

Catalogue of the papers and correspondence of

Andrew Keller FRS

(1925-1999)

VOLUME I

Introduction

Section A: Biographical

Section B: University of Bristol

Section C: Research

Section D: Publications

Section E: Lectures

By Timothy E. Powell and Peter Harper

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GENERAL INTRODUCTION

PROVENANCE

The papers were received from Bristol University Library in 2003.

OUTLINE OF THE CAREER OF ANDREW KELLER

Andras (anglicised as Andrew) Keller was born in Budapest, Hungary on 22 August 1925. He attended the University of Budapest, graduating B.Sc. in Chemistry in 1947, despite interruptions to his studies during the war. He went on to research under F. Körösy the volatilization of copper connected with formation of volatile and unstable cuprous formate. He had completed his Ph.D. thesis and was awaiting his oral examination when in 1948 he left Hungary for the UK, largely prompted by the deteriorating political situation.

In Britain Keller was appointed a Technical Officer in the Polymer Division of the Research Department ICI Dyestuffs Division. He served here to 1955, working on polymer characterisation, before joining the Department of Physics of the University of Bristol as a Research Assistant, supported by the Ministry of Supply (later Ministry of Aviation), initially working under F.C. Frank. Keller was subsequently appointed Lecturer in 1963, Reader 1965 and Research Professor in Polymers in 1969. He retired in 1991 and was made Professor Emeritus. Keller also held a number of Visiting Professorships in the USA, including at Case Western Reserve University and the W.W. Clyde Visiting Professorship at the University of Utah. In the late 1990s Keller was an honorary Professor Associate in the Department of Materials Engineering at Brunel University.

Keller's research from the early 1950s was in the area of polymer crystallization. Using a variety of scientific techniques in his investigations, he pioneered the elucidation of the microstructure of crystallizing polymers. Keller's most significant scientific achievement was his 1957 hypothesis that polymer crystals were formed by long molecules folding back on themselves in a process of 'chain folding'. This hypothesis was supported by Keller's experimental work, initially with polyethylene and later with polymers. The concept of chain folding has proved invaluable in understanding the physical and chemical properties of crystalline polymers and has opened up new possibilities for research, both academically and commercially. As A.H. Windle, Keller's Royal Society memorialist writes,

'In many ways Keller's observations of beautifully organized chain-folded crystals launched polymer physics'. Keller went on to develop this work with investigations of the mechanical properties of crystallizing polymers. In addition to his own pioneering research work, Keller built up a large and successful polymer research group at Bristol, building significant academic and industrial collaborations in Britain and internationally.

Keller was elected to the Fellowship of the Royal Society in 1972 (Rumford Medal 1994). Among the other honours he was accorded were the High Polymer Prize of the American Physical Society (1964), the Swinburne Medal of the Plastics and Rubber Institute (1975), and the Max Born Medal of the Institute of Physics and German Physical Society. In 1998 Keller was elected an External Member of the Hungarian Academy of Science.

He died on 7 February 1999.

For further information on the life and work of Keller see 'Andrew Keller (1925-1999)', by A.H. Windle, *Biographical Memoirs of Fellows of the Royal Society* vol 47 (2001) pp 293-310.

DESCRIPTION OF THE COLLECTION

Section A, Biographical, includes obituaries, a copy of the Royal Society Biographical Memoir and a number of biographical accounts. There is some documentation of Keller's career, honours and awards, including his Hungarian Ph.D. thesis, completed but never submitted, his career at Bristol and his election to the Fellowship of the Royal Society in 1972. There are also diaries 1983-1992, miscellaneous biographical material and biographical photographs featuring Keller at a variety of occasions.

Section B, University of Bristol, comprises general university correspondence and papers, and material relating to the Department of Physics. University material is principally correspondence with Vice-Chancellors, Registrars and other officials 1959-1991. Departmental material includes correspondence with Directors and other senior members of the Laboratory, material relating to the conduct of research including accommodation, staffing, equipment and supplies, and general planning and administration of research activity. There is also teaching material in the form of lecture notes, mostly undated, and of papers for teaching M.Sc. physics courses. The section also includes an extended sequence of correspondence and papers 1966-1991 relating to researchers and prospective researchers in Keller's laboratory.

Section C, Research, offers comprehensive documentation of Keller's work and research, from the 1940s in Hungary to his very latest studies in the late 1990s. It is divided into six sequences as follows: notebooks, early research notes, research topics, research colleagues, grant applications and reports, and material relating to patents.

The notebooks include exercise books used for student notes (chiefly if not wholly undergraduate) and mathematical calculations in Hungary in the 1940s. Nearly all the notes are in Hungarian, with a very few pieces in English or German, notebooks used by Keller at ICI and Bristol from 1949 to 1969, including work by research collaborators, and a series of jotters, mostly undated. The early research notes are manuscript and duplicated typescript notes and calculations dating from the 1940s to 1951 and mostly in Hungarian. Documentation of research topics comprises calculations, notes, drafts of papers and lectures, graphs and diagrams and correspondence found in Keller's folders and envelopes, presented in alphabetical order by title of subject - including significant documentation of topics such as collagen, flow orientation, PVC and polyethylene. Much of the material is undated but most of the dated items are of the 1970s and 1980s. Reflecting the highly collaborative nature of Keller's work, it includes a significant proportion of material in hands other than Keller's. This aspect of Keller's research work is the organising principle behind the research colleagues material. It presents reports and dissertations, calculations, notes and data organised by Keller by named research collaborator and includes over forty members of Keller's research team, visiting researchers and departmental colleagues.

Grant applications and reports are arranged in an alphabetical sequence and span the period 1965-1999. The material illustrates the great variety of funding bodies supporting Keller and his research group. The largest bodies of material relate to grants awarded by the Science Research Council and its successor the Science and Engineering Research Council. Other funders represented include BP, ICI and the US Army and Air Force. The section concludes with a little material relating to patents taken out by Keller and colleagues.

Section D, Publications, includes drafts covering the period from 1957, with the latest item being a paper submitted to *Macromolecules* in 1998. However, although representing a far from negligible proportion of Keller's published papers, the documentation does not cover the majority of his voluminous output. There is also editorial correspondence and papers, reflecting Keller's involvement with a wide range of journals in general science, physics and polymer science. There is especially good coverage of Keller's service on the editorial boards of the *Journal of Materials Science* 1965-1997 and the *Journal of Polymer Science* 1966-1999. The section also presents a sequence of offprints of the bulk of Keller's publications 1948-1998.

Section E, Lectures, presents the contents of Keller's lecture folders. Although most of the folders bore an inscription giving occasion, date and topic, few had all three. The material has therefore been divided into separate sequences of lectures: Chronological, Alphabetical by topic and Alphabetical by occasion. The bulk of the material is transparencies used as illustrations for lectures and talks, but there are also some notes for lectures, occasionally a script, and lists of transparencies and slides. Much of this material is undated but the bulk appears to be of the 1970s, 1980s and 1990s. There are also untitled notes including a numbered sequence possibly for a lecture course at the University of Akron in the early 1990s.

Section F, Visits and conferences, documents Keller's visits made and conferences attended 1955-1998. Keller travelled widely abroad. He made frequent visits to the USA, particularly in connection with Gordon Research Conferences, and visits to the University of Akron and the General Tire & Rubber Co., Akron, Ohio and to Case Western Reserve University, Cleveland, Ohio. Other regular commitments included Europhysics Conferences on Macromolecular Physics, IUPAC Symposia on Macromolecules and visits to the Netherlands (DSM Research and the University of Groningen). Other destinations visited on a number of occasions included Germany, Hungary, China and Japan. In the UK Keller was a regular participant and speaker at meetings of, for example, the Polymer Physics Group, the Institute of Physics and the Royal Society, some of which he helped organise. Of particular note is the full documentation of the Chemical Society Faraday Discussion on Organization of Macromolecules in the Condensed Phase, held in Cambridge in September 1979. Keller was an organiser, helped prepare the proceedings for publication and made an important contribution in the 'chain folding' debate.

Section G, Societies, organisations and consultancies, documents Keller's involvement as member, officer and/or consultant with 50 UK, overseas and international bodies 1963-1999. The best documented of these are the Chemical Society (chiefly relating to Keller's service on the Chemical Society Faraday Division Organising Committee for the 1979 discussion meeting on Organization of Macromolecules in the Condensed Phase); the Decrypo project (Structure DEvelopment during solidification in the processing of CRYstalline Polymers) funded by the European Commission 1995-1998; Solid State Commission of the International Union of Pure and Applied Physics (Keller was elected a member of the Commission at IUPAP's 1972 General Assembly); and the Polymer Physics Group from discussions about its formation in 1963 to 1991. Keller chaired the Group 1976-1981. There is also material relating to the Macro Group UK, a joint group of the Royal Society of Chemistry and Society of Chemical Industry.

Section H, Correspondence, is the largest in the collection. The bulk of the correspondence is presented as a chronological sequence 1966-1999, following Keller's arrangement of his correspondence files by year and alphabetically within the year. However, within this sequence a number of years are missing in whole (1980-1983) or part (1970, 1971). Correspondence for 1972, found late, is presented as a separate sequence. There is also some miscellaneous correspondence found loose, 1955-1998. The correspondence is remarkably comprehensive; letters cover a wide range of Keller's activities as a research scientist including some represented elsewhere in the catalogue such as lectures, publications and visits and conferences, as well as plans for and progress of research etc. Correspondents include Bristol colleagues (such as F.C. Frank and D.M. Sadler) and former members of Keller's research group (such as D.C. Bassett, M. Hikoska, C. Ramesh, S. Rastogi and I.M. Ward); colleagues and collaborators elsewhere in the UK (G. Allen, M.J. Bevis, A. Charlesby, S.F. Edwards, P.J. Hendra, B.R. Jennings and A.H. Windle) and overseas (E. Baer, P.G. de Gennes, E.W. Fischer, P.H., Geil, J.D. Hoffman, R. Koningsveld, A.J. Kovacs, P.J. Lemstra, B. Lotz, A. Peterlin, J.J. Point and B. Wunderlich); and organisations and institutions with which Keller was connected, including BP, DSM Research, Du Pont and ICI.

Section J, References and recommendations, presents a number of discrete sequences of references and recommendations made by Keller in respect of appointments, promotions, grant applications, honours and prizes.

Section K, Non-textual material, is arranged by media type. It is chiefly photographic material - photographs, slides and negatives - relating to Keller's research, although many were also used as illustrative material for lectures and publications. The videotapes are particularly significant. They include videos of an interview of Keller for the University of Bristol Department of Continuing Education, conducted after Keller's retirement in 1991, in which he discusses his polymer work at Bristol, and two videotapes of the proceedings of the Polymer Conference held at Bristol in April 1992 to mark Keller's retirement. There is also a series of videos recording Keller's course on Polymer Morphology given at the Institute of Polymer Science, University of Akron, USA, January-March 1993. The section concludes with a few specimens and artefacts.

There is also an appendix listing Keller's medals, certificates and plaques held by Bristol University of Library, and an index of correspondents.

ACKNOWLEDGEMENTS

We are grateful to the Institute of Physics (Dr Alun Jones), the Polymer Physics Group and the Macro Group UK (Professor G.R. Davies), and to a number of Keller's scientific colleagues for financial contributions towards the work on the papers of Andrew Keller. We should also like to thank Dr Tamás Székely, University of Bath, for his assistance with Hungarian language material.

Timothy E. Powell
Peter Harper
Bath, March 2004

SECTION A **BIOGRAPHICAL, A.1-A.94** **1948-2001**

| | |
|-----------|----------------------------------|
| A.1, A.2 | OBITUARIES AND MEMOIR |
| A.3-A.9 | BIOGRAPHICAL AND BIBLIOGRAPHICAL |
| A.10-A.39 | CAREER, HONOURS AND AWARDS |
| A.40-A.47 | DIARIES |
| A.48-A.52 | MISCELLANEOUS BIOGRAPHICAL ITEMS |
| A.53-A.94 | PHOTOGRAPHS |

A.1, A.2 OBITUARIES AND MEMOIR 1999, 2001

A.1 Obituaries: 1999

University of Bristol Newsletter, 11 March 1999

Independent, 29 March 1999. By John D. Hoffman

A.2 Biographical memoir of Keller by A.H. Windle, 2001
Biographical Memoirs of Fellows of the Royal Society, vol
47 (2001), 295-310

Photocopy.

A.3-A.9 BIOGRAPHICAL AND BIBLIOGRAPHICAL 1983-1998, n.d.

A.3 Curricula vitae N.d.

A.4 Entries for biographical directories 1998

A.5 Short autobiographical notes by Keller N.d.

A.6 Profile of Keller in publication of the Society of Polymer 1983
Science, Japan

A.7 Profile of Keller for *Polymer News* 1985

A.7A 'Physics of Materials' by R.W. Cahn 1995

Photocopy of chapter by Cahn from *Twentieth-Century
Physics*, vol.3. ed Pais, Brown & Pippard.

Includes references to Keller's work.

A.8, A.9 Publications lists N.d

2 folders.

Biographical, A.1-A.94

| A.10-A.39 | CAREER, HONOURS AND AWARDS | 1948-1999 |
|------------|---|-----------|
| A.10 | Ph.D thesis 'Temperature-dependent decay of copper and silver salts of fatty acids', Budapest, 10 March 1948. 37pp typescript carbon. In Hungarian. | 1948 |
| A.11 | Letter from Keller to Mr Hallward, Physical Chemical Research Department, Imperial Chemical Industries, Dyestuff Division, Blackley, Manchester <i>re</i> employment, 3 April 1948 Typescript carbon. Keller's address is given as [c/o] George Hillier, 30 Brondesbury Park, London N.W.6. | 1948 |
| A.12 | Letter from Registrar, University of Bristol, to Keller <i>re</i> his appointment at Bristol from 1 March 1955, 11 December 1954 | 1954 |
| A.13-A.16 | 'Past letters Job offers' Contents of envelope so inscribed divided into four for ease of reference: correspondence <i>re</i> offers of employment in the UK and USA, research and visits. | 1962-1969 |
| A.17 | High Polymer Physics Prize of the American Physical Society Correspondence, certificate, printed material. | 1964 |
| A.18, A.19 | Contents of folder divided into two for ease of reference: correspondence and papers <i>re</i> Visiting Professorship at Case Western Reserve University, Cleveland, Ohio and/or possible permanent relocation to the USA Includes correspondence with American Embassy in London and Immigration Service. | 1968 |

Biographical, A.1-A.94

- | | | |
|------------|--|-----------|
| A.20, A.21 | Correspondence <i>re</i> National Science Foundation Senior Scientist Fellowship to be held at Rensselaer Polytechnic Institute, Troy, New York, USA 2 folders. In the end Keller was not able to take up the Fellowship because of his acceptance of the offer of the Visiting Professorship at Case Western Reserve. | 1968-1969 |
| A.22 | Materials Science Club Prize Certificate and programme of meeting at which the award was presented. | 1969 |
| A.22A | Inaugural lecture as Research Professor in Polymers 15pp typescript + figures and captions. Keller was appointed Professor in 1969. He lectured on 'Macromolecules as a field for research and education'. | 1970 |
| A.23-A.26 | Election to the Fellowship of the Royal Society Letters of congratulation. Unindexed. 4 folders | 1972 |
| A.27 | Visiting Professorship, Case Western Reserve University Correspondence <i>re</i> invitation. | 1973 |
| A.28 | Swinburne Gold Medal of the Plastics Institute Correspondence <i>re</i> award and address. | 1974 |
| A.29 | W.W. Clyde Visiting Professorship, University of Utah Letter <i>re</i> arrangements, menu and list of guests for luncheon honouring Keller. | 1983 |

Biographical, A.1-A.94

- | | | |
|-------|---|-----------|
| A.30 | Max Born Prize of the Institute of Physics and the German Physical Society Printed and duplicated material; letter of congratulation. See A.55. | 1983 |
| A.31 | Letter from Keller declining invitation to relocate to the University of Akron, Ohio, 10 May 1985 | 1985 |
| A.32 | Papers <i>re</i> nomination for a Wolf Foundation Prize | 1990 |
| A.33 | Papers <i>re</i> Keller's official retirement at Bristol Includes programme of conference to mark his retirement and signed greetings card. | 1991 |
| A.34 | Special issue of journal <i>Polymer</i> in honour of Keller's retirement with covering letter from the publisher Butterworth Heinemann | 1992 |
| A.34A | Papers <i>re</i> nomination for 'science pour l'art' prize See also A.89. | 1993 |
| A.35 | Rumford Medal of the Royal Society Letter from the Royal Society informing Keller of the award and letters of congratulation. | 1994 |
| A.36 | Nomination of Keller 'for a civic award/honour through the Downing Street route' | 1995 |
| A.37 | Senior Research Fellowship, University of Bristol Appointment and re-appointment. | 1995-1999 |

Biographical, A.1-A.94

| | | |
|------------------|---|------------------|
| A.38 | Honorary appointment as Professor Associate in the Department of Materials Engineering, Brunel University Terms of agreement, continuation of appointment. | 1995-1999 |
| A.39 | Announcement of death by family | 1999 |
| A.40-A.47 | DIARIES | 1983-1992 |
| | A sequence of Keller's appointments diaries for the period 1983-1992 (1984-1985 and 1985-1986 missing). | |
| A.40 | 1983-1984 Includes many loose pages inserted into the diary. | |
| A.41 | 1986-1987 Includes many loose pages inserted into the diary. | |
| A.42 | 1987-1988 | |
| A.43 | 1988-1989 | |
| A.44 | 1989-1990 | |
| A.45 | 1990-1991 | |
| A.46 | 1991-1992 | |
| A.47 | 1992 | |

Biographical, A.1-A.94

| | | |
|------------------|--|------------------------|
| A.48-A.52 | MISCELLANEOUS BIOGRAPHICAL ITEMS | 1971-1990, n.d. |
| A.48 | Invitations to social occasions: university, Royal Society etc | 1971-1990 |
| A.49 | Letter from Keller to Max Stafford-Clark at the Royal Court Theatre, London 15 March 1987, beginning 'As a survivor of the Hungarian Holocaust I have followed the various articles on the subject of "Perdition".' Photocopy. Stafford-Clark was Artistic Director of the Royal Court. Perdition was a play on the holocaust by Jim Allen that was scheduled for performance at the theatre but withdrawn at the last minute. | 1987 |
| A.50-A.52 | 'Conformations' 'Conformations' was described as 'Polymer Music in four (short) movements for two pianos'. Composed by Ronald Koningsveld it was dedicated to Professor Walter H. Stockmayer, who suggested the idea. | N.d. |
| A.50 | Copy of the score with explanatory notes | |
| A.51, A.52 | Mono and stereo recordings of 'Polymer Music' The performers are Koningsveld and Stockmayer. The explanatory notes are read by Stockmayer. 2 items. | |
| A.53-A.94 | PHOTOGRAPHS | 1960-1996, n.d. |
| A.53 | Portrait photograph of Keller | N.d. |
| A.54 | 3 photographs of Keller in the laboratory with scientific | N.d. |

Biographical, A.1-A.94

equipment

A.55 2 photographs of Keller on the occasion of the award of 1983
the Max Born Prize

See A.30.

