1. Record Nr. UNINA9911004741503321

Titolo	Functional textiles for improved performance, protection and health / / edited by N. Pan and G. Sun
Pubbl/distr/stampa	Cambridge ; ; Philadelphia, : Woodhead, c2011
ISBN	1-61344-359-5 0-85709-287-1
Edizione	[1st edition]
Descrizione fisica	1 online resource (553 p.)
Collana	Woodhead Publishing series in textiles, , 2042-0803 ; ; no. 120
Altri autori (Persone)	SunGang <1956-> PanN (Ning)
Disciplina	677.028
Soggetti	Smart materials Textile fabrics - Technological innovations Biomedical materials
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	Cover; Functional textiles for improved performance, protection and health; Copyright; Contents; Contributor contact details; Woodhead Publishing Series in Textiles; Preface; Part I Functional textiles and clothing for improved performance and protection; 1 Improved textile functionality through surface modifications; 1.1 Introduction; 1.2 Types of surface modification; 1.3 Physical and chemical characterization of surface modifications; 1.4 Applications for functional textiles; 1.5 Future trends; 1.6 References; 2 Antistatic and conductive textiles; 2.1 Introduction 2.2 Principles of antistatic and conductive textiles2.3 The role of antistatic and conductive textiles; 2.4 Types of antistatic and conductive textiles; 2.5 Evaluation of antistatic and conductive textiles; 2.6 Future trends; 2.7 Sources of further information and advice; 2.8 References; 3 Ultraviolet protection of clothing; 3.1 Introduction; 3.2 In vitro and in vivo testing of the UVprotection factor; 3.3 Standards for sun-protective clothing; 3.4 Type and construction of fabric; 3.5 Fabric color, dyes and UV absorbers; 3.6 Effects of environment and fabric use on UV protection factor 3.7 Conclusions and outlook3.8 References; 4 3D body imaging and fit

for functional textiles; 4.1 Introduction; 4.2 3D body imaging - stereovision; 4.3 Surface modeling; 4.4 Virtual dressing; 4.5 Sewability and fit assessment; 4.6 Future trends; 4.7 Acknowledgement; 4.8 References; 5 Flame retardant functional textiles; 5.1 Introduction; 5.2 Factors affecting flammability and thermal behavior of textile fibers and fabrics; 5.3 Types, chemistry and mode of action of flame retardant additives; 5.4 Flame retardation of textile materials; 5.5 Environmental issues related to flame retardants
5.6 Test standards for flame retardant textiles5.7 References; 6 Functional shape memory textiles; 6.1 Introduction; 6.2 Shape memory mechanisms of SMAs; 6.3 Applications of SMAs in textiles; 6.4 Shape memory mechanisms of SMPs; 6.5 Applications of SMPs in textiles; 6.6 Future trends; 6.7 Sources of further information and advice; 6.8 References; 7 Thermo-regulating textiles with phase-change materials; 7.1 Introduction; 7.2 Concept of thermal comfort and clothing for cold environments; 7.3 How PCMs work; 7.4 Thermo-physiological comfort for PCM incorporated textiles
7.5 Different types of PCMs7.6 Incorporation of PCM in textile structure; 7.7 Applications of PCM incorporated textiles; 7.8 Challenges of PCM in textiles; 7.9 Acknowledgement; 7.10 References; 8 Infrared functional textiles; 8.1 Introduction and overview; 8.2 Principles of IR; 8.3 FIR therapy; 8.4 The role of FIR in relation to functional textiles; 8.5 Applications; 8.6 Benefits and limitations; 8.7 Conclusions and future trends; 8.8 Sources of further information; 8.9 Acknowledgements; 8.10 References; 9 Functional smart textiles using stimuli-sensitive polymers; 9.1 Introduction
9.2 Stimuli-sensitive polymers

Sommario/riassunto

The textile industry is increasingly based on ongoing innovation and development of higher performance products, and the field of functional textiles is no exception. This book explores the development of textiles with a wide range of functions, with the aim of improving the performance of the product in terms of the protection and health benefits that it can offer.The book is split into two parts. Part one focuses on functional textiles for improved performance and protection, with chapters reviewing antistatic, flame retardant and infrared functional textiles, among many others. Chap