

Shape Memory Polymers and Textiles

Shape memory polymers (SMPs) are smart materials that, as a result of an external stimulus such as temperature, can change from a temporary deformed shape back to an original shape. SMPs are finding an increasing use in such areas as clothing where they respond dynamically to changes in heat and moisture levels, ensuring greater comfort for the wearer. Shape memory polymers and textiles provides an authoritative and comprehensive review of these important new materials and their applications. After an introductory chapter on the concept and definition of shape memory materials, the book reviews methods for synthesising, characterising and modelling SMPs. It goes on to consider the properties of particular materials such as shape memory polyurethane and environmentally-sensitive polymer gels. The book concludes by assessing potential applications such as wrinkle-free fabrics and smart fabrics providing improved protection and comfort for the wearer. Shape memory polymers and textiles is a valuable guide to R&D staff in such areas as textile apparel in developing a new generation of smart textiles and other products.



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