

1. Record Nr.	UNINA9910786103903321
Titolo	Multidisciplinary know-how for smart-textiles developers // edited by Tunde Kirstein
Pubbl/distr/stampa	Oxford ; ; Philadelphia, : Woodhead Pub., 2013 Cambridge, UK : , : Woodhead Publishing, , 2013
ISBN	0-85709-353-3
Descrizione fisica	1 online resource (xxi, 501 pages) : illustrations (some color)
Collana	Woodhead publishing series in textiles ; ; no. 139
Disciplina	677.0286
Soggetti	Textile industry - Effect of technological innovations on Textile fabrics - Technological innovations Smart materials
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	"The Textile Institute." "ISSN: 2042-0803 (print)." "ISSN: 2042-0811 (online)."
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Cover; Multidisciplinary know-how for smart-textiles developers; Copyright; Contents; Contributor contact details; Woodhead Publishing Series in Textiles; 1 The future of smart-textiles development: new enabling technologies, commercialization and market trends; 1.1 Introduction; 1.2 The technological trade-off between smartness and integration; 1.3 New enabling technologies for smart textiles; 1.4 New approaches in commercialization of smart textiles; 1.5 Future trends; 1.6 Conclusion; 1.7 References; Part I Materials 2 Types and processing of electro-conductive and semiconducting materials for smart textiles2.1 Introduction; 2.2 Electro-conductive and semiconductive materials; 2.3 Electro-conductive materials and their properties; 2.4 Metals; 2.5 Carbon: carbon black (CB), graphite and carbon nanotubes (CNT); 2.6 Intrinsically conductive polymers (ICP); 2.7 Semiconductive materials and their properties; 2.8 Processing electro-conductive and semiconductive materials into textile structures; 2.9 Future trends; 2.10 Sources of further information and advice; 2.11 Notes; 2.12 References 3 Optical fibers for smart photonic textiles3.1 Introduction to photonic

textiles; 3.2 Total internal reflection (TIR) fiber-based photonic textiles; 3.3 Photonic bandgap (PBG) fiber-based photonic textiles; 3.4 Photonic textile manufacturing; 3.5 Reflective properties of photonic bandgap textiles under ambient illumination; 3.6 Animated photonic bandgap textiles using mixing of ambient and emitted light; 3.7 Potential applications of photonic bandgap textiles; 3.8 Conclusion; 3.9 Acknowledgments; 3.10 References; 4 Conductive nanofibres and nanocoatings for smart textiles; 4.1 Introduction 4.2 Conductive nanofibres 4.3 Conductive nanocoating; 4.4 Application of nanotechnology in smart textiles; 4.5 Future trends; 4.6 Sources of further information and advice; 4.7 References; 5 Polymer-based resistive sensors for smart textiles; 5.1 Introduction; 5.2 Mechanical resistive sensors; 5.3 Chemical resistive sensors; 5.4 Temperature resistive sensors; 5.5 Conclusion and future trends; 5.6 References; 6 Soft capacitance fibers for touch-sensitive smart textiles; 6.1 Introduction: overview of capacitive sensing; 6.2 Soft capacitor fibers for electronic textiles 6.3 Electrical characterization of the isolated capacitor fiber 6.4 Capacitor fiber as a one-dimensional distributed touch sensor; 6.5 Fully woven two-dimensional touch pad sensor using one-dimensional array of capacitance fibers; 6.6 Conclusion; 6.7 References; Part II Technologies; 7 Textile fabrication technologies for embedding electronic functions into fibres, yarns and fabrics; 7.1 Introduction; 7.2 Fibre and yarn production processes: natural fibres; 7.3 Fibre and yarn production processes: continuous (man-made) fibres; 7.4 Functionalisation of fibres and yarns 7.5 Fabric production: weaving

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## Sommario/riassunto

Smart-textiles developers draw on diverse fields of knowledge to produce unique materials with enhanced properties and vast potential. Several disciplines outside the traditional textile area are involved in the construction of these smart textiles, and each individual field has its own language, specific terms and approaches. Multidisciplinary know-how for smart-textiles developers provides a filtered knowledge of these areas of expertise, explaining key expressions and demonstrating their relevance to the smart-textiles field. Following an introduction to the new enabling technologies

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