

Recycling Textile and Plastic Waste

edited by
A Richard Horrocks



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Bolton Institute



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PREFACE

The current interest in the environment is a consequence of a number of individual factors which have not only become more understood and quantifiable but have been recognised as having synergistic effects upon the biosphere and its ability to sustain life. Of particular relevance are the relationships between the depletion of ozone in the upper atmosphere and the increased use of chlorine and fluorine-containing compounds (CFCs), the increased release of carbon dioxide into the atmosphere and its affect on climate, the rapidly increasing world population and its consequences on other species and their ability to survive and, of course, the impact of modern technology which is able to consume greater resources, to produce large quantities of waste and generate consumer products which may have very short useful lifetimes and be difficult to recover and recycle from waste streams. Each of these interactions has major consequences for the textile and related industries including the plastic producing sectors whether from the point of view of the ability to sustain production of natural raw materials (eg cotton, wool, wood pulp, etc.), the need to have economically and environmentally efficient processing sectors or the requirement that products must be designed with recovery and recyclability in mind.

During April 1995 at Bolton, UK the first major and recent conference on the environmental aspects of the textile and related industries was held to examine and discuss the current position of textile and related plastics wastes. The conference, entitled "Wealth from Waste in Textiles," was organised jointly by **Bolton Institute** and the **British Textile Technology Group** with support from the Textile Institute and the Department of Trade and Industry. The two day conference attracted over 130 delegates from across Europe in the main, with some delegates travelling from the USA and the Far East. Almost thirty papers were presented which covered the general problems of waste production and its minimisation to the more specialised problems facing particular processors of virgin and waste raw materials as well as textile finishers and the advances made in effluent reduction.

This text presents nineteen edited papers which together give a picture of the challenges facing the textile and plastics industries. Both must increasingly be able to demonstrate environmentally acceptable practices while working within a framework of economic viability. Thus they must be able to make products which consumers will buy based on both price and ecological factors. The papers selected will initially overview the magnitude and consequences of excessive waste production, then proceed to discuss waste minimisation strategies and practices, focus on selected areas where recent scientific and technological advances have been made and finally set the problems within the context of current public perceptions, politics and regulations. It is hoped that, although the nineteen papers are not meant to provide a completely comprehensive treatment of all aspects of textile and plastics waste problems and challenges, they will present a series of snapshots which create an overall picture of the current status of waste minimisation, waste recovery and waste recycling across the respective sectors.

A Richard Horrocks
Bolton Institute, Bolton,

January 1996

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This edited text could not have been produced without the contributions from each of the respective authors to whom I am grateful for generating the basic manuscripts. However, the creation of the manuscripts required the Ecotextile conference in the first place which took place at Bolton in the Bolton Moat House on 11th and 12th April 1995. The major organisation of the conference, "Wealth from Waste in Textiles," was undertaken by Christine Wilkinson and Dinah Wharton of the British Textile Technology Group, Leeds and their input in this respect and their contribution to the success of the event must be acknowledged.

The preparation of the original conference texts and the redrafting of each paper into the current form has required considerable efforts from my colleagues in the Research Office at Bolton Institute. I would like to thank Lorna Hollingum for her work prior to the conference in liaising with authors and ensuring that manuscripts arrived in time for the conference and also acknowledge the work of Diana Page for her painstaking efforts in word processing the edited manuscripts to the standards necessary for their formal publication.

LIST OF CONTRIBUTORS

Mr Brian Burdett, BTTG, Shirley House, Wilmslow Road, Didsbury, Manchester

Mr Jim Cunliffe, Bolton MBC, Milton House, Wellington Street, Bolton, Lancs

Mr Allan Delves, Du Pont Nylon, Ermin Street, Brockworth, Gloucester, Glos

Professor Subhas Ghosh, Institute of Textile Technology, Charlottesville, VA 22902, USA

Mr Barry Hazel, Textile Finishers Association, Reedham House, 31 King Street West, Manchester

Dr Heinz Herbst, Ciba Additives GmbH, Nibelungstrasse 440, D-64686, Lautertal, Germany

Professor A Richard Horrocks, Bolton Institute, Deane Road, Bolton, Lancs

Mr Tony Horrocks, Norplas, Norton House, Stowupland Road, Stowmarket, Suffolk

Mr Clive Jeanes OBE, Milliken Industrials Ltd., Gidlow Lane, Wigan, Lancs

Mr Simon Kent, Parkland Manufacturing Co., Meltham Road, Huddersfield, W. Yorks

Dipl Ing Ferdinand Leifeld, Trützscher GmbH and Co. KG, Duenstrasse 82-92, D-W4050 Munchen Gladbach 3, Germany

Mr Brian McCarthy, BTTG, Shirley House, Wilmslow Road, Didsbury, Manchester

Mr Nasim Minhas, Haroon Nasim Textile Mills Ltd., Al Faisal Place, Shahrah-e-Quaid-e-Azam, Lahore, Pakistan

Mr Nello Pasquini, Montell Polyolefins, Woluwedal 24, 1932 Zaventem, Belgium

Mr Andrew Simpson, Wellhouse Wire Products, Ravenscroft Way, Barnoldswick, Colne, Lancs

Mr Alfred Watzl, Fleissner GmbH, Wolfsgartenstr 6, 6 3329, Egelbach, Germany

Mr Ian Wolstenholme, BASF plc, Willow Court, 34 Thermaston Lane, Leicester, Leics

Mr Andrew Wood, EVC Components Ltd, Chester Road, Helsby, Cheshire

Dr Alan K Wood, Material Science Centre, UMIST & University of Manchester, Grosvenor Street, Manchester