**A.56-A.67 University of Bristol Polymer Physics Group 1984-1985 -
photographs 1985-1986 , n.d.**

A sequence of group photographs, A.56-A.66, probably taken annually. Some have keys. However only the two at A.56 and A.57 are dated, 1984-1985 and 1985-1986, respectively.

At A.67 are more informal photographs of Keller with colleagues.

12 folders.

A.68-A.71 Other University of Bristol photographs N.d., 1985, 1991

A.68 Contents of envelope: 5 photographs including two of N.d.
Keller with Japanese colleague

The photographs are undated. However, a formal group photograph appears to show M.H.L. Pryce as Director of the H.H. Wills Laboratory. Pryce left Bristol in 1964.

A.69 2 photographs of Keller delivering the address on the 1985
occasion of the award of an honorary degree to Ronald Koningsveld

With letter from Koningsveld. See B.19.

A.70 Group photograph taken at an occasion in honour of N.d. [1991]
Keller's Bristol colleague, Sir Charles Frank, probably his 80th birthday. With key.

Frank is seated at the centre of the front row. Others seated in the front row include P.-G. de Gennes, N.F. Mott, M.H.L. Pryce, Dorothy Hodgkin (in wheel chair) and J. Freidel.

Biographical, A.1-A.94

| | | |
|------------------|--|------------------|
| A.71 | 2 photographs taken at the same occasion as A.71. One shows N.F. Mott making a presentation to Frank at a dinner. | 1991 |
| A.72-A.91 | Visits and conferences | 1960-1996 |
| | See also section F. | |
| A.72 | Group photograph: Gordon Research Conference on Polymers, New London, New Hampshire, USA, 4-8 July 1960 | 1960 |
| A.73 | Group photograph: Gordon Research Conference on Polymers, New London, New Hampshire, USA, 6-10 July 1964 With key. | 1964 |
| A.74 | Group photograph: Gordon Research Conference on Polymer Physics, Andover, New Hampshire, USA, 9-13 June 1969 | 1969 |
| A.75 | Group photograph: Foundation for Research Conferences in Chemistry Fourth Research Conference on High Polymers, Japan, May 1975 With key. | 1975 |
| A.76 | 7 informal photographs of Keller with colleagues probably taken at the same meeting in Japan as A.75 | ?1975 |
| A.77 | Group photograph: Gordon Research Conference on Polymer Physics, Andover, New Hampshire, USA, 21-25 June 1976 With key. | 1976 |

Biographical, A.1-A.94

- | | | |
|------|---|--------|
| A.78 | 4 photographs taken at meeting in Vilafranca del Penedes, Spain, September 1982 Includes newspaper report on meeting. | 1982 |
| A.79 | 2 photographs ?taken at European Physical Society (EPS) meeting, Prague, Czechoslovakia, 1985 Includes letter from Czechoslovak colleague, 17 December 1985, enclosing two photographs of the EPS meeting. The photographs and letter were found separately. | ? 1985 |
| A.80 | Group photograph: meeting at Oberlech, Austria With covering letter and key. | 1985 |
| A.81 | Group photograph: meeting at Garmisch-Partenkirchen, Germany | 1987 |
| A.82 | Group photograph: meeting of Polymer Physics Group | 1987 |
| A.83 | Group photograph: Gordon Research Conference on Liquid Crystal Polymers, New London, New Hampshire, USA, 11-15 July 1988 With key. | 1988 |
| A.84 | Group photograph: Gordon Research Conference on Polymer Physics, Andover, New Hampshire, USA, 18-22 July 1988 With key. | 1988 |
| A.85 | Group photograph: symposium 'Future perspectives on the Processing of HMW-PE and Related Products', Vaalsbroek, The Netherlands, 4 May 1990 With covering letter. | 1990 |

Biographical, A.1-A.94

- | | | |
|------------------|--|------------------|
| A.86 | Photograph of Professor Ian Ward, University of Leeds with colleagues on the occasion of an International conference on Polymer Physics to mark his 65th birthday, Leeds, 21-23 April [1993] | 1993 |
| A.87 | Group photograph: Osaka University Macromolecular Symposium, Osaka, Japan, 3-6 June 1993 | 1993 |
| A.88 | 15 informal photographs from Osaka, conference including Keller lecturing | 1993 |
| A.89 | 3 photographs taken at 'science pour l'art' occasion, Paris, France, 6 July 1993 See A.34A. | |
| A.90 | Group photograph: meeting at Lodz, Poland, 1995 | 1995 |
| A.91 | Group photograph: IUPAC International Symposium on Molecular Condensed State, Beijing, China, 20-25 August 1996 | 1996 |
| A.92-A.94 | Outsize photographs | 1973-1994 |
| A.92 | Group photograph: Gordon Research Conference on Polymers, Santa Barbara, California, USA, 15-19 1973 With key. | 1973 |
| A.93 | Group photograph: Gordon Research Conference on Polymers, Santa Barbara, California, USA, 9-13 January 1984 | 1984 |
| A.94 | Group photograph: Royal Society medallists 1994 | 1994 |

SECTION B UNIVERSITY OF BRISTOL, B.1-B.213 1957-1995

Keller joined the University of Bristol in 1955.

B.1-B.24 UNIVERSITY: GENERAL

B.25-B.213 DEPARTMENT OF PHYSICS

B.1-B.24 UNIVERSITY: GENERAL 1959-1991

B.1-B.15 Correspondence with University Officers 1959-1991

B.1-B.4 Vice-Chancellors 1967-1991

B.1 1967, 1970

B.2 1974-1978

B.3 1983-1986

B.4 1987-1991

B.5-B.12 Correspondence with Registrar and other senior members of the university administration 1959-1988, n.d.

B.5 1959

B.6 1966-1969

B.7 1970-1979

University of Bristol, B.1-B.213

| | | |
|------------------|--|------------------|
| B.8, B.9 | 1984 2 folders. | |
| B.10, B.11 | 1985 2 folders. | |
| B.12 | 1986-1988, n.d. | |
| B.13 | Correspondence with Information Officer | 1984-1989 |
| B.14, B.15 | Correspondence with Industrial Liaison Officer 2 folders. | 1987-1990 |
| B.16-B.24 | Miscellaneous correspondence and papers | 1972-1990 |
| B.16 | 1972, 1980, 1990 | |
| B.17, B.18 | Colston Research Society Committee papers, symposium programme etc. 2 folders | 1974-1975 |
| B.19 | Honorary degree Keller's public address on the occasion of the award of an honorary degree to R. Koningsveld. See also A.69. | 1985 |
| B.20 | Materials Research Centre proposal | 1986-1987 |
| B.21 | Continuous Education proposal | 1987 |

University of Bristol, B.1-B.213

| | | |
|------------------|--|------------------------|
| B.29 | 1985 | |
| B.30 | 1986 | |
| B.31 | 1987-1989 | |
| B.32 | 1991, n.d. | |
| B.33-B.40 | Accommodation, budgets and staffing | 1967-1991, n.d. |
| B.33 | 1967-1968 - 1972-1973 | |
| B.34, B.35 | 'Lab Finances' Contents of folder so inscribed divided into two for ease of reference. | 1973-1975 |
| B.36 | 1979 | |
| B.37, B.38 | 'Case for Polymer Post' Contents of folder so inscribed divided into two for ease of reference. | N.d. c.1984 |
| B.39 | 1985-1988 | |
| B.40 | 1989-1991, n.d. | |

University of Bristol, B.1-B.213

B.41-B.63 **Equipment and supplies** **1957-1991, n.d.**

Correspondence with suppliers, Bristol University
colleagues, etc

B.41 1957, 1965

B.42-B.44 1966
3 folders.

B.45, B.46 1967
2 folders.

B.47 1968

B.48 1969-1970

B.49 1971

B.50 1972-1973

B.51 1977, 1979

B.52 1984

B.53-B.58 1985
Principally *re* University Grants Committee additional
equipment grant.

6 folders.

University of Bristol, B.1-B.213

| | | |
|------------------|---|------------------------|
| B.59 | 1986 | |
| B.60 | 1987 | |
| B.61 | 1988-1989 | |
| B.62 | 1990-1991 | |
| B.63 | N.d. | |
| B.64-B.66 | Library | 1968-1995, n.d. |
| | Includes Physics Library Committee papers. | |
| B.64 | 1968-1973 | |
| B.65 | 1974-1979 | |
| B.66 | 1983, 1991, 1995, n.d. | |
| B.67-B.79 | Research policy and administration | 1985-1991, n.d. |
| B.67 | Physics Department Research Plan | 1985 |
| B.68 | 'Draft for comment' of Outline Proposal on Aerospace Applications of Advanced Materials | 1987 |
| B.69, B.70 | Proposal for an Interdisciplinary Research Centre in Polymer Science and Technology 2 folders. | 1988 |

University of Bristol, B.1-B.213

| | | |
|-------------------|---|------------------------|
| B.71, B.72 | 'Dept. Research Plan Academic Plan 1989' Contents of folder so inscribed divided into two for ease of reference. 2 folders. | 1989 |
| B.73 | Proposal for Institute of Advanced Materials | 1989 |
| B.74 | Minutes of two Polymer Physics Group meetings | 1990 |
| B.75 | Polymer Group Prospectus 1990-1991 | 1991 |
| B.76 | Memorandum by Keller 'Proposal on my staying on; the science, people, finance, and needs/requirements. Period: till end 1993 (first instance?)' | 1991 |
| B.77-B.79 | Miscellaneous typescript and duplicated typescript notes and drafts <i>re</i> polymer and related research activities 3 folders. | N.d. |
| B.80, B.81 | Safety Correspondence etc <i>re</i> department safety. 2 folders. | 1979-1987 |
| B.82-B.148 | Teaching | N.d., 1966-1992 |
| B.82-B.122 | Lecture notes | N.d., 1979-1988 |
| B.82 | 'Nucleation Course' Notebook so inscribed used for manuscript notes. Undated latest bibliographical reference 1962. | N.d. |

University of Bristol, B.1-B.213

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| B.83-B.85 | <p>Typescript draft with a few manuscript pages paginated 1-41 for untitled course on optics.</p> <p>3 folders.</p> <p>At B.85 are miscellaneous manuscript notes found with paginated draft.</p> | N.d. |
| B.86, B.87 | <p>'Orientation'</p> <p>Contents of folder so inscribed divided into two for ease of reference: manuscript notes paginated 1-48.</p> | N.d. |
| B.88-B.92 | <p>'Interference Optics'</p> <p>Contents of folder so inscribed divided into five for ease of reference: manuscript draft paginated 1-58, manuscript notes for examination questions etc. Undated but includes notes on back of list of first year special BA students for 1963 (see B.92).</p> | N.d. |
| B.93-B.95 | <p>'Geometrical Optics'</p> <p>Contents of folder so inscribed divided into three for ease of reference: manuscript notes paginated 1-36.</p> <p>A number of out of sequence sheets of notes were found at the front of the folder (B.93).</p> <p>The papers at B.93-B.95 were found in folders similar to those in which the groups of papers at B.86, B.87 and B.88-B.92 were found.</p> | N.d. |
| B.96, B.97 | <p>'Microscopy'</p> <p>Contents of folder so inscribed divided into two for ease of reference: manuscript notes paginated 1-36, miscellaneous manuscript notes etc. Undated but a copy of the University of Bristol Newsletter for 16 November 1972 was found with the notes.</p> | N.d. |
| B.98-B.100 | <p>'Lecture notes 3rd year Material Sci'</p> <p>Contents of folder so inscribed divided into three for ease</p> | N.d., 1980 |

University of Bristol, B.1-B.213

of reference: variously paginated sequences of manuscript notes on polymers (B.98, B.99) and photocopied manuscript notes on 'Polymeric Structure (Part I)' by Keller for Spring College on the Physics of Polymers, Liquid Crystals and Low-Dimensional Solids, 9 April-20 June 1980 (B.100).

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| B.101, B.102 | '3rd Year Students' | 1979 |
| | Contents of folder so inscribed divided into two for ease of reference: manuscript notes, transparencies. | |
| B.103-B.105 | 'Material Science Notes' | N.d., 1980-1981 |
| | Contents of folder so inscribed divided into three for ease of reference: duplicated manuscript notes (B.103, B.104), miscellaneous papers including course handout headed 'Materials Science Stage III 1980/81' (B.105) | |
| B.106 | 'Lecture on Techniques' | N.d. |
| | Transparencies, etc. | |
| B.107 | 'Lecture Notes' | N.d. |
| | Contents of folder so inscribed: manuscript notes including paginated sequence headed 'Molecular weights'. | |
| B.108-B.110 | 'Lecture Notes' | N.d. |
| | Contents of folder so inscribed divided into three for ease of reference: includes variously paginated sequences of manuscript notes. | |
| B.111-B.114 | 'Lecture Notes' | N.d. |
| | Contents of folder so inscribed divided into four for ease of reference: includes variously paginated sequences of manuscript notes. | |
| B.115-B.118 | 'Lecture Notes' | N.d. |
| | Contents of folder so inscribed divided into four for ease of | |

University of Bristol, B.1-B.213

reference: variously paginated typescript drafts including 'VI Lecture 'Thermodynamical treatment of rubber elasticity', 'Lecture VII The elasticity of a molecular network' and 'Lecture VIII Experimental examination of theory'.

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| B.119, B.120 | 'Basics MSc lecture Feb 1988' | 1988 |
| | Contents of folder so inscribed divided into two for ease of reference: manuscript notes, transparencies and course booklet. | |
| B.121, B.122 | Duplicated typescript course notes for 'Chemistry 481' and 'Chemistry 482' | N.d. |
| | Possibly American in origin but found with Bristol teaching material. Undated but latest bibliographical reference 1961. | |
| | 2 folders. | |
| B.123-B.148 | Other papers <i>re</i> teaching | 1966-1992 |
| B.123-B.129 | Timetable, booklist, examination questions etc for undergraduate courses | 1966-1990 |
| B.123 | Manuscript draft examination questions etc for Subsidiary Optics | 1966 |
| | Contents of Keller's folder. | |
| B.124 | Discussion on 3rd Year Projects; timetable for 1968-1969; booklist and syllabus for 3rd Year Physics | 1966, 1968, n.d. |
| B.125 | Manuscript draft of examination questions for Subsidiary Optics; circular <i>re</i> outline papers and examination questions | 1971 |
| B.126 | 'Stage III Projects 1971/72' | 1971 |
| | Duplicated typescript papers. | |

University of Bristol, B.1-B.213

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| B.127 | Mat. Phys. Exam questions' Contents of folder so inscribed: manuscript and typescript drafts etc for 1982 questions. | 1982 |
| B.128 | 'Illrd year Materials option' Contents of folder so inscribed: duplicated typescript papers. | N.d. |
| B.129 | Copies of letters from J.W. Steeds <i>re</i> proposed undergraduate course in materials science. | 1990 |
| B.130-B.147 | M.Sc. course etc. | 1966-1987 |
| B.130 | Duplicated papers <i>re</i> postgraduate lectures, etc | 1966, 1968 |
| B.131 | Duplicated papers <i>re</i> MSc. Course in the Physics of Materials | 1970-1971 |
| B.132 | 'MSc Projects' Contents of folder so inscribed: includes outlines of projects. | 1971 |
| B.133 | Examination questions and 'Sketch of Answers' | 1972, 1978, n.d. |
| B.134 | 'M.Sc Projects' Contents of folder so inscribed: includes outlines of projects. Undated but latest bibliographical reference 1975. | N.d. |
| B.135 | M.Sc. course syllabus, seminars and examination questions | 1975-1976 |

University of Bristol, B.1-B.213

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| B.136 | 'M.Sc. exam questions' | 1976-1982 |
| | Contents of folder so inscribed: includes examination questions for 1976 and 1981-1982 and project outlines. | |
| B.137 | 'M.Sc. Projects 1976' | 1976 |
| | Contents of folder so inscribed: project outlines. | |
| B.138, B139 | 'MSc Answers 1976 & 1977' | 1969-1977 |
| | Contents of folder so inscribed divided into two for ease of reference: typescript and manuscript drafts covering more extended period than folder title indicated. | |
| B.140 | 'MSc Course' | 1978-1979 |
| | Contents of folder so inscribed: includes 'the new literature, timetable, etc for the academic year 1978/79'. | |
| B.141 | M.Sc. project outline | 1982 |
| B.142-B.145 | Miscellaneous papers <i>re</i> M.Sc. course | N.d. |
| | Includes project outlines. | |
| | 4 folders. | |
| B.146 | Papers <i>re</i> M.Sc. course in Physics of Semiconductor Materials | 1987 |
| B.147 | Correspondence <i>re</i> Keller's lecture in Introduction to Polymer Science course | 1991-1992 |
| | The course was given by the University of Bristol Department for Continuing Education. | |

University of Bristol, B.1-B.213

B.148-B.213 Polymer Laboratory Personnel 1966-1991

Correspondence and papers *re* researchers and prospective researchers in Keller's laboratory. Includes research students, research assistants, postdoctoral researchers and senior visiting research workers. Presented in a chronological sequence.

