

Preface

In honour of Ian Ward on his 75th birthday



Professor Ian Ward, whose 75th birthday was in April 2003, is one of the outstanding polymer physicists of our time. His significant contributions to the subject not only extend over nearly fifty years, but also involve both industry and academia. In his several roles as innovative scientist, supervisor, colleague, administrator, committee member, author, editor, speaker and friend, he has made a quite exceptional impact on the field. The many contributions to this Special Issue to mark Ian's 75th birthday, stemming from across such interactions, testify to this wide and notable influence.

Ian's involvement with polymers began when, after completing his doctorate in Physics at Oxford, he joined ICI Fibres Division in 1954 with special responsibility for infrared spectroscopy and nuclear magnetic resonance. After a year at Brown University, USA, he was appointed Head of Basic Physics at ICI Fibres in 1962 and an ICI Associate in January 1965. The following year he returned to academe to work with Professor F.C. Frank at the University of Bristol, in parallel with Andrew Keller, to broaden the scope of the polymer activity from crystallization studies into mechanical properties.

It was at Bristol that his Group showed, for the first time, that the draw ratio of linear polyethylene could be increased indefinitely, unlike poly(ethylene terephthalate) which has a

natural draw ratio, increasing longitudinal modulus all the while. The search for practical means of producing tough, high-modulus oriented polyethylenes, became one of several themes to characterize Ian's research after moving to Leeds, in 1970, to take a Chair in Physics. In particular, he pioneered the melt-spinning route to high performance polyethylene fibres and, in more recent times, used these to introduce, then develop, hot compaction of advanced polyethylene and polypropylene materials for commercial production.

The importance of Ian Ward's work has been recognized by numerous honours and awards: the A.A. Griffith Silver (1982) and Swinburne (1988) Medals of the Institute of Materials, the S.G. Smith Memorial Medal of the Textile Institute (1984), The Charles Vernon Boys Prize of the Institute of Physics (1993), Fellowship of the Royal Society (1983), the Honorary Degree of Doctor of Science from the University of Bradford in 1994.

In parallel with his distinguished research career, Ian has contributed to polymer science in other, major, ways. His renowned textbook on Mechanical Properties of Solid Polymers has provided an intellectual framework to a complex subject for many. Now in its third edition (the last with D.W. Hadley), the story goes that it has been so popular that university libraries around the world could not always keep

sufficient copies in stock. Ian was a founder member of the British Polymer Physics Group in 1964, serving as Secretary to 1971 then Chairman until 1975. Now the Polymer Physics Group of the Institute of Physics and The Royal Society of Chemistry, its Biennial Meetings have become the principal UK forum for polymer physics. He was also President of the British Society of Rheology from 1984 to 1986. Beyond the UK and eager to promote pan-European activity, Ian was Chairman of the Macromolecular Board of the European Physical Society from 1976 to 1981. Editor of *Polymer* from 1974 until 2002 and now Honorary Editor, Ian has also been Assistant Editor of the Journal of Macromolecular Science-Physics since 1966, and has served on the Editorial Boards of four other leading journals. His Joint Editorship of the Cambridge Solid State Science Series has brought forth a succession of well-known monographs from leading workers on salient aspects of polymer physics.

Of special significance was Ian's appointment as first Director of the Interdisciplinary Research Centre in Polymer Science and Technology, IRC, created in 1989 at the Universities of Bradford, Durham and Leeds. In this post,

Ian saw his role as central to promoting interactions in and beyond the UK, with industry and universities, resulting in collaborations which became much more than the sum of their parts. The contributions to this volume come from distinguished colleagues who have benefited in their various ways from involvement with Ian: at the IRC, from his interactions over the years with industry and academe, from former students going back to Ian's early career. All are offered in appreciation of Ian Ward's outstanding contributions to Polymer Science which have continued for as long as most of us can remember and show no signs of ceasing.

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