1. Record Nr. UNINA9910455564403321

Titolo	Decoherence suppression in quantum systems 2008 [[electronic resource] /] / editors, Mikio Nakahara, Robabeh Rahimi, Akira SaiToh
Pubbl/distr/stampa	Hackensack, N.J., : World Scientific, c2010
ISBN	1-282-76355-5 9786612763557 981-4295-84-1
Descrizione fisica	1 online resource (202 p.)
Collana	Kinki University series on quantum computing, , 1793-7299 ; ; v. 3
Altri autori (Persone)	NakaharaMikio RahimiRobabeh SaiTohAkira
Disciplina	004.1
Soggetti	Quantum computers Electronic books.
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	"This volume contains lecture notes and a paper contributed from speakers of the Symposium on Decoherence Suppression in Quantum Systems held at Oxford Kobe Institute, Japan, from 7th to 11th September 2008."--P. v.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Elementary mathematical framework for open quantum d-level systems : decoherence overview / G. Kimura -- Quantum error correction and fault-tolerant quantum computing / F. Gaitan and R. Li -- Composite pulses as geometric quantum gates / Y. Ota and Y. Kondo -- Quantum wipe effect / A. SaiToh, R. Rahimi, M. Nakahara -- Holonomic quantum gates using isospectral deformation of Ising model / M. Bando ... [et al.].
Sommario/riassunto	This volume provides an overview on the decoherence suppression methods in quantum computing, open quantum systems, quantum error correction and fault-tolerant quantum computing. It also includes concepts in geometric quantum computing by composite pulses. Quantum wipe effect is explained as an approach for suppressing decoherence of the system. A short contribution on the implementation of holonomic quantum gates with NMR (Nuclear Magnetic Resonance) is presented. The lecture notes contributed to this volume are prepared in

	a self-contained manner hence readers with limited knowledge on the topics could understand the discussions by following the sequence of chapters which begin with mathematical frameworks and progress to the most updated outcomes of the fields. The volume will be useful for a broad audience from graduate students to researchers interested in the field.

2. Record Nr. UNINA9910970066303321

Titolo	Healable polymer systems / / edited by Wayne Hayes and Barnaby W. Greenland
Pubbl/distr/stampa	Cambridge, : Royal Society of Chemistry, 2013
ISBN	1-84973-747-9
Edizione	[1st ed.]
Descrizione fisica	1 online resource (167 p.)
Collana	RSC Polymer Chemistry Series ; ; 5
Altri autori (Persone)	HayesWayne GreenlandBarnaby W
Disciplina	620.192
Soggetti	Polymers - Deterioration Polymers - Biodegradation
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Includes index.
Nota di contenuto	Intro -- Contents -- Chapter 1 Healable Polymeric Materials -- 1.1 Introduction -- 1.2 Healable Polymers - Potential Applications -- 1.3 Categorisation of Healable Materials -- 1.4 Healing - Definitions -- 1.5 Measuring Healing -- 1.5.1 Cantilever Beam Tests to Determine Healing -- 1.5.2 Impact Testing -- 1.5.3 Rheological Healing Methods -- 1.5.4 Rheology - Background -- 1.6 Summary -- References -- Chapter 2 Encapsulation-Based Self-Healing Polymers and Composites -- 2.1 Introduction -- 2.2 Microencapsulation -- 2.2.1 In situ Poly (urea-formaldehyde) Encapsulation -- 2.2.2 Interfacial Polymerization -- 2.2.3 Hollow Fiber Encapsulation -- 2.2.4 Microcapsule Characterization -- 2.3 Chemistry of Encapsulated Self-Healing Materials -- 2.3.1 Ring-Opening Metathesis Polymerization -- 2.3.2 Siloxane-Based Healing Systems -- 2.3.3 Radical-Initiated Healing Chemistries -- 2.3.4 Isocyanate-Based Healing Systems -- 2.3.5

Epoxy-Based Healing Systems -- 2.3.6 "Click-Chemistry"-Based Healing Agents -- 2.3.7 Solvent or Plasticizer-Based Healing Chemistries -- 2.3.8 Summary of Encapsulation-Based Self-Healing Materials -- 2.4 Performance and Testing of Microcapsule-Based Self-Healing Materials -- 2.4.1 Fracture Testing -- 2.4.2 Impact/Ballistic Testing -- 2.4.3 Tear Testing -- 2.4.4 Barrier Properties -- 2.4.5 Interfacial Strength -- 2.4.6 Conductivity -- 2.5 Summary and Outlook -- References -- Chapter 3 Reversible Covalent Bond Formation as a Strategy for Healable Polymer Networks -- 3.1 Introduction -- 3.2 A Brief Historical Account -- 3.3 Covalent Adaptable Network (CAN) Design -- 3.3.1 Network Architecture -- 3.3.2 Reversible Covalent Cross-link Type -- 3.4 Reversible Covalent Cross-link Chemistries -- 3.4.1 Trans-X Reactions -- 3.4.2 Radical-Mediated Addition-Fragmentation Reactions -- 3.4.3 Disulfides -- 3.4.4 The Diels-Alder Reaction.
3.4.5 Other Reversible Chemistries -- 3.5 Kinetics and Mechanical Properties -- 3.6 Conclusion and Outlook -- References -- Chapter 4 Healable Supramolecular Polymeric Materials -- 4.1 Introduction -- 4.1.1 Supramolecular Polymer Chemistry: A Concise History -- 4.2 Healable Supramolecular Polymers Utilizing Hydrogen Bonding -- 4.2.1 Supramolecular Polymers Containing Hydrogen Bonding Motifs with Low Association Constants -- 4.2.2 Healable Supramolecular Polymers Utilizing Hydrogen Bonding Interactions -- 4.3 Healable Supramolecular Polymers Utilizing - Stacking Interactions -- 4.4 Healable Supramolecular Nano-composite Materials -- 4.5 Healable Supramolecular Polymers Utilizing Metal-Ligand Interactions -- 4.6 Introduction to Healable Supramolecular Gels -- 4.6.1 Healable Supramolecular Polymeric Gels -- 4.6.2 Healable Nano-composite Gels -- 4.6.3 Healable Molecular Gels -- 4.7 Conclusions and Future Perspectives -- References -- Chapter 5 Thermodynamics of Self-Healing in Polymeric Materials -- 5.1 Introduction -- 5.2 Thermodynamics of Self-Healing -- 5.3 Self-Healing Reactions in Thermoplastic and Thermosetting Polymers -- 5.3.1 Bond Cleavage Reactions in Thermoplastic and Thermosetting Polymers -- 5.3.2 Supramolecular Approaches to Healable Thermoplastic and Thermosetting Polymers -- 5.4 Summary -- References -- Subject Index.

Sommario/riassunto

Polymers are used in many everyday technologies and their degradation due to environmental exposure has lead to great interest in materials which can heal and repair themselves. In order to design new self healing polymers it's important to understand the fundamental healing mechanisms behind the material. Healable Polymer Systems will outline the key concepts and mechanisms underpinning the design and processing of healable polymers, and indicate potential directions for progress in the future development and applications of these fascinating and potentially valuable materials. The book cover