Includes references and recommendations.

B.148 1966

B.149-B.151 1967
3 folders.

B.152, B.153 1968
2 folders.

B.154, B.155 1969
2 folders.

B.156, B.157 1970
2 folders.

B.158-B.162 1971
5 folders.

B.163, B.164 1972
2 folders.

B.165, B.166 1973
2 folders.

University of Bristol, B.1-B.213

B.167, B.168 1974
2 folders.

B.169-B.173 1975
5 folders.

B.174, B.175 1976
2 folders.

B.176 1977

B.177 1978

B.178 1979

B.179 1981

B.180 1983

B.181, B.182 1984
2 folders.

B.183, B.184 1985
2 folders.

B.185-B.188 1986
4 folders.

University of Bristol, B.1-B.213

B.189-B.194 1987
6 folders.

B.195-B.199 1988
5 folders.

B.200-B.203 1989
4 folders.

B.204-B.208 1990
5 folders.

B.209-B.212 1991
4 folders

B.213 N.d.

SECTION C RESEARCH, C.1-C.464 1944-1999

| | |
|-------------|--------------------------------|
| C.1-C.64 | NOTEBOOKS |
| C.65-C.81 | EARLY RESEARCH NOTES |
| C.82-C.181 | RESEARCH TOPICS |
| C.182-C.297 | RESEARCH COLLEAGUES |
| C.298-C.456 | GRANT APPLICATIONS AND REPORTS |
| C.457-C.464 | PATENTS |

**C.1-C.64 NOTEBOOKS 1940s [1946]-
1978, n.d.**

C.1-C.28 Hungarian notebooks 1940s

These are soft back exercise books used chiefly for student notes (chiefly if not wholly undergraduate) and mathematical calculations. Nearly all the notes are in Hungarian with a very few passages in English or German. Many have been used from the front and from the back for work at different periods or on different subjects.

Most of the notebooks are inscribed on the front covers with Keller's name and a note of the subject. These inscriptions, also in Hungarian are often largely illegible.

There is very little precisely dateable material but the notebooks are of Hungarian manufacture.

C.1 Secondary school exercise book used for notes on physics

Printed table inside cover is for teacher's marking of work.

Research, C.1-C.463

- C.2 Used from the front for notes on Analytical Geometry and from the back for Chemistry notes

The final pages of the notebook have been used by Keller for a Spanish-German glossary.
- C.3 Used from the front for notes on Astrophysics and from the back for notes on Applied Physical Chemistry
- C.4 Used for work on Calculus
- C.5 Used for ?tutorial notes on Calculus
- C.6 Used for Mathematics notes including work on Calculus
- C.7 Used from the front for notes on Chemistry and from the back for mathematical calculations
- C.8 Untitled. Used for notes on Chemistry practicals

Includes loose mathematics notes at front.
- C.9 Used for notes on Chemistry

Loose at front is certificate of attendance at university examinations, December 1947
- C.10 Used for notes on Organic Chemistry practicals
- C.11 Used for notes on Colloid Chemistry

At front of notebook is some mathematics work.
- C.12 Used for notes on Colloid Technology

Research, C.1-C.463

- C.13 Used for notes on Colloid Technology
- C.14 Used for notes on Colloid Technology
Undergraduate notes on lectures of Dr Buzagh.
- C.15 Used for notes on Colloid Technology

Includes notes on molecular shape and chemical techniques in industry including distillation of oil and iron ore preparation.
- C.16 'I'. Used for mathematics notes on Differential integrals
- C.17 'II'. Used for mathematics notes on Differential integrals (theory)
- C.18 Used for mathematics notes on Differential integrals (practical)
- C.19 Used for mathematics notes on Differential Equations
- C.20 Used for physics notes on General Relativity
- C.21 Untitled. First page headed 'Kinetics' and 'The chemistry of large molecules'

There is only one page of notes (in Hungarian).
- C.22 Used for physics notes on the theory of Light

Undergraduate notes on lectures of Laszlo Zoltan.

Research, C.1-C.463

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|------|--|--------|
| C.32 | Hardback notebook labelled 'Amorphous-Crystalline ratio'. Used for notes on the literature. Latest bibliographical reference 1950. Most pages not used. | c 1950 |
| C.33 | Hardback notebook labelled 'Low-angle X-ray scattering'. Used chiefly for notes on the literature. Latest bibliographical reference 1951 | c 1951 |
| C.34 | Hardback notebook labelled 'Literature of spherulites [ditto] of spiral structures'. Latest bibliographical reference 1954 | 1954 |
| C.35 | Hardback notebook used for miscellaneous notes. Latest reference 1957 | 1957 |
| C.36 | Hardback notebook used chiefly for calculations. Intercalated material at front includes notice for vacation school on dislocations 1958. | 1958 |
| C.37 | Hardback notebook used for miscellaneous notes. Latest bibliographical reference 1958 | c 1958 |
| C.38 | Hardback notebook labelled 'Review of textbooks'. Latest bibliographical reference 1961 | c 1961 |
| C.39 | Exercise book. Most pages not used | c 1961 |
| C.40 | Exercise book used for notes on Defects of solids and mathematical calculations | 1961 |
| C.41 | Exercise book used for notes on waves in crystals, lecture notes etc. | 1962 |

Research, C.1-C.463

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|------------------|--|------------------------|
| C.42 | Hardback notebook inscribed 'List of Literature Borrowed' on front cover Used to record books, journals, theses etc borrowed [?from Keller] 1964-1969. | 1964-1969 |
| C.43 | Exercise book labelled on front cover 'Instruments on loan' Only one entry for apparatus borrowed (1963). Used from the back for calculations. | 1963 |
| C.44 | Exercise book inscribed 'Lattice instructions' on front cover Used for calculations | N.d. |
| C.45 | Hardback notebook labelled 'Lectures Wave Crystals. Prof Frank'. Used for notes on lectures by F.C. Frank At front of notebook are loose photographs. | N.d. |
| C.46-C.64 | Jotters and rough notes These notebooks, ranging from pocket notebooks to A4-size pads (some lacking covers), were used for calculations, notes on conferences, outlines for lectures, initial drafts and summaries of papers, bibliographical references, notes of meetings of colleagues and other jottings. Very few have any indication of date. | 1977-1978, n.d. |
| C.46 | Hardback pocket notebook labelled '1977-78' on front cover | 1977-1978 |
| C.47 | Hardback pocket notebook Loose at front is letter from J.J. Point, November 1977. | c 1977 |
| C.48 | Hardback pocket notebook | N.d. |

Research, C.1-C.463

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|------|---|------|
| C.49 | Hardback pocket notebook | N.d. |
| C.50 | Hardback pocket notebook | N.d. |
| C.51 | Hardback pocket notebook | N.d. |
| C.52 | Spiral bound pocket notebook | N.d. |
| C.53 | Exercise book Most pages not used. | N.d. |
| C.54 | Spiral bound 'Stenographer's note book' The notebook is of US manufacture. | N.d. |
| C.55 | Notepad The notepad is of Polish manufacture. | N.d. |
| C.56 | A4 pad The paper is printed 'DSM'. | N.d. |
| C.57 | A4 pad inscribed 'Masamichi Hikosaka' on front cover The pad is from the Technische Universitet Eindhoven. | N.d. |
| C.58 | A4 pad The pad is from the Technische Universitet Eindhoven. | N.d. |
| C.59 | A4 pad Of German manufacture | N.d. |

Research, C.1-C.463

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|------------------|---|---------------------------------|
| C.60 | A4 pad | N.d. |
| C.61 | A4 pad | N.d. |
| C.62 | Letter-size notepad | N.d. |
| C.63 | US format notepad | N.d. |
| C.64 | US format notepad | N.d. |
| C.65-C.81 | EARLY RESEARCH NOTES | 1940s [1944] - 1950s |
| | Contents of Keller's folders: manuscript notes and calculations, duplicated typescript course work. Mostly in Hungarian. | |
| C.65-C.67 | 'Különféle feljegyzések'. Contents of folder so inscribed divided into three for ease of reference: manuscript notes At C.65 is undated (and trimmed) postcard (in Hungarian). | 1940s |
| C.68-C.70 | 'Függvény Tan'. Contents of folder so inscribed divided into three for ease of reference. Manuscript notes on ?study of functions paginated 1-72. | 1940s |
| C.71-C.73 | 'SI'. Contents of folder so inscribed divided into three for ease of reference: manuscript notes | 1940s |
| C.74 | Untitled folder of manuscript notes | 1940s |

Research, C.1-C.463

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|-------------------|---|-------------------------------|
| C.75 | 'Összetett Minőségi Analízis' Duplicated typescript notes by János Richter, Budapest, 1944 | 1944 |
| C.76 | 'Kiegészítés a Szervetlen Vegyületek Minőségi Analíziséhez' Duplicated typescript question sheets by László Erdey, Budapest, 1945, with Keller's answers in manuscript. | 1945 |
| C.77 | 'A Qualitativ Chemiai Analysis Elemei' Duplicated typescript notes by László Szellédy. | 1940s |
| C.78, C.79 | Untitled folder divided into two for ease of reference: manuscript notes paginated 1-47 In English. | 1951 |
| C.80, C.81 | Untitled folder divided into two for ease of reference: manuscript calculations, diagrams, jottings etc. In English. | N.d. |
| C.82-C.181 | RESEARCH TOPICS This is material found in Keller's folders and envelopes, presented in alphabetical order by title of topic. It includes calculations, notes, drafts of papers and lectures, graphs, diagrams and correspondence. A significant proportion of the manuscript material is in hands other than Keller's but the authorship is not usually identified. | 1956-1994 and n.d. |
| C.82 | 'Calculations' | 1956, 1957 |
| C.83, C.84 | 'Calculations. Miscellaneous' 2 folders. | N.d. |

Research, C.1-C.463

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|------------|---|-----------|
| C.85 | 'Chain extension' | N.d. |
| C.86 | 'Recognition of Chain Folding' | c 1990 |
| C.87 | 'Collagen 21/4/75' | 1975 |
| C.88, C.89 | 'Collagen' C.89 includes photographs. 2 folders. | 1980-1981 |
| C.90 | 'Collagen. Current material for discussion [...] 1986' | 1986 |
| C.91 | 'Collagen' Chiefly on rat tail tendon (RTT) collagen. | N.d. |
| C.92 | 'On the curvature of {100} sector boundaries' | N.d. |
| C.93 | 'Disclinations' Chiefly on spherulites. Includes photocopied manuscript work by F.C. Frank. | c 1972 |
| C.94, C.95 | 'E.M.' Includes rough manuscript lecture drafts on electron-microscopy. 2 folders. | 1972-1975 |
| C.96 | 'Electron diffraction' Typescript 'Summary of electron diffraction studies on polymers' and photographic material. | c 1957 |

Research, C.1-C.463

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|-------------|--|-----------|
| C.97 | 'Fibres' | N.d. |
| C.98 | 'Flow' | 1983 |
| C.99, C.100 | 'Flow orientation' Includes rough manuscript draft of lecture. 2 folders. | N.d. |
| C.101 | 'Flow orient.' Includes sections of manuscript draft. | 1972-1974 |
| C.102 | 'Relating to Flow Orientation' | 1974 |
| C.103 | 'Folding' | N.d. |
| C.104 | '4-roll mill' Work by C. Farrell and D.P. Pope. | N.d. |
| C.105 | 'Fractionation' | N.d. |
| C.106 | 'Gelation' | N.d. |
| C.107-C.110 | 'Note on gels' Includes correspondence with N. Overbergh and others, 1975. 4 folders. | 1975 |
| C.111 | 'Growth Twinning' | N.d. |

Research, C.1-C.463

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|--------------|--|-------|
| C.112 | 'IPP Gels' Includes photocopy correspondence with P.J. Lemstra and notes of discussion with P. Hawkins. | 1979 |
| C.113 | 'IPP work' Letter from B. Lotz enclosing data (transparencies). | 1991 |
| C.114 | 'i-PS papers. X-ray section. DSC section' Typescript and manuscript reports. | 1970s |
| C.115 | 'i-PS [illegible]' | N.d. |
| C.116, C.117 | 'Isotactic Polypropylene Gels' Notes and data by ?P. Hawkins. 2 folders. | N.d. |
| C.118 | 'Initial Fold Length' | N.d. |
| C.119 | 'Introduction to the Laplace Transform' 8pp duplicated typescript. | N.d. |
| C.120 | 'Leaf crystals' | 1963 |
| C.121 | 'MBPE' Detailed analysis by B. Wunderlich. | 1991 |
| C.122 | 'Metastability & pressure crystal' Chiefly rough manuscript drafts. | N.d. |

Research, C.1-C.463

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|--------------|---|-----------|
| C.123 | 'Methods' | N.d. |
| C.124 | 'Miscellaneous' | N.d. |
| C.125 | 'Molecular chain folding in polyethylene and cyclic hydrocarbons' Typescript. | 1960 |
| C.126-C.128 | 'N.M.R.' Correspondence and data from T. Connor, Molecular Science Division, National Physical Laboratory. 3 folders. | 1965-1966 |
| C.129 | 'N.M.R.' | ?1959 |
| C.130 | 'Neutrons applications' | N.d. |
| C.131 | 'Neutrons - Latest Jan 1980' | 1978-1980 |
| C.132 | 'Neutrons. Current single cryst. problem' Includes manuscript notes for lectures. | c 1977 |
| C.133 | 'Non-equilibrium liquid crystal deficiency' | N.d. |
| C.134, C.135 | 'Nylon' 2 folders. | N.d. |

Research, C.1-C.463

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|--------------|---|------------|
| C.136 | 'Nylon annealing' Manuscript note (not in Keller's hand) on 'Annealing behaviour of Nylon 6,6 single crystals', with manuscript annotation by Keller. | N.d. |
| C.137 | 'Nylon fold length' Manuscript note (not in Keller's hand). | N.d. |
| C.138 | 'Orientation' | N.d. |
| C.139 | 'Orientation phenomena' | N.d. |
| C.140-C.142 | 'Oriented crystallization' Photocopy manuscript and typescript draft, and figures on 'Orientation and diffusion of rigid rod macromolecules'. 3 folders. | N.d. |
| C.143, C.144 | 'P.E.' Includes correspondence from David [?], writing from the Centre de Recherches sur les Macromolecules, Strasbourg, France, and photocopy manuscript drafts on polyethylene work. 2 folders. | 1972 |
| C.145 | 'PE' and 'Notes for DSM' 'A summary of experiments in progress'. | N.d. |
| C.146 | 'PE embedded in PST' | N.d. |
| C.147 | 'PHB' Includes interim report on PHB processing by Keller and | 1980, 1984 |

Research, C.1-C.463

P.J. Barham, 1980 and work by A.J. Owen, 1984.

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|-------------|--|-----------------------|
| C.148-C.151 | 'P.O.E. work' Correspondence, notes, photographs, etc <i>re</i> work on Poly(ethyleneoxide) spherulites. 4 folders. | 1959-1962 |
| C.152 | 'PP' and 'ICI interim on gels' | N.d. |
| C.153-C.162 | 'PVC'. Contents of boxfile so inscribed. Includes contents of a number of titled folders and loose material. See also C.241-C.263. | 1979-1994 and n.d. |
| C.153 | 'PVC I' Manuscript sections of rough draft; tables etc. Possibly parts of unpublished 1979 work, see C.154 below. | N.d. |
| C.154 | 'PVC II' Fax to H. Soenen, 1991, refers to 1979 work on gelation of PVC. | 1991 |
| C.155 | 'PVC III' Chiefly photographs. | N.d. |
| C.156 | 'PVC' Manuscript data (not in Keller's hand). | N.d. |
| C.157 | 'PVC [...] Mechanical latest. Modulus [?]' Includes manuscript (not in Keller's hand) and photocopy | 1994 and n.d. |

Research, C.1-C.463

typescript data; letter 1994.

