagrange-formalism -- Second-gradient theory: Application to Cahn-Hilliard fluids -- Thermodynamics and duality in finite elastoplasticity -- Thermodynamical description of running discontinuities.

Sommario/riassunto

Contributed by world-renowned specialists on the occasion of Paul Germain's 80th birthday, this unique book reflects the foundational works and the intellectual influence of this author. It presents the realm of modern thermomechanics with its extraordinary wealth of applications to the behaviour of materials, whether solid or fluid. The thirty-one contributions follow an easygoing autobiographical sketch by Paul Germain, and highlight the power and richness of a methodological approach to the phenomenology of many materials. This approach combines harmoniously thermodynamics and continuum theory in order to provide exploitable, thermodynamically admissible models of a large variety of behaviours and phenomena, including those of diffusion, thermoelasticity, viscoplasticity, relaxation, hysteresis, wetting, shape-memory effects, growth, phase transitions, stability, fracture, shocks, machining of materials, microstructured solids, complex fluids, etc. Especially aimed at graduate students, researchers, and engineers in mechanical engineering and materials science, this book also presents the state of the art in an active field of research and opens new horizons in other scientific fields, such as applied mathematics and applied physics, because of the intellectual satisfaction and remarkable efficiency provided by the advocated approach.