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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

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