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| C.158, C.159 | 'General PVC' | 1982 |
| | Draft of results sent to Keller by J.M. Guenet, with x-ray film 'so that you can check my interpretations'. | |
| | 2 folders. | |
| C.160-C.162 | Sections of manuscript and typescript drafts, graphs etc. | N.d. |
| | Found loose. | |
| | 3 folders. | |
| C.163-C.165 | 'PVC + iPS - story' | 1980-1981 |
| | Includes exercise book inscribed 'IPS and PVC gels' on front cover, with notes in English and Hungarian, and correspondence. | |
| | 3 folders. | |
| | This is work with M. Nagy. See also C.241-C.263. | |
| C.166 | 'Periodic chains [...]' | N.d. |
| C.167 | 'On pressure program' | N.d. |
| C.168 | 'RA' | N.d. |
| C.169 | 'Radiation chemistry of paraffins' | c 1970 |
| C.170 | 'Rubber elasticity' | 1965 |
| | Duplicated instructions for experiments in polymer physics. | |

Research, C.1-C.463

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|--------------|---|------|
| C.171 | 'SBS' | 1976 |
| C.172, C.173 | 'SBS' Work on polystyrene-polybutadiene-polystyrene (SBS), including 'only remaining sample' (C.173). 2 folders. | 1977 |
| C.174 | 'The solidification of polyethylene under conditions of flow and pressure' | N.d. |
| C.175 | 'Strain note calculations' | N.d. |
| C.176 | 'Symmetry' Duplicated typescript. | N.d. |
| C.177 | 'Thermotropic liquid crystalline polymers' Typescript research report. | 1992 |
| C.178 | 'Tritium x-ray [illegible] polythene' | N.d. |
| C.179 | 'Notes on unsuitability' | N.d. |
| C.180 | 'X-ray Bristol data' | N.d. |
| C.181 | Miscellaneous material | N.d. |

Research, C.1-C.463

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|--------------|---|------------|
| C.187, C.188 | Chivers, R.A. Manuscript and photocopy manuscript notes on research experiments on polyethylene. 2 folders. | 1980 |
| C.189-C.192 | Coombes, A. | 1976-1977 |
| C.189 | Manuscript research report 1976 | |
| C.190 | Research outline | 1977 |
| C.191 | Comments on thesis | N.d. |
| C.192 | Photographs | N.d. |
| C.193 | Crowson, R.Y. Typescript research report. | 1975 |
| C.194 | Dlugosz, J. Manuscript and photocopy manuscript research reports on work on SBS. | 1972 |
| C.195 | Dreyfus, [?] Manuscript notes; photographs. | N.d. |
| C.196 | Farrell, C.J. Typescript and photocopy manuscript research reports. | 1976, n.d. |

Research, C.1-C.463

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|-------------|--|----------------------|
| C.197 | Fischer, H. Typescript report 'The phase diagram of the system PBZT/Polyphosphoric acid/Water'; figures. | 1993 |
| C.198-C.200 | Frank, F.C. Frank was Melville Wills Professor of Physics at Bristol 1954-1969 and Henry Overton Wills Professor and Director of the H.H. Wills Physics Laboratory 1969-1976. | 1950s, 1974, n.d. |
| C.198 | 'Notes of discussions with Prof. Frank & others' Manuscript jottings and calculations. | 1950s |
| C.199 | Photocopy manuscript notes | 1974 and n.d. |
| C.200 | Photocopy typescript | N.d. |
| C.201-C.211 | Fraser, G.V. | 1974-1979, n.d. |
| C.201 | Photocopy research reports | 1974-1975 |
| C.202 | 'Raman spectroscopy of polymers' Typescript report, November 1975. | 1975 |
| C.203 | Photocopy typescript research report | 1976 |
| C.204 | 'Preliminary survey of polyalkenamers' Typescript report, 'Spring 77'. | 1977 |
| C.205 | 'Recent developments in the study of polymer crystal morphology using low frequency Raman spectroscopy' | c 1977 /... |

Research, C.1-C.463

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|--------------|---|------------|
| /... | Typescript 'Revised draft', latest bibliographical reference 1977. | |
| C.206 | Correspondence | 1978-1979 |
| C.207 | 'Polystyrene Gels. A preliminary examination using infrared spectroscopy and X-ray diffraction techniques' Photocopy typescript. | 1978 |
| C.208 | 'What is a carbon-chlorine stretching vibration in PVC?' Photocopy manuscript. | 1979 |
| C.209 | 'Characterization of materials using Fourier Transform infrared spectroscopy' Photocopy typescript. | 1979 |
| C.210, C.211 | Undated reports and drafts. 2 folders. | N.d. |
| C.212, C.213 | Fulton, W.S. | 1981, 1983 |
| C.212 | Manuscript report on investigation of polymer samples provided by ICI | 1981 |
| C.213 | Bound Departmental 'Report 1: Collagen'. | 1983 |
| C.214 | George, E.J. M.Sc. thesis 'Swelling of Polyethylene Single Crystals' | 1976 |

Research, C.1-C.463

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|--------------|---|-----------------|
| C.215 | Grubb, D.T. Manuscript research reports. | 1975 |
| C.216 | Hawkins, P. Material found in folder inscribed 'Hawkins. Reports on gelation of PVC & PP'. There is no other evidence of authorship. | N.d. |
| C.217 | Hay, I.L. Ph.D. thesis 'Studies on Polymer Structure and Deformation with particular reference to Polyethylene'. | 1967 |
| C.218-C.223 | Hill, M.J. Mary Hill (née Machin) was a longstanding research collaborator at Bristol. | 1966-1980, n.d. |
| C.218 | Report on 'The deformation of stress crystallised, polyethylene films' Typescript + figures. | c 1968 |
| C.219, C.220 | Contents of envelope inscribed 'P.T.C.F. AF M.J. Machin' Found with preceding. Photographic and other data. 2 folders. | 1966 |
| C.221 | Manuscript research report | 1980 |
| C.222 | Typescript research report | N.d. |
| C.223 | Miscellaneous material Not all in Hill's hand. | N.d. |

Research, C.1-C.463

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|-------------|--|-----------------|
| C.224-C.228 | Jarvis, D.A. | 1980-1983, n.d. |
| C.224 | 'Review of the use of infra-red spectroscopy for studying polystyrene in solution and in the form of a gel' Photocopy manuscript. | 1980 |
| C.225 | Reports on work on FT-IR investigations on gels Photocopy manuscript, May 1982. | 1982 |
| C.226 | 'FT-IR: Spectral changes on heating a wet gel of PVC' Photocopy manuscript, June 1982. | 1982 |
| C.227 | 'FTIR: Spectral changes on heating gels of PVC' Photocopy manuscript, with manuscript annotation by Keller. | 1983 |
| C.228 | Undated reports Manuscript and photocopy manuscript. | N.d. |
| C.229 | Jenkins, H. Typescript account of work by Jenkins and A. Hall, 1969-1970. | 1970 |
| C.230 | Kiss, [?] Material on turbulent flow. | ?1973 |
| C.231 | Lemstra, P.J. Miscellaneous material, including results of experimental work on gels. | 1979 and n.d. |

Research, C.1-C.463

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|--------------|---|-----------------|
| C.232, C.233 | Mackley, M.R. | 1974-1975, n.d. |
| C.232 | Photocopy manuscript and manuscript research reports | 1974-1975 |
| C.233 | 'Mackley's Patent'. Contents of folder so inscribed. | N.d. |
| C.234-C.236 | Magill, J.H. Correspondence and papers <i>re</i> visit to Bristol in 1979 and research collaboration and publication arising. See also C.378. 3 folders. Magill was Professor in the University of Pittsburgh School of Engineering. | 1979-1980 |
| C.237 | Marrucci, G. Note on theory of Marrucci from C.J. Farrell, with associated material. Marrucci was at the University of Naples, Italy. | 1978 |
| C.238 | Meader, D. Bound manuscript report 'Determination of the structure of isotactic Poly(methyl methacrylate)' | 1977 |
| C.239 | Miles, M.J. Miscellaneous material. | 1980s |
| C.240 | Miyaska, K. Miscellaneous material <i>re</i> x-ray analysis of polystyrene gels. | c 1976 |

Research, C.1-C.463

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|--------------|--|-----------------|
| C.241-C.263 | Nagy, M. Contents of boxfile inscribed 'PVC Miklos'. Includes notebooks, contents of a number of titled folders and loose material. Nagy was a Hungarian colleague from the Department of Colloid Science, Lorand Eötvös University, Budapest, who visited Bristol for research for the year 1980-1981. See also C.153-C.162. | 1980-1984, n.d. |
| C.241-C.259 | Contents of boxfile inscribed 'PVC Miklos'. Includes notebooks, contents of a number of titled folders and loose material. See also C.153-C.162. | 1980-1984, n.d. |
| C.241 | Hardback notebook, used for work at Bristol 10 December 1980-May 1981 Loose material intercalated. | 1980-1981 |
| C.242 | Hardback notebook, used July 1981 | 1981 |
| C.243, C.244 | 'Miklos - Old work & Notes. PVC' Graphs, calculations etc. 2 folders. | c 1981 |
| C.245 | 'X-rays Miklos' Photographic material. Retained in original envelope. | c 1981 |
| C.246 | 'Old work & notes. Description of work by M. Nagy' Miscellaneous notes, graphs etc. | c 1981 |

Research, C.1-C.463

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|-------------|---|------|
| C.247 | 'PVC Recent text & figures [...] Includes Miklos final draft' Graphs and manuscript notes on work on PVC gels. | 1982 |
| C.248 | 'PVC DSC Miklos' Letter from Nagy with manuscript graphs. Original folder with manuscript notes has been retained. | 1984 |
| C.249 | 'S45 PVC Gel' Data. Original folder with manuscript notes has been retained. | N.d. |
| C.250 | Nagy's manuscript notes on studies on PVC gels etc. | N.d. |
| C.251-C.253 | 'PVC gels' Manuscript rough drafts; data; calculations etc. 3 folders. | N.d. |
| C.254 | 'X-ray diffraction' Manuscript note in Keller's hand. | N.d. |
| C.255 | 'PVC. Fragments for paper' Manuscript notes in Keller's and Nagy's hands. | N.d. |
| C.256 | 'PVC. W.S. Fulton [...]' Graphs. Found with Nagy material. Original folder with manuscript notes has been retained. | N.d. |

Research, C.1-C.463

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|--------------|---|---------------------|
| C.257-C.259 | Miscellaneous notes and data found loose 3 folders. | N.d. |
| C.260 | 'Miklos PVC' Contents of folder: typescript notes etc. In Hungarian | 1980 |
| C.261-C.263 | Contents of untitled folder Typescript drafts, some in Hungarian. Includes 'Some new aspects of research on polymer gels' (C.263). 3 folders. | 1980-1981 |
| C.264, C.265 | Narh, K.A. | N.d. |
| C.264 | 'The effect of stirring on gelation of i-PS' | |
| C.265 | Rough draft of work with Keller on 'Light scattering studies on the thermal behaviour of the banded spherulites of melt crystallized polyethylene and polyethylene adipate' | N.d. |
| C.266 | Newman, B.A. Bound report on research in progress, latest bibliographical reference 1962. | c 1962 |
| C.267-C.273 | Odell, J.A. | 1960s-1982, n.d. |
| C.267 | Manuscript report on research | 1960s |
| C.268 | 'Jeff - The File' | N.d. /... |

Research, C.1-C.463

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|--------------|--|-------------|
| /... | Contents of folder so inscribed: miscellaneous material. Includes photographic data. | |
| C.269 | Material <i>re</i> research application for Odell | 1982 |
| C.270-C.273 | Photographs of crystal specimens sent to Odell by David [?Grubb] 4 folders. | N.d. |
| C.274, C.275 | Overbergh, N. Correspondence; manuscript note on 'Irradiation of IPS'; graphs; photographs. 2 folders. | 1975 |
| C.276, C.277 | Patel, G.N. Miscellaneous material found in folder inscribed 'Patel's work'. 2 folders. | 1960s, 1978 |
| C.278, C.279 | Pope, D.P. | 1974-1978 |
| C.278 | Manuscript and photocopy manuscript research reports | 1974-1975 |
| C.279 | Correspondence and papers on work on samples of polystyrene | 1975, 1978 |
| C.280, C.281 | Ramesh, C. Data found in envelopes inscribed 'Dr C. Ramesh. IR Anna's data'. 2 folders. | 1993 |

Research, C.1-C.463

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|-------------|---|------------------|
| C.282-C.286 | Sadler, D.M. Sadler was a Research Associate at Bristol 1972-1980 and Research Fellow from 1980. | 1980-1981, n.d. |
| C.282 | Typescript report on neutron scattering experiments | 1980 |
| C.283 | Research applications | 1981 |
| C.284 | Manuscript draft of research report for the period 1979-1981 | 1981 |
| C.285 | Photocopy manuscript 'Summary of analysis' | 1981 |
| C.286 | Photocopy manuscript 'Comparison between scattering curves from computer models and experimental WANS data' | N.d. |
| C.287 | Sluckin, T. 'Phenomenological theory of influence of flow on nematic-isotropic transition' | 1980 |
| C.288 | Spells, S.J. Miscellaneous material. | c 1981 |
| C.289-C.291 | Stejny, J. | 1980-1988, n.,d. |
| C.289 | Work on 'Analysis of CR-39 and the effect of additives', with manuscript data | 1983 |
| C.290 | Miscellaneous material | 1988 |

Research, C.1-C.463

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|-------|---|--------|
| C.291 | 'Statistics' Transparencies and manuscript rough draft, found in envelope so inscribed. | N.d. |
| C.292 | Tanaka, K. Manuscript note. | 1980 |
| C.293 | Ungar, G. Ph.D. thesis 'Crystalline Morphology and Irradiation Induced Processes in Polyethylene and n-Paraffins'. | 1979 |
| C.294 | 'Clara's' Contents of folder so inscribed: manuscript note on 'Polypropylene Polystyrene and high density Polyethylene-Polystyrene blends' | N.d. |
| C.295 | 'Francesca' Contents of folder so inscribed: manuscript notes and data. | N.d. |
| C.296 | Bound B.Sc. thesis Author unidentified. Photographic data intercalated at back of volume. | c 1992 |
| C.297 | 'Summary of observations. Elongational flow of HMNPE [...]' Not in Keller's hand. Author not identified. | 1986 |

Research, C.1-C.463

C.298-C.456 GRANT APPLICATIONS AND REPORTS 1963-1999

Arranged alphabetically by grant giving body.

C.298 Agricultural Research Council 1977-1978

Brief correspondence only.

C.299 Arthritis and Rheumatism Council 1971, 1977

Applications for: 'Molecular structure, shape and properties of the mucopolysaccharides associated with connective tissue' (1971); 'Investigation of mechanical behaviour and crimp morphology in diseased collagen tissues' (1977).

C.300 British Aerospace 1987

Correspondence and papers *re* British Aerospace support of work at Bristol.

C.301 British Council 1987

Correspondence *re* British/Spanish Joint Research Programme.

C.302 British Nylon Spinners Ltd 1963

Report on 'Electron microscopy of polymers. Part III [...] by P.H. Harris

Keller and F.C. Frank are on the circulation list.

C.303-C.310 British Petroleum 1974-1991

See also G.6-G.8

Research, C.1-C.463

| | | |
|--------------------|---|------------------|
| C.303 | Correspondence <i>re</i> research | 1974-1975 |
| C.304 | Research proposal on 'Extending chains; a new approach to macromolecular science' | 1984 |
| C.305 | Correspondence <i>re</i> BP research support | 1984-1987 |
| C.306 | Correspondence <i>re</i> BP Venture Research support | 1988 |
| C.307 | Correspondence <i>re</i> BP Venture Research support | 1989 |
| C.308 | Correspondence <i>re</i> BP Venture Research support | 1990 |
| C.309 | Correspondence and papers | 1990-1991 |
| C.310 | 10pp typescript paper on 'transition dynamics of large molecules' inscribed 'File BP' | N.d. |
| C.311-C.313 | Commission of the European Communities | 1985-1995 |
| C.311 | Correspondence and papers <i>re</i> application with V. Petraccone, University of Naples, 'Self reinforced composites based on semicrystalline thermoplastic polymers for structural appliances' BRITE Proposal P.1146-85. | 1985 |
| C.312, C.313 | Correspondence and papers <i>re</i> application with S. Piccarolo et al, 'Structure formation in semi-crystalline polymers during processing' BRITE III Proposal. 2 folders. | 1994-1995 |

Research, C.1-C.463

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|--------------------|---|-----------------------------|
| C.314 | Courtaulds Educational Trust Fund | 1971 |
| | Correspondence and papers <i>re</i> application, 'Alignment of molecules in elongational flow'. | |
| C.315 | Daiwa Anglo-Japanese Foundation | 1992-1993 |
| | Correspondence and papers <i>re</i> application. | |
| C.316 | Department of Scientific and Industrial Research | 1965 |
| | Application: 'Relation between structure and properties of high polymers' | |
| C.317 | Du Pont de Nemours International | 1967, 1984, 1985 |
| | Brief correspondence <i>re</i> support of research. | |
| C.318-C.322 | Dutch State Mines (DSM) | 1989-1993 |
| | Correspondence and papers relating to DSM support of research at the University of Bristol. | |
| | Keller served as a consultant to DSM (see G.66-G.68), and conducted individual research with DSM employees. | |
| C.318 | 1989-1990 | |
| C.319 | 1991 | |
| C.320 | 1992 January-August | |
| C.321 | 1992 October-December | |

Research, C.1-C.463

- C.322 Contents of Keller's folder inscribed 'DSM report July 1993': draft
- C.323-C.327 Engineering and Physical Sciences Research Council 1995-1999**
- This was a successor body to the Science and Engineering Research Council (see C.416-C.438).
- C.323 'Physical property enhancement of profile extrusion by purposeful control of polymer microstructure', GR/G/16922 1995
Re application.
- C.324 'Identification and use of the low friction regime for soft solids under shear' 1996-1997
Re application.
This application was led by Brunel University.
- C.325, C.326 'Surface effects during the flow of polymer melts' 1998
This application was led by Brunel University.
- C.325 *Re* application
- C.326 Miscellaneous papers, parts of draft applications etc found with preceding
- C.327 'Crystallisation and melting in dilute polymer solutions' 1999
Application, with Bristol colleagues P.J. Barham and S. Hanna.

