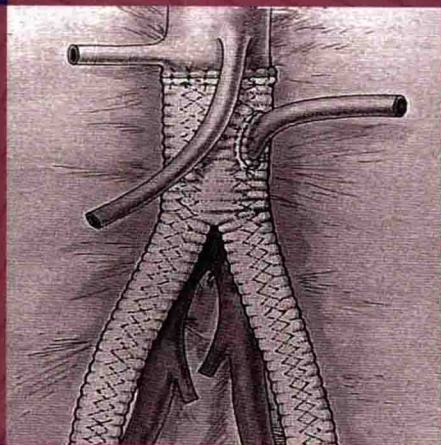


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Medical and healthcare textiles

Edited by S. C. Anand, J. F. Kennedy,
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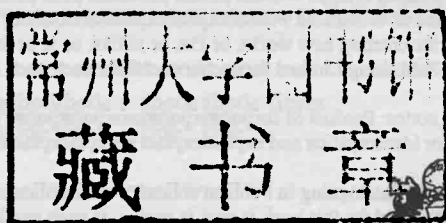
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The Textile Institute is a unique organisation in textiles, clothing and footwear. Incorporated in England by a Royal Charter granted in 1925, the Institute has individual and corporate members in over 90 countries. The aim of the Institute is to facilitate learning, recognise achievement, reward excellence and disseminate information within the global textiles, clothing and footwear industries.

Historically, The Textile Institute has published books of interest to its members and the textile industry. To maintain this policy, the Institute has entered into partnership with Woodhead Publishing Limited to ensure that Institute members and the textile industry continue to have access to high calibre titles on textile science and technology.

Most Woodhead titles on textiles are now published in collaboration with The Textile Institute. Through this arrangement, the Institute provides an Editorial Board which advises Woodhead on appropriate titles for future publication and suggests possible editors and authors for these books. Each book published under this arrangement carries the Institute's logo.

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PREFACE

Healthcare and medical textiles play a significant role within the technical textiles sector. The increased awareness of the need to enhance the quality of life of people has significantly contributed to the high consumption and sustained growth of medical textiles over the past decade. The importance of medical textiles is reflected in the fact that it already accounts for over 10% of the technical textiles market. It is interesting to note that the consumption of medical textiles in countries like India and China has grown remarkably in the recent past and is expected to grow significantly in Africa and Middle East in the next decade. There is a considerable market potential for advanced wound dressings with a forecast annual growth of between 10% and 15% in 2012. A number of medical textiles products that include wound dressings and bandages are now classified as 'medical devices' by European legislation with the need to carry CE marking. This indicates their importance and the fact that they occupy a unique position within medicine and surgery. As an example, compression therapy using compression bandages is considered as the 'gold standard' for managing venous ulceration. Until now there has been no alternative medication or surgical procedure to cure the disease.

The University of Bolton has gained worldwide recognition in medical textiles research, product development and knowledge transfer. With regard to knowledge transfer activities, the University is unique in organising international conferences focusing only on healthcare and medical textiles as well as publishing interdisciplinary state-of-the art books exclusively for medical professionals, medical device manufacturers, textile scientists and researchers. The University has so far hosted international MEDTEX conferences in 1996, 1999, 2003 and 2007 at Bolton and joint international conferences (FiberMed) in collaboration with Tampere University of Technology in Finland in 2000 and 2006. In the past books such as *Developments in medical textiles*, *Medical textiles 96*, *Medical textiles 99*, *Medical textiles and biomaterials for healthcare* and *Advanced textiles for wound care*, published with Woodhead Publishing Limited, have attracted a great deal of attention from readers.

This book, *Medical and healthcare textiles*, comprises of a selection of papers presented and discussed during MEDTEX 07. There are eight parts to the book, each of them containing an introductory overview. Part I contains fifteen papers and addresses the risk of infection, cross-infection and infection control. The application of textile materials and products to prevent and control infection is extensively discussed. Six papers in Part II demonstrate the significance of textile products in healthcare and hygiene applications for use not only in hospitals but also in other environments where hygiene is essential. Advanced wound dressings such as drug delivery dressings and odour-adsorption dressings are critically discussed in Part III which also comprises six papers. Part IV is divided into seven papers and highlights multilayer and single-layer compression therapy for venous leg ulcer patients. Recent developments and application of hi-tech implantable medical devices are discussed in the seven papers which constitute Part V. Part VI consists of seven papers which emphasise the role of textiles in medical devices in various applications including dentistry and oncology. The integration of novel sensors in textile products for the application of wearable health monitoring products and research related to smart materials are discussed in Part VII

which is made up of 6 papers. A special paper in Part VIII describes the role of the Drug Tariff regulatory body in the UK as well as the recent changes affecting the medical devices market.

The editors are deeply indebted to all the authors in this publication. Their contributions are invaluable for the further development of the medical textiles sector around the world. We are grateful to all the companies who sponsored and supported MEDTEX 07. The assistance provided by Mrs Anita Taylor during the preparation of the book is gratefully acknowledged. Last, but not the least, we are thankful to Woodhead Publishing Limited in Cambridge for their continued support over a number of years in publishing specialist books relating to medical textiles.

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