Research, C.1-C.463

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| C.328-C.338 | Imperial Chemical Industries | 1974-1991 |
| | For CASE and CAPS studentships see the Science Research Council and Science and Engineering Research Council. Keller was a consultant for ICI (see G.76-G.81). | |
| C.328-C.335 | Joint Research Proposals Correspondence <i>re</i> proposals, draft and final applications, etc. | 1974-1984, n.d. |
| C.328, C.329 | 'Elongational flow; chain orientation, crystallization and other effects as related to applications' 2 folders. | 1974 |
| C.330 | 'Novel methods for producing oriented polymers with improved properties' | 1976 |
| C.331-C.333 | 'Ultra-oriented polymers with improved properties' 3 folders. This was a continuation of 'Novel methods for producing oriented polymers with improved properties' (C.330). | 1977-1979 |
| C.334 | 'Structure-property relationships in Biopol copolymers' | 1984 |
| C.335 | 'Study of the formation of shish-kebab fibrous formation and its consequences' Proposal only. | N.d. |
| C.336, C.337 | Research Fellowships 2 folders. | 1974-1979, n.d. |

Research, C.1-C.463

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| C.338 | General and miscellaneous Includes 1991 correspondence <i>re</i> Keller's concerns for the future of polymer physics at Bristol. | 1977, 1991 |
| C.339-C.342 | Medical Research Council Correspondence <i>re</i> proposals, draft and final applications, etc. | 1970-1986 |
| C.339 | Application: 'Microstructure and properties of biologically significant polymers' | 1970 |
| C.340 | Application: 'Collagen: relation between the nature of the cross-links and the mechanical properties of the fibre' | 1978-1979 |
| C.341 | 'Peridontal membrane' 1p manuscript report on work for the MRC. Not otherwise documented. | 1978 |
| C.342 | Application: 'Investigation of the molecular organisation of the collagen fibre' | 1980, 1986 |
| C.343-C.348 | Ministry of Aviation The bulk of this material relates to Keller's rolling grant from 1962, 'The effect of crystalline structure on the properties of high polymers'. The Ministry of Aviation was abolished in 1967 and the grant was thereafter administered by the Ministry of Technology (See also Ministry of Technology). | 1965-1974 |
| C.343-C.347 | 'The effect of crystalline structure on the properties of high polymers' Includes reports, correspondence <i>re</i> renewals and terms of research contract, research staff employed etc. 5 folders. | 1965-1974 |

Research, C.1-C.463

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|--------------------|---|------------------------|
| C.348 | Untitled Ministry of Aviation research contract PD/34/013 | 1966 |
| C.349 | Ministry of Defence | 1973-1975 |
| | Correspondence and papers <i>re</i> application, 'Solidification of polymers with relevance to melt processing etc'. This grant was first proposed to the Ministry of Technology but came under the auspices of the Ministry of Defence in 1975. | |
| C.350-C.353 | Ministry of Technology | 1972-1977, n.d. |
| | The bulk of this material relates to Keller's grant, 'Influence of melt processing on structure and properties of injection moulded crystalline polymers'. | |
| C.350-C.352 | 'Influence of melt processing on structure and properties of injection moulded crystalline polymers'. Includes reports, correspondence <i>re</i> renewals and terms of research contract, research staff employed etc. 3 folders. | 1972-1977 |
| C.353 | Miscellaneous material found with Ministry of Technology papers | 1974, n.d. |
| C.354 | Muscular Dystrophy Group | 1977 |
| | One letter only. | |
| C.355 | NATO | 1978-1979 |
| | Correspondence and papers <i>re</i> application, 'Raman intensity and frequency spectroscopy of normal alkanes as model compounds for the understanding the structure of hydrocarbon polymers'. | |

Research, C.1-C.463

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|--------------------|---|------------------|
| C.356 | Royal Society | N.d. |
| | Untitled 'Research project' | |
| C.357-C.415 | Science Research Council | 1965-1984 |
| | See also Science and Engineering Research Council (C.416-C.438) | |
| C.357-C.401 | Research grants | 1965-1984 |
| | This material includes grant applications, progress and final reports on the grant, and correspondence with the SRC and the university <i>re</i> grant administration and research workers. | |
| C.357-C.362 | 'Relation between structure and properties of high polymers', B/SR/2430 | 1965-1975 |
| | This grant ran 1965-1974. | |
| | 6 folders. | |
| C.363-C.366 | 'Structure and properties of Collagen', B/RG/0950 | 1971-1978 |
| | This grant ran 1971-1977. The final report is at C.366. | |
| | 4 folders. | |
| C.367 | 'Structure and properties of polymers: a new approach', B/RG/1576 | 1972 |
| | This grant ran 1972. | |
| C.368 | Senior Visiting Fellowship for E. Martuscelli, B/RG/3095 | 1972 |
| | This grant ran 1972. | |

Research, C.1-C.463

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|--------------|--|-----------|
| C.369 | 'Electronmicroscopy, microstructure and deformation of crystalline bulk polymers', B/RG/3096 | 1972 |
| | This application was to run 1972-1975. | |
| C.370, C.371 | 'Characterization of polymer crystallinity by low frequency Raman spectroscopy', B/RG/1959 | 1972-1974 |
| | This grant ran 1972-1973. | |
| | 2 folders. | |
| C.372-C.375 | 'Microstructure of polymers and its influence on properties', B/RG/4562 | 1972-1976 |
| | This grant ran 1972-1975. The final report is at C.375. | |
| | 4 folders. | |
| C.376 | 'Raman spectroscopy of Coordination Compounds', B/SR/8383 | 1973 |
| | Application submitted by P.L. Goggin. | |
| C.377 | Senior Visiting Fellowship for F.P. Price, B/RG/6564.6 | 1973-1975 |
| | This grant ran 1974-1975 | |
| C.378 | Senior Visiting Fellowship for J.H. Magill, B/RG/7992.6 | 1974-1976 |
| | This grant ran 1975. | |
| | See C.234-C.236. | |
| C.379, C.380 | 'Low frequency Raman Spectroscopy for the study of polymer crystal morphology', B/RG/7143.2 | 1974-1977 |
| | This grant ran 1974-1976. The final report is at C.380. | |
| | 2 folders. | |

Research, C.1-C.463

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| C.381 | 'Superstructure and related properties of collagen', B/RG/6565.3 | 1973 |
| | This application was to run 1975-1977. | |
| C.382-C.384 | 'Polymer crystallization and microstructure in relation to mechanical properties, molecular homogeneity, flow and processing', GRA/A/0285.5 | 1975-1978 |
| | The grant ran 1976-1978. | |
| | 3 folders. | |
| C.385, C.386 | 'Fine structure of crystalline polymers as studied by scanning transmission electron-microscopy', GR/A/2563.2 | 1976-1978 |
| | This grant ran 1977-1980. | |
| | 2 folders. | |
| C.387 | 'Elongational flow induced chain extension in stiff macromolecules especially biological polyelectrolytes', GR/A/6174.6 | 1978 |
| | Application to run 1978-1980 | |
| C.388, C.389 | 'Polymer adsorption layers and their implications for polymer processing', GR/A/7795.2 | 1977-1979 |
| | Application made with M.J. Folkes of Brunel University to run 1978-1979. | |
| | 2 folders. | |
| C.390 | 'Polymer crystallinity: relation to molecular structure, properties and fabrication', GR/A/5333.8 | 1977-1979 |
| | This grant ran 1978-1979 | |
| C.391 | 'Crystallisation, microstructure and related issues in polymers: relevance to properties', GR/A/8332.8 | 1978-1979 |
| | This grant ran from 1979. | |

Research, C.1-C.463

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| C.392 | 'Characterization of materials using Fourier Transform infrared spectroscopy (FTIR)', GR/B/0516.4 Application, 1979. | 1979 |
| C.393 | 'Two dimensional position sensitive x-ray counter for polymers', GR/B/0884.4 Application, 1979. | 1979 |
| C.394 | 'Gel permeation chromatography in aid of research on polymer crystallization and microstructure', GR/B/0487.7 This application was for the purchase of equipment in 1979. | 1979 |
| C.395, C.396 | 'Gel forming crystallization of polyolefins and its wider implications', GR/A/9344.0 This grant ran 1979-1984. Continued under SERC auspices. Final report is at C.396. 2 folders. | 1979-1984 |
| C.397-C.401 | Other research applications | 1967-1975 |
| C.397 | 'The application of convergent-beam and scanning transmission electron microscopy' Application by J.W.Steeds. | 1967 |
| C.398 | 'Alignment of macromolecules in elongational flow' Application withdrawn. | 1971 |
| C.399 | 'Structure and properties of polymers: a new approach to electron microscopy' | 1971 |

Research, C.1-C.463

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| C.400 | 'The trajectory of polymer chains within crystals' Application to use reactor facilities. | 1975 |
| C.401 | Application for Senior Visiting Research Fellowship for F.R.N. Nabarro. It was envisaged Nabarro would spend his time on a number of SRC funded projects. | 1975 |
| C.402-C.404 | General reports on research Typescript reports sent to indicate polymer group strategy and requirements. | 1969-c 1970 |
| C.402 | 'Report on polymer research under the supervision or in association with A. Keller. Period: February 1968-April 1969 inclusive' | 1969 |
| C.403 | Additions to preceding, August | 1969 |
| C.404 | 'Proposal for Polymer Research at H.H. Wills Physics Laboratory' | c 1970 |
| C.405-C.407 | CAPS and CASE awards The SRC awarded Co-operative Awards in Pure Science (later Co-operative Awards in Pure Science and Engineering, see C.433-C.435) to encourage co-operation between academic science departments and industry. | 1971-1976 |
| C.405 | 'Crystalline texture of polytetrafluorethylene' In association with Wilkinson Sword (Research) Ltd. | 1971-1973 |
| C.406 | 'Crystalline texture in fibres forming polymers as related to spinning and drawing' In association with ICI Fibres Ltd | 1971 |

Research, C.1-C.463

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|---------------|---|-----------|
| C.407 | CASE ICI studentships | 1973-1976 |
| C.408, C.408A | SRC Engineering Board Polymer Science Panel visit to Bristol, 24 October 1972 | 1972 |
| C.408 | Correspondence <i>re</i> arrangements and arising | |
| C.408A | Papers for the visit Retained in original binding. | |
| C.409-C.412 | SRC Engineering Board Non-Metallics Subcommittee visit to Bristol, 6 December 1974 | 1974 |
| C.409 | Papers for visit | |
| C.410, C.411 | 'Polymer research in the H.H. Wills Physics Laboratory' In five parts. 2 folders. | 1973-1974 |
| C.412 | Manuscript notes | |
| C.413-C.415 | Miscellaneous SRC correspondence Correspondence <i>re</i> individual students, SRC policy etc. | 1966-1979 |
| C.413 | 1966-1969 | |
| C.414 | 1970-1974 | |
| C.415 | 1975-1979 | |

Research, C.1-C.463

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|-------------|--|------------------|
| C.416-C.438 | Science and Engineering Research Council | 1981-1992 |
| | The SERC replaced the SRC (C.357-C.415). | |
| C.416-C.432 | Research grants | 1981-1991 |
| | This material includes grant applications, progress and final reports on the grant, and correspondence with the SERC and the university <i>re</i> grant administration and research workers. | |
| C.416-C.423 | 'Crystallisation, microstructure and related issues in polymers: relevance to properties' | 1981-1989 |
| | This was Keller's major rolling research grant employing up to seven research and technician posts. It had successive reference numbers GR/B/92164, GR/C/75406, GR/D/64490 and GR/E/78142. | |
| | 8 folders. | |
| C.424 | 'Hydrodynamic influence of dissolved macromolecules; the physics of entanglements', GR/C/62925 | 1985-1987 |
| | This grant ran 1983-1987. | |
| C.425 | 'Positron sensitive x-ray counter for use', GR/C/37725 | 1986 |
| | This grant ran 1983-1986. | |
| C.426-C.429 | 'Crystallization behaviour of synthetic polymers', GR/D/47752 | 1985-1991 |
| | This grant ran 1985-1988. | |
| | Chiefly <i>re</i> use of Synchrotron Radiation Source at Daresbury Laboratory. C.429 is material for application for follow up grant. | |
| | 4 folders. | |

Research, C.1-C.463

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|-------------|--|--------------|
| C.430 | 'Crystallization behaviour of synthetic polymers', GR/D/47752 This grant ran 1985-1990. | 1985-1990 |
| C.431 | 'Crystalline, microstructure, related behaviour and relevance to properties of long chain molecules', GR/F/78842 Application. | 1990 |
| C.432 | 'Physical property enhancement of thermoplastics profile extrusions by purposeful control of polymer structures', GR/G/16922 This grant ran 1990-1994. | 1990-1991 |
| C.433-C.435 | CAPS awards The SERC awarded Co-operative Awards in Pure Science and Engineering (CAPS awards) to encourage co- operation between academic science departments and industry. | 1984-1986 |
| C.433 | CAPS ICI applications | 1984-1986 |
| C.434 | CAPS Edeco Developments application | 1985-1986 |
| C.435 | CAPS National Physical Laboratory application | 1985-1986 |
| C.436,C.437 | Other awards etc | c 1986, 1992 |
| C.436 | Photocopy manuscript note on grants. | c 1986 |
| C.437 | Application for use of European Synchrotron Facility | 1992 |

Research, C.1-C.463

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|--------------------|--|------------------|
| C.438 | Miscellaneous SERC correspondence Includes arrangements for visiting panels to the Bristol physics department, 1983 and 1985. | 1983-1988 |
| C.439-C.444 | United States Air Force (USAF) | 1979-1996 |
| C.439, C.440 | Research project 'Orientability of rigid macromolecules' Includes visit to Dayton, Ohio, for 'Ordered Polymers Research Review', June 1979. 2 folders. | 1978-1979 |
| C.441 | Window on Science visit to the USAF Materials Laboratory, Dayton, Ohio Correspondence <i>re</i> arrangements; Keller's report. Keller visited the Laboratory in May 1989 to give a seminar and to advise on work on progress for the USAF. | 1988-1989 |
| C.442 | Research project on Rheological characterization of PBZT, PBO-PPA | 1992, 1994 |
| C.443 | Window on Science visit to the USAF Materials Laboratory, Dayton, Ohio Correspondence <i>re</i> arrangements; Keller's report. Keller visited the USAF Wright Laboratories in April 1996 to give a seminar and to discuss work in progress. | 1995-1996 |
| C.444 | Research proposals arising from visit in April 1996 Three 'White Paper' proposals: 'Shear induced textures and orientations in liquid crystal polymer materials', 'Polymer melt in confined spaces, the influence of surfaces' and 'A special melt flow effect in polymers; its utilization for extrusion'. | 1996 |

Research, C.1-C.463

| | | |
|---------------------|---|------------------|
| C.445-C.452 | United States Army | 1983-1992 |
| | Research projects commissioned by the European Research Office of the US Army. | |
| C.445-C.449 | 'Hierarchical structure in polymeric solids and its influence on properties', DAJA45-85-C-0004 | 1983-1989 |
| | This grant ran 1984-1988 and was renewed into 1989. | |
| | 5 folders. | |
| C.450-C.452 | 'Hierarchical structure in advanced polymers; phase behaviour, orientation, properties', DAJA45-89-C-0021 | 1989-1992 |
| | This grant ran 1989-1992. | |
| | Also includes correspondence relating to US Army contract AMXSN-UK-FO 6011-MS-01. | |
| | 3 folders. | |
| C.453 | Wellcome Trust | 1977 |
| | Application on behalf of L.J. Gathercole. | |
| C.454-C.456 | 3M | 1992-1995 |
| | Correspondence and papers <i>re</i> research projects. | |
| | Keller was a consultant for 3M (G.175-G.177) and also visited 3M's Technical Development division, St Paul's, Minnesota to give courses on polymers, see F.361. | |
| C.454 | 'The behaviour of polymers with emphasis on polyolefins' | 1992-1993 |
| | This grant ran 1992-1993. | |
| C.455, C.456 | 'Proposal for the study of polymeric melts' | 1993-1995 |
| | This grant ran 1993-1996, although Keller's involvement | |

Research, C.1-C.463

ended in 1995 when it was transferred to Queen Mary College London.

2 folders.

| C.457-C.464 | PATENTS | 1971-1989, n.d. |
|--------------------|---|------------------------|
| C.457 | 'A special extrusion process for the preparation of macroscopic "single crystals" of an S-B-S copolymer' Specification in names of Keller, M.J. Folkes and F.P. Scalisi; correspondence. | 1971 |
| C.458 | 'Persistently extensional flow in liquid', application 29840/72 Provisional specification in names of Keller, F.C. Frank and M.R. Mackley; correspondence from ICI. | 1972-1973 |
| C.459 | 'Polymers, their production and their use in electron and ion beams resists suitable for use in microlithography', 8500360 Application; correspondence. | 1984-1985 |
| C.460 | Method of heat treating polyolefin films, 7927412 Correspondence <i>re</i> patent application. | 1984 |
| C.461 | 'Ellipsoidal Particles' Application; correspondence. | 1988 |
| C.462 | 'Process and device for the preparation of continuous objects of plastic' Application; correspondence. | 1989 |

Research, C.1-C.463

| | | |
|-------|---|------|
| C.463 | Gel processing of polyolefins' Correspondence <i>re</i> patent application 1979. | 1989 |
| C.464 | Manuscript note <i>re</i> possible patent from C. Carr | N.d. |

SECTION D PUBLICATIONS, D.1-D.412 1948-1999

D.1-D.250 DRAFTS

D.251-D.267 FIGURES

D.268-D.378 EDITORIAL CORRESPONDENCE AND PAPERS

D.379-D.412 OFFPRINTS

D.1-D.250 DRAFTS 1957-1999, n.d.

Further correspondence regarding publications by Keller and colleagues can be found in Editorial correspondence at D.268-D.378.

D.1 'Large periods in polyethylene; the origin of low angle X-ray scattering', with A. O'Connor, *Nature*, vol 180 (1957) 1957

Typescript draft; letter from Director of Materials and Explosives Research and Development, Ministry of Supply, giving clearance for publication.

D.2 'Observations on single crystals in polymers - evidence for chain folding', for *British Journal of Applied Physics* but no evidence of publication 1957

Typescript draft; letter from Director of Materials and Explosives Research and Development, Ministry of Supply, giving clearance for publication.

D.3 'Deformation processes in polyethylene interpreted in terms of crystal plasticity', with F.C Frank and A. O'Connor, *Phil. Mag.*, vol 3 (1958) 1957

Typescript draft; figures; exchange with Director of Materials and Explosives Research and Development, Ministry of Supply, re clearance for publication.

Publications, D.1-D.412

- | | | |
|----------|--|------|
| D.4 | <p>'Study of single crystals and their association in polymers', with A. Connor, <i>Disc. Far. Soc.</i>, vol 25 (1958)</p> <p>Typescript draft; letter from Director of Materials and Explosives Research and Development, Ministry of Supply, giving clearance for publication.</p> | 1957 |
| D.5 | <p>Letters from Director of Materials and Explosives Research and Development, Ministry of Supply, giving clearance for publications</p> | 1957 |
| D.6 | <p>'Crystallinity effects on the electron microscopy of polyethylene', with A.W. Agard and F.C. Frank, <i>Phil. Mag.</i> vol 4 (1959)</p> <p>Typescript draft.</p> | 1958 |
| D.7, D.8 | <p>'Observations on single crystals of an isotactic polyolefin: morphology and chain packing in poly-4-methyl-pente-1', with F.C Frank and A. O'Connor, <i>Phil. Mag.</i>, vol 4 (1959)</p> <p>Typescript draft; figures; letter from Director of Materials and Explosives Research and Development, Ministry of Supply, giving clearance for publication.</p> <p>2 folders.</p> | 1958 |
| D.9 | <p>'Similarities between the behaviour of single crystals and that of the bulk material on annealing in polyethylene', with D.C. Bassett, <i>J. Polymer Sci.</i> vol 40 (1959)</p> <p>Typescript draft; letter from Director of Materials and Explosives Research and Development, Ministry of Supply, giving clearance for publication.</p> | 1959 |
| D.10 | <p>'Fibres naturelles et forme des chaines de polyethylene', with J.J. Point, G.A. Homes and A. O'Connnor, <i>Compt. rend.</i> vol 250 (1960)</p> <p>Typescript draft; letter from Director of Materials and Explosives Research and Development, Ministry of Supply, giving clearance for publication.</p> | 1958 |

Publications, D.1-D.412

- | | | |
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| D.11 | <p>'Draft for diffraction paper' for <i>Polymer</i>, c 1962</p> <p>Contents of folder so inscribed.</p> <p>Letter from Butterworths, publishers of <i>Polymer</i>, 1962; manuscript drafts; manuscript notes.</p> | 1962 |
| D.12 | <p>'A suggested method for measuring surface areas of small particles by means of a density gradient column', with T. Kawai, <i>Kolloid Z.</i> vol 195 (1964)</p> <p>2pp typescript.</p> | 1964 |
| D.13, D.14 | <p>'Crystal configurations and their relevance to the crystalline texture and crystallization mechanism of polymers', <i>Kolloid Z.</i> vol 197 (1964)</p> <p>28pp typescript; references; legends for figures; figures; exchange with publishers.</p> <p>2 folders.</p> | 1964 |
| D.15 | <p>'The effect of crystallization conditions on radiation induced cross-link formation in polyethylene. Part I. The basic radiation-solubility relationship', with T. Kawai, A. Charlesby and M.G. Ormerod, <i>Phil. Mag.</i> vol 12 (1965)</p> <p>Typescript draft + figures.</p> | 1965 |
| D.16 | <p>'Propriétés des copolymères biséquences Polyoxyéthylène-Polystyrène. IV Morphology of single crystals', with B. Lotz, A.J. Kovacs and G.A. Bassett, c 1966</p> <p>Figures.</p> | c 1966 |
| D.17 | <p>Review of: <i>Introduction to Polymer Crystallisation</i> by A. Sharples (Edward Arnold, 1966)</p> <p>3pp typescript.</p> | c 1966 |

Publications, D.1-D.412

- D.18 'X-ray and microscope observations on the texture and stability of polyethylene crystallized under pressure; some new observations on the triclinic crystal form', with P.J. Holdsworth, *J. Macromol. Sci. B1* (1967).
1967
Figures.
- D.19 'Experiments on the location of chain ends in monolayer single crystals of polyethylene', with D.J. Priest, *J. Macromol. Sci. Phys. B2* (1968).
1968
Figures.
- D.20 'Controlled crystal growing procedures in polyethylene involving self-seeding; some novel twinning habits', with D.J. Blundell, *J. Macromol. Sci. Phys. B2* (1968).
1968
Figures.
- D.21 'Macro-lattice from segregated amorphous phases of a three block copolymer', with E. Pedemonte and F.M. Willmouth, *Kolloid Z.* vol 238 (1970)
1970
Figures; proof copy.
- D.22 'Beam-induced changes in the scanning electron microscope of poly(oxymethylene)', with J.W. Heavens, J.M. Pope and J.W. Rowell, *J. Materials Science*, vol 5 (1970)
1970
Figures.
- D.23 'On the fold surface of single crystals as revealed by degradation methods', with E. Martuscelli, D.J. Priest and Y. Udagawa
c 1970
Duplicated typescript with manuscript annotations.
- D.24 'Further studies on polyethylene crystallized under stress: morphology, calorimetry and stress relaxation', with M. J. Hill, *J. Macromol. Sci. Phys. B5* (1971).
1971
Figures.

Publications, D.1-D.412

- | | | |
|------------|---|--------|
| D.25 | 'Interlamellae ties paper', latest bibliographical reference 1971 Contents of folder so inscribed: untitled manuscript draft; illustrations for figures. | c 1971 |
| D.26 | 'Elongational flow' Contents of folder so inscribed: untitled manuscript draft (?in F.C. Frank's hand); manuscript notes; photocopy manuscript 'Flow birefringence of polymer solutions in extensional flow' | c 1971 |
| D.27 | 'Crystallization of short aliphatic chains. Part I. General chain folding behaviour', with Y. Udagawa, <i>J. Polymer Sci. A-2</i> vol 10 (1972) Figures; correspondence <i>re</i> publication. | 1972 |
| D.28 | 'Crystallization of short aliphatic chains. Part II. An example of even fold surface with adjacent fold reentry and of a transition to chain extension', with L. D'Ilario and E. Martuscelli, <i>J. Polymer Sci. A-2</i> vol 10 (1972) Photocopy typescript and figures. | 1972 |
| D.29 | 'Origin of contrast effects in the electron microscopy of polymers. I. Polyethylene single crystals', with D.T. Grubb and G.W. Groves, <i>J. Materials Science</i> vol 7 (1972) Photocopy typescript and figures. | 1972 |
| D.30 | 'Origin of contrast effects in the electron microscopy of polymers. II. Polyethylene spherulites', with D.T. Grubb, <i>J. Materials Science</i> vol 7 (1972) Figures. | 1972 |
| D.31, D.32 | 'Collagen: ultrastructure and its relation to mechanical properties as a function of ageing', with J. Diamant, et al, <i>Proc. Roy. Soc. B.</i> vol 180 (1972). | 1970 |

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Photocopy draft dated 1970, appendix and figures.

2 folders.

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| D.33 | 'On the ultrastructure of mammalian tendon', with W.C. Dale et al, <i>Experientia</i> , vol 28 (1972) | 1972 |
| | Typescript draft + figures. | |
| | | |
| D.34, D.35 | 'Surface structure of polyethylene crystals as revealed by surface decoration III. Origin of mobilizable surfaces', with D.M. Sadler, <i>J. Macromol. Sci. Phys. B7</i> , (1973) | 1972 |
| | Manuscript and typescript rough draft; letter from D.M. Sadler, 1972; figures. | |
| | 2 folders. | |
| | | |
| D.36 | 'Morphology of block copolymers and its consequences', with M.J. Folkes, in <i>Block and Graft Copolymers</i> (Syracuse University Press, 1973) | 1973 |
| | Proof copy; figures. | |
| | | |
| D.37 | 'Macrolattice based on a lamellar morphology in an SBS copolymer', with J. Dlugosz and M.J. Folkes, <i>J. Polymer Sci. A-2</i> vol 11 (1973) | 1973 |
| | Figures; correspondence <i>re</i> publication. | |
| | | |
| D.38-D.40 | 'Fold length of single crystals of polystyrene; a conflict with crystallization theories at high supercoolings', with D.H. Jones et al, <i>J. Polymer Sci, A-2</i> vol 11 (1973) | 1973 |
| | Typescript and manuscript draft sections; figures; correspondence <i>re</i> publication. | |
| | 3 folders. | |
| | | |
| D.41 | 'Melting behaviour of virgin polyethylene folded chain crystals', with M. Girolamo, latest bibliographical reference 1973 | c 1973 |

Publications, D.1-D.412

The title has been amended in pencil from 'The true melting of virgin polyethylene folded chain crystals'.

Photocopy typescript and figures.

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|-------------------------------------|---|------|
| D.42 | 'The periodic wave pattern in native tendon collagen: correlation of polarising with scanning electron microscopy', with L.J. Gathercole and J.S. Shah, <i>J. Microscopy</i> vol 102 (1974) | 1974 |
| Photocopy typescript; figures. | | |
| D.43-D.46 | 'Light microscopic waveforms in collagenous tissues and their structural implications', in <i>Structure of Fibrous Biopolymers, Colston Symposia</i> vol 26 (1974) | 1974 |
| Photocopy typescript; figures. | | |
| 4 folders. | | |
| D.47 | 'Properties of single crystals of IPS at large supercoolings', with N. Overbergh and M. Girolamo, latest bibliographical reference 1974 | 1974 |
| Manuscript draft and figures. | | |
| D.48, D.49 | 'The many faces of order in solid polymers', <i>Plastics and Polymers</i> , vol 15 (1975) | 1975 |
| Typescript draft; captions; figure. | | |
| 2 folders. | | |
| D.50 | 'Radiation induced changes in physical properties of bulk polyethylene. I. Effect of crystallization conditions', with H. Jenkins, <i>J. Macromol. Sci. Phys.</i> B11 (1975) | 1975 |
| Figures. | | |
| D.51 | Untitled manuscript draft on gelation of isotactic polystyrene, latest bibliographical reference 1975 | 1975 |
| With manuscript notes etc. | | |

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- D.52 'Gelation-crystallization in isotactic polystyrene solutions and its implications to crystal morphology, to the origin and structure of gels and to the chemical homogeneity of polyolefins', with M. Girolamo et al, *J. Polymer Sci. Phys.* vol 14 (1976) 1974
- Earlier version under title 'Gelation of isotactic polystyrene as a proposed model for fringed micelle type crystallization', with M. Girolamo.
- Photocopy typescript draft with manuscript corrections; referees' comments 1974.
- D.53 'A re-examination of the necessity of the mosaic concept in polymer crystals', with I.R. Harrison et al, *Polymer* vol 17 (1976) 1976
- Typescript; correspondence *re* publication.
- D.54 'A current account of chain extension, fibrous crystallization, and fibre formation', *J. Polymer Sci. Polymer Symposium*, vol 58 (1977) 1977
- Typescript draft; references and figures.
- D.55, D.56 'Alignment of macromolecules in solution by elongational flow; a study of the effect of pure shear in a four roll mill', with D.P. Pope, *Colloid and Polymer Sci.*, vol. 255 (1977) 1977
- Figures.
- 2 folders.
- D.57 'Long-period changes on annealing of doubly oriented nylon 66', with D.P. Pope, *J. Macromol. Sci. Phys.* B13 (1977) 1977
- Figures.
- D.58 'Deformation of oriented polyethylene - additional effects observed at high temperatures', with D.P. Pope, *J. Materials Science* vol 12 (1977) 1977
- Abstract; figures.

Publications, D.1-D.412

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|------------|--|------------|
| D.59 | 'Polymer research in the H.H. Wills Physics Laboratory, University of Bristol', <i>J. Polymer Sci. Polymer Letters</i> , vol 15 (1977) | 1975, 1976 |
| | Photocopy typescript draft dated 1976; correspondence with editor. | |
| D.60 | 'Direct ram extrusion of polyethylene; a correlation between chain-folding and tensile modulus', with C.J. Farrell, <i>J. Materials Science</i> , vol 12 (1977) | 1977 |
| | Figures. | |
| D.61-D.69 | Papers on 'Solution grown isotactic polystyrene crystals' | 1977 |
| | Keller, N. Overbergh, D.M. Sadler and M. Girolamo co-authored two papers in this series, published in <i>J. Polymer Sci. Polymer Physics.</i> , vol 15 (1977): 'I. Degree and distribution of crystallinity; thermal stability' (Keller, Overbergh and Girolamo) and 'II. Kinetics of thermal changes by X-ray diffraction', (Keller, Overbergh and Sadler). | |
| | Some of the material is difficult to assign to either paper. | |
| D.61, D.62 | 'I. Degree and distribution of crystallinity; thermal stability' | |
| | Typescript draft; figures. | |
| | 2 folders. | |
| D.63, D.64 | 'II. Kinetics of thermal changes by X-ray diffraction' | |
| | Typescript draft etc, figures. | |
| | 2 folders. | |
| D.65, D.66 | Various typescript and manuscript drafts. | |
| | 2 folders. | |

Publications, D.1-D.412

- D.67 'Reversibility and memory crystallisation of IPS single crystals', with Overbergh and Sadler

Photocopy manuscript draft found with the 'Solution grown isotactic polystyrene crystals' material.
- D.68 'Syndiotactic and fringed micellar crystallization as a source of thermal gelation in "isotactic polystyrene" ', with Girolamo et al

Incomplete typescript draft found with the 'Solution grown isotactic polystyrene crystals' material.
- D.69 Miscellaneous captions, figures
- D.70 'Polymer crystals' ?1977

Photocopy typescript; figures.

Possibly related to 'Polymer crystallization: a survey and salient current issues', *J. Polymer Sci. Polymer Symposium* vol 59, 1977.
- D.71, D.72 'A brief survey of chain folded crystallization in synthetic polymers with emphasis on short chains and with reference to biopolymers', latest bibliographical reference 1977 c 1977

Photocopy typescript; figures.

2 folders.
- D.73 'The observation of high polymer chain extension with two counter-rotating rollers', with C.J. Farrell, *Colloid and Polymer Sci.*, vol 256 (1978) 1978

Proof copy.
- D.74, D.75 'Early development of crimping in rat tail tendon collagen: a polarizing optical and SEM study', with L.J. Gathercole, *Micron*, vol 9 (1978) 1978

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- /... Rough typescript and manuscript sections of draft.
2 folders.
- D.76 'X-ray diffraction effects related to superstructure in rat tail tendon collagen', with L.J. Gathercole, *Biochimica et Biophysica Acta*, vol 535 (1978) 1978
Manuscript outline; photocopy typescript draft.
- D.77 'Gelation crystallization of poly(vinyl chloride)', with P.J. Lemstra and M. Cudby, *J. Polymer Sci. Phys.* vol 16 (1978) 1978
Photocopy typescript and figures.
- D.78, D.79 'A study of the chain extending effect of elongational flow in polymer solutions', with D.P. Pope, *Colloid and Polymer Science*, vol 256 (1978) 1977, 1978
Photocopy manuscript found in envelope marked 'Previous draft'; correspondence *re* publication.
2 folders.
- D.80 'A method for obtaining high modulus polyethylene from the melt: the influence of crystal nucleation', with J.A. Odell, *J. Polymer Sci. Polymer Symposium* vol 63 (1978) 1977
Based on lecture given at the Fraser Price Memorial Symposium, Amherst, Massachusetts, USA, 16 May 1977.
Figures.
- D.81 'Low temperature electron diffraction and beam effects in 1 tendon collagen', with L.J. Gathercole, F.P. Booy and J. Dlugosz, *Connective Tissue Research*, vol 5 (1978) 1978
Typescript draft.

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- D.82 'The structure of polyethylene, as revealed by solvent extraction', with M.M. Winram and D.T. Grubb, *J. Materials Science* vol 13 (1978) 1978
Typescript draft.
- D.83 'Routes to high modulus by ultra-orientation of flexible molecules' c 1978
Photocopy typescript introduction; figures.
- D.84 'Swelling of solution-grown crystals of polyethylene: some observations made by use of small-angle X-ray diffraction and low-frequency Raman spectroscopy', with G.V. Fraser et al, *J. Macromol. Sci. Phys.* B16 (1979) 1979
Figures.
- D.85 'Long range intermixing of paraffin molecules in the crystalline state' with G. Ungar, *Colloid and Polymer Sci.* vol 257 (1979) 1978, 1979
Submitted to *Nature* under similar title but not accepted for publication.
Correspondence with *Nature*, 1978; photocopy typescript of paper as sent to *Nature*; figures for revised draft.
- D.86 'Oriented polymers from solution. I. A novel method for producing polyethylene films', with A Coombes, *J. Polymer Sci.*, vol 17 (1979) 1979
Figures.
- D.87 'Electron microscope diffraction characterization of the fibrous structure of poly(sulphur nitride) crystals', with J. Stejny and D. Dlugosz, *J. Materials Science*, vol 14 (1979) 1979
Figures.
- D.88-D.90 'Neutron scattering of solution grown polymer crystals', with D.M. Sadler, *Science*, vol 19 (1979) 1979
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Publications, D.1-D.412

- /... Manuscript draft; untitled typescript draft; miscellaneous material.
3 folders.
- D.91 'A study on the location of radiation induced cross-links in polyethylene single crystals by selective degradation', with G.N. Patel et al 1970s
Figures.
- D.92 'Study of crystal texture in PVC gels by X-ray diffraction and infrared dichroism', with S.J. Guerrero et al, *J. Poly. Sci. Phys.*, vol 18 (1980) 1980
Figures.
- D.93 'Lamellar morphology of polyethylene: electron microscopy of a melt-crystallized sharp fraction', with D.T. Grubb, *J. Polymer Sci. Phys.* vol 18 (1980) 1980
- D.94 'On the hairdressing of shish-kebabs', with M.J. Hill and P.J. Barham, *Colloid and Polymer Science*, vol 258 (1980) 1980
Figures.
- D.95 'Gelation and the production of surface grown polyethylene fibres', with M.J. Hill and P.J. Barham, *Colloid and Polymer Science*, vol 258 (1980) 1980
- D.96 'Effect of radiation on the crystals of polyethylene and paraffins: 1. Formation of the hexagonal lattice and the destruction of crystallinity in polyethylene', with G. Ungar, *Polymer*, vol 21 (1980) 1980
- D.97 'Effect of radiation on the crystals of polyethylene and paraffins. 3. Irradiation in the electron microscope', with G. Ungar and D.T. Grubb, *Polymer*, vol 21 (1980) 1980
Figures.

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| D.98 | 'Conformational relaxation time in polymer solutions by elongational flow experiments: 1. Determination of extensional relaxation time and its molecular weight dependence', with C.J. Farrell et al, <i>Polymer</i> vol 21 (1980) Figures. | 1980 |
| D.99 | 'Conformational relaxation time in polymer solutions by elongational flow experiments: 2. preliminaries of further developments: chain retraction; identification of molecular weight fractions in a mixture', with M.J. Miles, <i>Polymer</i> , vol 21 (1980) Typescript draft; figures. | 1980 |
| D.100, D.101 | 'Crystalline polymers; an introduction', <i>Faraday Discussions of the Royal Society of Chemistry</i> , No. 68 (1980) Typescript draft; figures. 2 folders. | 1980 |
| D.102 | 'Phase segregation', latest bibliographical reference 1980 Contents of folder so inscribed: untitled manuscript and typescript draft; figures and tables. | c 1980 |
| D.103, D.104 | 'On the methodology of morphological and structure research in solid polymers', in eds. F. Ciardelli and P. Giusti, <i>Structural Order in Polymers</i> (Pergamon Press, 1981) Typescript. 2 folders. | 1981 |
| D.105 | 'Extended-chain structure for isotactic polystyrene: additional X-ray diffraction and calorimetric results', with E.D.T. Atkins et al, <i>Polymer</i> , vol 22 (1981) Letter to Ernest [?] from P.J. Lemstra enclosing x-ray photographs; photocopy typescript; manuscript notes. | 1981 |

Publications, D.1-D.412

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| D.106 | 'Hairdressing shish-kebabs by melting', with M.J. Hill, <i>Colloid and Polymer Science</i> , vol 259 (1981) Figures. | 1981 |
| D.107, D.108 | 'Study of texture in PVC gels by infra-red dichroism and X-ray diffraction', with S.J. Guerrero et al, <i>J. Macromolecular Sci. Phys.</i> , B20 (1981) Figures for early version; typescript summary and figures. 2 folders. | 1981 |
| D.109 | 'The gelation of PVC; characterization and control', with S.J. Guerrero, <i>J. Macromol. Sci. Phys.</i> , B20 (1981) Typescript summary and figures. | 1981 |
| D.110 | 'Structure changes in PVC at high temperatures as determined from X-ray diffractometer curves', with S.J. Guerrero and D. Meader, <i>J. Macromol. Sci. Phys.</i> B20 (1981) Typescript summary (under a slightly different title); figures. | 1981 |
| D.111-D.113 | 'Crystallization and morphology of nylon 6.6 crystals: 1. Solution crystallization and solution annealing behaviour', with J.H. Magill and M. Girolamo, <i>Polymer</i> , vol 22 (1981) Photocopy typescript; figures. 3 folders. | 1981 |
| D.114 | 'A new look at the crystallization of polyethylene: I. The initial fold length of melt crystallized material', with P.J. Barham et al, <i>J. Polymer Sci. Letters</i> vol 19 (1981) Typescript draft. | 1981 |

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- D.115 'Resolution of the paradox of extensive cross-linking and low tensile strength of cuverian tubules collagen from the sea cucumber *Holothuria forskali*', with A.J. Bailey et al, annotated 'Submitted: B.B. Acta 6/81' 1981
Photocopy typescript.
- D.116 'Effect of stirring on the gelation behaviour of high-density polyethylene solutions', with K.A. Narh and P.J. Barham, *Macromolecules*, vol 15 (1982) 1981, 1982
Referees' comments; 'Final' typescript draft.
- D.117, D.118 'Radiation effects and crystallinity in polyethylene and paraffins', Chapter 2 of *Developments in Crystalline Polymers*, ed. D.C. Bassett (Applied Science Publishers, 1982) 1982
Figures.
2 folders.
- D.119, D.120 'A new look at the crystallization of polyethylene. III crystallization from the melt at high supercoolings', with P. J. Barham and D.A Jarvis, *J. Polymer Sci. Polymer Physics* vol 20 (1982) 1982
Two photocopy manuscript drafts.
2 folders.
- D.121, D.122 'The effect of viscometer surface material on the measurement of viscosity', with R. Hikmet et al, latest bibliographical reference 1982 c 1982
Photocopy typescript draft; photocopy manuscript notes; manuscript graphs.
2 folders.
- D.123 'Diffusion and orientability of rigid-rod molecules', with J.A Odell and E.D.T. Atkins, *J. Polymer Sci. Letters*. vol 21 (1983) 1983
Photocopy typescript and figures.

Publications, D.1-D.412

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| D.124 | 'Concerning gelation effects in atactic polystyrene solutions', with E. Baer et al, dated September 1983 | 1983 |
| | No evidence of publication. | |
| | Photocopy typescript; covering letter from co-author A. Hiltner. | |
| D.125 | 'Trends in the search for strong and stiff fibres from flexible molecules', latest bibliographical reference 1983 | c 1983 |
| | Typescript draft. | |
| D.126-D.134 | 'Polymeric Structure' | c 1984 |
| | This draft, apparently based on a course of lectures, may have been published as chapters in the book <i>Polymers, Liquid Crystals, and Low-dimensional Solids</i> , eds. N. March and M. Tosi (Plenum, New York and London, 1984). | |
| D.126-D.130 | Photocopy typescript draft paginated i-v, 1-153 | |
| | 5 folders. | |
| D.131-D.134 | Figures | |
| | 4 folders. | |
| D.135, D.136 | Untitled draft on wide angle neutron scattering and Fourier Transform infra-red spectroscopy on solution-grown polyethylene, latest bibliographical reference 1984 | c 1984 |
| | Photocopy manuscript; figures. | |
| | 2 folders. | |
| D.137 | 'Review: High strength polyethylene fibres from solution and gel spinning', with P.J. Barham, <i>J. Materials. Science</i> vol 20 (1985) | 1985 |
| | Untitled typescript draft; annotated photocopy of offprint. | |

Publications, D.1-D.412

- D.138 'The spherulitic and lamellar morphology of melt-crystallized isotactic polypropylene', with D.R. Norton, *Polymer*, vol 26 (1985) 1984, 1985
Letter from I.M. Ward *re* publication, 1984; plates for figures; figures.
- D.139, D.140 'On hexagonal phases of paraffins and polyethylenes', with A.S. Vaughan, et al, *Polymer*, vol 26 (1985) 1985
Typescript draft; figures.
2 folders.
- D.141, D.142 'Adsorption-entanglement layers in flowing high-molecular weight polymer solutions: I. Direct observation of layer formation', with R.A.M. Hikmet, et al, *Progress in Colloid and Polymer Science*, vol 71 (1985) 1985
Typescript draft; figures.
2 folders.
- D.143 'The crystallization of ultralong normal paraffins: the onset of chain folding', with G. Ungar et al, *Science*, vol 229 (1985) 1984, 1985
Correspondence with editor; figures.
- D.144 'When is a nucleation theory not a nucleation theory?', latest bibliographical reference 1985 c 1985
It is not clear whether this draft is by Keller or whether he was commenting upon it.
Typescript with extensive manuscript correction and annotation.
- D.145 'Fast growth rates of polyethylene single crystals grown at high temperatures and their relevance to crystallization theories', with S.J. Organ, *J. Polymer Sci. Polymer Phys.* vol 24 (1986) 1986
Figures.

Publications, D.1-D.412

- | | | |
|--------------|---|--------|
| D.146 | 'Flow-induced chain fracture of isolated linear macromolecules in solution', with J.A. Odell, <i>J. Polymer Sci.: Polymer Phys.</i> , vol 24 (1986) Figures. | 1986 |
| D.147 | 'Adsorption-entanglement layers in flowing high molecular weight polymer solutions II. The effect of the nature of the surface', with K.A. Narh et al, <i>Colloid and Polymer Science</i> , vol 264 (1986) Photocopy typescript and figures. | 1986 |
| D.148 | 'Adsorption-entanglement layers in flowing high molecular weight polymer solutions III: solution concentration and solvent power', with P.J. Barham et al, <i>Colloid and Polymer Science</i> , vol 264 (1986) Photocopy typescript and figures. | 1986 |
| D.149, D.150 | 'Time-resolved synchrotron x-ray study of chain-folded crystallization of long paraffins', with G. Ungar, <i>Polymer</i> , vol 27 (1986) Photocopy typescript draft; figures. 2 folders. | 1986 |
| D.151 | 'Adsorption entanglement layers and flow induced phase separation in high molecular weight polymer solutions', with P.J. Barham and R.A.M. Hikmet, latest bibliographical reference 1986 Typescript draft; figures; unfinished letter to Hikmet. | c 1986 |
| D.152, D.153 | 'Production of an oriented polyethylene fibre directly from melt spinning', with Z. Bashir and J.A. Odell, c 1986 Contents of folder so inscribed: manuscript draft; figures (D.142). The original folder with extensive manuscript annotation commenting on the draft within is at D.153. 2 folders. | c 1986 |

Publications, D.1-D.412

- D.154 'Inversion of the temperature dependence of crystallization rates due to onset of chain folding', with G. Ungar, *Polymer*, vol 28 (1987) 1986, 1987
Letters from editors; 'Revised' photocopy typescript draft.
- D.155, D.156 'X-linked ultra high strength polyethylene fibres', with R.A.M. Hikmet and P.J. Lemstra, *Colloid and Polymer Science*, vol 265 (1987) 1987
Photocopy manuscript draft; typescript drafts and figures; referees' comments.
2 folders.
- D.157 'On the crystal texture of linear polyaryls (PEEK, PEK and PPS)', with A.J. Waddon et al, *J. Materials Science*, vol 22 (1987) 1987
Typescript draft.
- D.158 'The onset of chain folding in ultralong n-alkanes: an electron microscopic study of solution-grown crystals', with S.J. Organ, *J. Polymer Sci. Polymer Phys.*, vol 25 (1987) 1986-1987
Correspondence with editors, including referee's report.
- D.159 'X-ray evidence for sharp chain folds in crystalline linear alkanes', with G. Ungar and S.J. Organ, *J. Polymer Sci. Polymer Letters* vol 26 (1988) 1988
Correspondence with editors; typescript draft.
- D.160 'Two-fluid phase separation: modified by a glass transition', with F.C. Frank, *Polymer Communications* vol 29 (1988) 1988
Photocopy typescript draft; proof copy with related correspondence.

Publications, D.1-D.412

- | | | |
|--------------|--|-------------|
| D.161 | 'Direct evidence that an extended chain single crystal of polyethylene can be formed and grow only in hexagonal phase via lamellar thickening', with M. Hikosaka et al, Letter to <i>Nature</i> , September 1988 | 1988 |
| | No evidence of publication. | |
| | Photocopy typescript draft; photocopy of covering letter from Hikosaka. | |
| D.161A | Obituary notice of D.M. Sadler for <i>Macromolecular Bulletin</i> , September 1988 | 1988 |
| | Typescript draft with covering letter. | |
| D.162, D.163 | Untitled paper beginning 'As well established, flexible polymer chains crystallize in a chain folded manner giving rise to lamellar crystals where the lamellar thickness corresponds to the chain length', with M. Hikosaka, 1988 | 1988 |
| | No evidence of publication. | |
| | Correspondence with Hikosaka; photocopy manuscript notes; photocopy typescript draft with manuscript annotations; etc. | |
| | 2 folders. | |
| D.164 | 'Rate minimum in solution crystallization of long paraffins', with S.J.Organ and G. Ungar, <i>Macromolecules</i> vol 22 (1989) | 1989 |
| | Photocopy typescript draft. | |
| D.165 | 'The entanglement of polyethylene molecules in semi-dilute solutions and their assessment', with K.A. Narh, c late 1980s-early 1990s | 1980s-1990s |
| | Incomplete manuscript draft; figures. | |
| D.166 | 'Polymer solution degradation: the combined effect of flow and temperature', with K.A. Narh et al., <i>Polymer Communications</i> vol 31 (1990) | 1990 |

Publications, D.1-D.412

- | | | |
|--------------|--|------------|
| D.167-D.170 | <p>'On thermoreversible gels: their classification, relation to phase transitions and vitrification, their morphology and properties', with S. Callister and R.A.M. Hikmet, <i>Makromol. Chem. Macromol. Symp.</i> vol 39 (1990)</p> <p>Letter from editor <i>re</i> amendments to draft; untitled typescript draft and typescript 'Penultimate' version; figures.</p> <p>4 folders.</p> | 1989, 1990 |
| D.171 | <p>'Flow-induced liquid-liquid phase separation and adsorption entanglement layer formation in high molecular weight polymer solutions', with P.J. Barham, <i>Macromolecules</i>, vol 23 (1990)</p> <p>Typescript draft; figures.</p> | 1990 |
| D.172-D.174A | <p>'Chain-folded crystallization of polymers from discovery to present day: a personalized journey', in <i>Sir Charles Frank, OBE, FRS. An Eightieth Birthday Tribute</i>, ed. R.G. Chambers et al (IOP Publishing, 1991)</p> <p>Correspondence with publishers; corrected pages, figures, etc.; typescript draft and figures.</p> <p>4 folders.</p> | 1989-1991 |
| D.175 | <p>'New crystallization mechanism of polymers - Lamellar thickening growth mechanism', submitted to <i>Polymer</i>, 7 May 1991</p> <p>Typescript draft.</p> | 1991 |
| D.176 | <p>'Elongational flow studies on DNA in aqueous solution and stress-induced scission of the double-helix molecule', latest bibliographical reference 1991</p> <p>No evidence of Keller's authorship.</p> <p>Typescript draft.</p> | c 1991 |

Publications, D.1-D.412

- D.177 'Thermodynamic anomalies in the pressure-temperature phase diagram of poly 4-methyl pentene-1: melting of crystals on cooling' , with S. Rastogi and M. Newman, *Progress in Colloid and Polymer Science*, vol 87 (1992) 1992
Typescript draft.
- D.178 'Investigations on the crystallization of polyethylene under high pressure: role of mobile phases, lamellar thickening growth, phase transformations and morphology', *J. Macromol. Sci. Physics B31* (1992) 1991
Letter from editor, May 1991.
- D.179, D.180 'Equilibrium triple point pressure and pressure-temperature phase diagram of polyethylene', with M. Hikosaka et al, *Polymer* vol 33 (1992) 1991
Correspondence *re* referee's comments; typescript draft; figures.
2 folders.
- D.181-D.184 'Macromolecules in flow fields; chain extension and crystallization', latest bibliographical reference 1992 1992
Manuscript draft; two typescript drafts; summaries in English and French; photocopy manuscript draft figures.
4 folders.
- D.185 Untitled draft on research on crystallization under elevated pressure c 1993
Incomplete typescript.
- D.186 'Pressure-induced amorphization and disordering on cooling in semicrystalline polymers; calorimetric evidence for inverse melting in one component system', with S. Rastogi and G. Höhne, latest bibliographical reference 1993 c 1993
Typescript draft.

Publications, D.1-D.412

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|--------------|--|------------|
| D.187-D.189 | 'An approach to the formation and growth of new phases with application to polymer crystallization: effect of finite size, metastability, and Ostwald's rule of stages', with M. Hikosaka et al, <i>J. Materials Science</i> , vol 29 (1994) | 1993, 1994 |
| | Correspondence <i>re</i> publication; typescript draft; appendices. | |
| | 3 folders. | |
| D.190, D.191 | 'A temperature window of reduced flow resistance in polyethylene with implications for melt flow rheology: 1. The basic effect and principal parameters', with J.W.H. Kolnaar, <i>Polymer</i> , vol 35 (1994) | 1993, 1994 |
| | Correspondence with publishers; typescript draft; proof copy. | |
| | 2 folders. | |
| D.192, D.193 | 'Large scale textures in nematic polyethers: 1. New aspects of formation', with M. Hoff et al, <i>Mol. Cryst. Liq. Cryst.</i> , vol 241 (1994) | 1993 |
| | Photocopy typescript; referees' comments; photocopy manuscript draft by Keller of revised version. | |
| | 2 folders. | |
| D.194, D.195 | 'Large scale textures in nematic polyethers: 2. New aspects of orientational order and structure hierarchy', with M. Hoff et al, <i>Mol. Cryst. Liq. Cryst.</i> , vol 241 (1994) | 1993 |
| | Photocopy typescript draft; referee's comment; typescript sections of revision. | |
| | 2 folders. | |
| D.196 | 'Structure formation in flowing melts', c 1994 | c 1994 |
| | Photocopy manuscript draft. | |

Publications, D.1-D.412

- D.197 'An approach to phase behaviour in polymers', 1995
Macromolecular Symposia vol 98 (1995)

Typescript draft.
- D.198, D.199 'Interrelation between crystallization and liquid crystal 1994
formation: a calorimetric and polarizing microscopical
study on a monotropic polymer system', with D. Heberer
and V. Percec, *Polymer*, vol (1995)

Correspondence with editor; typescript draft.

2 folders.
- D.200, D.201 'A temperature window of reduced flow resistance in 1994, 1995
polyethylene with implications for melt flow rheology: 2.
Rheological investigations in the extrusion window', with
J.W.H. Kolnaar, *Polymer*, vol 36 (1995)

Photocopy typescript draft and figures; proof copy with
typescript corrections.

2 folders.
- D.201A 'A temperature window of reduced flow resistance in 1995
polyethylene: in situ WAXS', with H.M.M. van Bilsen, et al,
Macromolecules, vol 28 (1995)

Correspondence *re* attribution of authorship of the paper;
typescript abstract and introduction.
- D.202-D.209 'Introductory Lecture; aspects of polymer gels', *Faraday c 1994
Discussions*, vol 101 (1995)
- D.202 Manuscript draft

3 folders.
- D.205-D.207 Sections of typescript draft

3 folders.

Publications, D.1-D.412

- D.208 Figures 1995
- D.209 Manuscript notes, typescript introduction etc.
- D.210 *Self Order and Form in Polymeric Materials*, ed. Keller, M. Warner and A.H. Windle (Chapman & Hall, London, 1995) 1995
- D.222 Draft of book cover, correspondence. 1995
- D.223-D.226 Keller et al contributed a chapter, 'The size factor in phase transitions: its role in polymer crystal formation and wider implications'. 1995-1997
- D.211 'Shish-kebab crystals from flowing solutions', c 1995 c 1995
- Photocopy manuscript draft.
- D.212 Untitled draft with summary beginning 'Of the variety of avenues arising from our preceding investigations of Professor Perec's (Cleveland) special synthesized mesogenic polyethers...' c 1995
- D.227 Typescript draft.
- D.213-D.218 'Polymer crystallization: fundamentals of structure and crystal growth of flexible chains', with G. Goldbeck-Wood, in eds G. Allen et al, *Comprehensive Polymer Science; Second Supplement* (Pergamon Press, 1996) 1995, 1996
- D.228 Two different typescript versions, of 103pp and 20pp.
- 6 folders.
- D.219 'The role of metastability in polymer phase transitions: new pointers through polymer mesophases', with M. Hikosaka and S. Rastogi, *Physica Scripta* vol T66 (1996) c 1995
- Rough manuscript draft.

Publications, D.1-D.412

| | | |
|--------------|---|-----------|
| D.240, D.241 | <p>'Unusual pressure-induced phase behaviour in crystalline poly-4-methyl pentene-1; calorimetric and spectroscopic results and further implications', with S. Rastogi and G.W.H. Höhne, submitted to <i>Macromolecules</i> 1998</p> <p>Correspondence with Rastogi <i>re</i> paper; referees' comments on paper; manuscript notes; typescript draft.</p> <p>2 folders.</p> | 1998-1999 |
| D.242 | <p>'Spiralling optical morphologies in spherulites of poly(hydroxybutyrate)'</p> <p>Typescript draft.</p> | 1990s |
| D.243 | <p>'Article for Newsletter' on research of the Polymer Group at Bristol University</p> <p>Typescript draft.</p> | 1990s |
| D.244 | <p>'Review paper: Carrington, Odell, Keller'</p> <p>Typescript draft.</p> | N.d. |
| D.245 | <p>'Structure - Morphology - Orientation'</p> <p>Manuscript and photocopied typescript (or printed) rough draft.</p> | N.d. |
| D.246 | <p>'Polystyrene gels'</p> <p>Photocopy manuscript draft.</p> | N.d. |
| D.247 | <p>Untitled draft on the mesomorphic state</p> <p>Rough manuscript and typescript.</p> | N.d. |
| D.248 | <p>Outline draft on work on DNA</p> <p>Typescript.</p> | N.d. |

Publications, D.1-D.412

| | | |
|--------------------|---|-------------|
| D.249 | 'Physical gelation' Typescript draft. | N.d. |
| D.250 | 'Two themes from recent work on LCPs: self-generated banded structures and competing crystallisation and liquid crystal formation in monotropic systems' Typescript draft. | N.d. |
| D.251-D.267 | FIGURES Set of plates and illustrations for figures for unidentified articles or groups of articles. Some found in envelopes or folders with a title inscribed thereon. | N.d. |
| D.251 | 'High Mod. Films. Prints' | |
| D.252-D.254 | 'Polymer crystal photographs' 3 folders. | |
| D.255-D.257 | 'SBS prints' 3 folders. | |
| D.258 | 'Self-nucleation paper' | |
| D.259 | 'Paper submitted to Polymer' | |
| D.260-D.263 | 'Chapters 1 & 2' 4 folders. | |

Publications, D.1-D.412

- D.264-D.267 Untitled sets of figures
4 folders.
- D.268-D.378 EDITORIAL PAPERS AND CORRESPONDENCE 1965-1999**
- Arranged in alphabetical order by journal title or publisher.
- D.268 Academic Press 1965, 1989
Invitation to write; request for advice.
- D.269 *Acta Crystallographica* 1972, 1986
Refereeing.
- D.270 Aldus Books Ltd 1967
Reproduction of illustration.
- D.271 Applied Science Publishers Ltd 1972-1984
Contributions to books published by Applied Science Publishers.
This was a company of Elsevier Science Publishers (D.280)
- D.272 Ben-Zvi Printing Enterprises Ltd 1984
Contribution to series *Polymer Liquid Crystals*.
- D.273 *British Polymer Journal* 1969-1973
Refereeing.

Publications, D.1-D.412

| | | |
|--------------|--|------------|
| D.274 | Cambridge University Press Possible contributions to books. | 1984, 1988 |
| D.275 | Chemical Society Chiefly refereeing. | 1967-1987 |
| D.276 | Clarendon Press, Oxford Possible book on Polymers. | 1967, 1972 |
| D.277, D.278 | <i>Colloid and Polymer Science</i> Keller joined the editorial board in 1973. | 1966-1997 |
| D.277 | Correspondence <i>re</i> editorial board membership and papers by Keller | 1966-1991 |
| D.278 | Refereeing | 1984-1997 |
| D.279 | <i>Connective Tissue Research</i> Article by Keller et al. | 1978 |
| D.280, D.281 | Elsevier Science Publishers Contributions to books published by Elsevier Applied Science Publishers and Elsevier Science Ltd. 2 folders. See also Applied Science Publishers Ltd, D.271 | 1986-1994 |
| D.282 | Hanser Publishing Requests to contribute. | 1990-1996 |

Publications, D.1-D.412

| | | |
|--------------|---|------------|
| D.283, D.284 | Institute of Physics Publishing Chiefly <i>re</i> review articles on polymer crystals. 2 folders. | 1965-1987 |
| D.285, D.286 | John Wiley & Sons Inc., Publishers Chiefly correspondence <i>re</i> contribution to the <i>Mark Encyclopedia of Polymer Science and Engineering</i> , 1983-1985. 2 folders. | 1973-1990 |
| D.287 | <i>Journal of Applied Crystallography</i> Refereeing. | 1970, 1978 |
| D.288 | <i>Journal of Applied Physics</i> Paper by Keller. | 1967-1968 |
| D.289, D.290 | <i>Journal of Applied Polymer Science</i> Chiefly refereeing. 2 folders. Keller was on the editorial board of the journal. | 1974-1998 |
| D.291, D.292 | <i>Journal of Crystal Growth</i> Keller was an associate editor of the journal. | 1967-1989 |
| D.291 | Editorial matters | 1967-1974 |
| D.292 | Refereeing | 1984-1989 |

Publications, D.1-D.412

| | | |
|-------------|---|---------------------|
| D.293-D.295 | <i>Journal of Macromolecular Physics</i> This was renamed the <i>Journal of Macromolecular Science – Physics</i> . | 1966-1997 |
| D.293 | Editorial policy etc | 1966, 1967, 1996 |
| D.294 | Refereeing | 1967, 1997 |
| D.295 | Papers by Keller | 1967-1991 |
| D.296-D.334 | <i>Journal of Materials Science</i> Keller joined the editorial board of the journal on its establishment in 1966. | 1965-1997 |
| D.296-D.303 | General editorial correspondence <i>Re</i> policy, editorial board etc. | 1965-1997 |
| D.296 | 1965 <i>Re</i> launch of journal | |
| D.297 | 1966 | |
| D.298 | 1967 | |
| D.299 | 1968 | |
| D.300 | 1972-1983 | |
| D.301 | 1984-1986 | |

Publications, D.1-D.412

| | | |
|--------------|--------------------------|-----------|
| D.302 | 1987-1989 | |
| D.303 | 1990-1997 | |
| D.304-D.318 | Editorial Board meetings | 1966-1997 |
| D.304 | 1966-1968 | |
| D.305 | 1973-1974 | |
| D.306 | 1975 | |
| D.307 | 1976-1978 | |
| D.308 | 1979 | |
| D.309 | 1985-1986 | |
| D.310 | 1987 | |
| D.311 | 1988 | |
| D.312, D.313 | 1989 2 folders. | |
| D.314 | 1990 | |
| D.315 | 1991-1993 | |

Publications, D.1-D.412

| | | |
|--------------|--|-----------|
| D.316 | 1996 | |
| D.317-D.321 | Correspondence <i>re</i> prospective articles and possible authors | 1967-1989 |
| D.317, D.318 | 1967 2 folders. | |
| D.319 | 1967-1979 | |
| D.320 | 1988 | |
| D.321 | 1989 | |
| D.322-D.333 | Refereeing | 1966-1991 |
| D.322 | 1966-1967 | |
| D.323 | 1968 | |
| D.324 | 1972 (1) | |
| D.325 | 1972 (2) | |
| D.326 | 1972 (3) | |
| D.327 | 1972 (4) | |
| D.328 | 1973-1974 | |

Publications, D.1-D.412

| | | |
|--------------|--|-----------|
| D.329 | 1975 | |
| D.330 | 1976-1977 | |
| D.331 | 1978-1979 | |
| D.332 | 1983-1985 | |
| D.333 | 1986-1991, n.d. | |
| D.334 | Correspondence <i>re</i> papers by Keller | 1968-1989 |
| D.335, D.336 | <i>Journal of Molecular Biology</i> Refereeing. 2 folders. | 1967-1987 |
| D.337-D.348 | <i>Journal of Polymer Science</i> Keller was a member of the editorial board. | 1966-1999 |
| D.337-D.339 | Editorial board correspondence | 1966-1999 |
| D.337 | 1966 | |
| D.338 | 1967-1977 | |
| D.339 | 1989-1999 | |

Publications, D.1-D.412

| | | |
|--------------|---|-----------|
| D.340-D.344 | Refereeing | 1966-1993 |
| D.340 | 1966-1967 | |
| D.341 | 1968-1971 | |
| D.342 | 1972-1979 | |
| D.343 | 1982-1986 | |
| D.344 | 1992-1993 | |
| D.345-D.348 | Correspondence <i>re</i> papers by Keller | 1967-1991 |
| D.345 | 1967-1970 | |
| D.346 | 1971-1975 | |
| D.347 | 1976-1979 | |
| D.348 | 1986-1991 | |
| D.349 | <i>Macromolecular Reports</i> <i>Re</i> invitation to serve on the editorial board (accepted). | 1989 |
| D.350-D.352 | <i>Macromolecules</i> | 1977-1998 |
| D.350, D.351 | Refereeing 2 folders. | 1977-1998 |

Publications, D.1-D.412

| | | |
|--------------|---|------------|
| D.352 | Correspondence <i>re</i> papers by Keller | 1977-1991 |
| D.353, D.354 | <i>Makromolekular Chemie</i> | 1968-1975 |
| D.353 | Correspondence <i>re</i> papers by Keller | 1968, 1971 |
| D.354 | Refereeing | 1974, 1975 |
| D.355 | Medical and Technical Publishers Co. Ltd Correspondence <i>re</i> contribution by Keller to MTP <i>International Review of Science.</i> | 1971-1973 |
| D.356, D.357 | <i>Nature</i> | 1968-1997 |
| D.356 | Refereeing | 1968-1997 |
| D.357 | Correspondence <i>re</i> papers by Keller etc | 1984-1991 |
| D.358 | Oxford University Press Request to contribute etc. | 1977-1982 |
| D.359 | Pergamon Press Miscellaneous correspondence. | 1966-1988 |
| D.360 | <i>Philosophical Magazine</i> Chiefly refereeing. | 1965-1979 |

Publications, D.1-D.412

| | | |
|--------------|--|------------|
| D.361 | <i>Physics Today</i> Correspondence <i>re</i> paper by Keller. | 1969-1970 |
| D.362 | Plastics and Rubber Institute Includes 3pp typescript review of plastics related research at Bristol by Keller. | 1970, 1977 |
| D.363-D.366 | <i>Polymer</i> | 1968-1998 |
| D.363, D.364 | Refereeing | 1968-1998 |
| D.363 | 1968-1979 | |
| D.364 | 1984-1998 | |
| D.365, D.366 | Correspondence <i>re</i> papers by Keller 2 folders. | 1969-1993 |
| D.367 | <i>Polymer Engineering and Science</i> Chiefly refereeing. | 1975-1988 |
| D.368 | <i>Progress in Materials Science</i> Correspondence <i>re</i> contribution by Keller. | 1968 |
| D.369 | <i>La Recherche</i> Correspondence <i>re</i> possible contribution by Keller. | 1970-1971 |
| D.370 | <i>Reviews on Polymer Research and Engineering</i> Invitation to join editorial board (accepted). | 1979 |

Publications, D.1-D.412

| | | |
|-------------|---|------------|
| D.370A | Royal Society Refereeing. | 1979 |
| D.371 | <i>Science</i> Miscellaneous correspondence. | 1978-1999 |
| D.372 | Society of Chemical Industry Miscellaneous correspondence. | 1968, 1971 |
| D.373-D.375 | Miscellaneous refereeing | |
| D.373 | 1968-1990 | |
| D.374 | 1994-1999 | |
| D.375 | N.d. | |
| D.376 | Miscellaneous requests for contributions | 1966-1990 |
| D.377 | Requests for reproduction rights. | 1970-1979 |
| D.378 | Miscellaneous editorial correspondence | 1969-1994 |

Publications, D.1-D.412

D.379-D.412

OFFPRINTS

1948-1998

This is an incomplete set of offprints and copies of Keller's publications. It dates from 1948 to 1998 and is arranged in chronological order.

| | |
|-------|-----------|
| D.379 | 1948-1959 |
| D.380 | 1960-1964 |
| D.381 | 1966-1967 |
| D.382 | 1968 |
| D.383 | 1969 |
| D.384 | 1970 |
| D.385 | 1971 |
| D.386 | 1972 |
| D.387 | 1973 |
| D.388 | 1974 |
| D.389 | 1975 |
| D.390 | 1976 |

Publications, D.1-D.412

D.391 1977

D.392 1978

D.393 1979

D.394 1980

D.395 1981

D.396 1982

D.397 1983

D.398 1984

D.399 1985

D.400 1986

D.401 1987

D.402 1988

D.403 1989

D.404 1990

Publications, D.1-D.412

| | |
|-------|------|
| D.405 | 1991 |
| D.406 | 1992 |
| D.407 | 1993 |
| D.408 | 1994 |
| D.409 | 1995 |
| D.410 | 1996 |
| D.411 | 1997 |
| D.412 | 1998 |

SECTION E LECTURES, E.1-E.289 1973-1999, n.d.

Principally contents of Keller's folders. Although most of the folders bear some inscription giving occasion, date and topic, few have all three. The material has therefore been divided into sequences to reflect this.

The bulk of the material is transparencies used as illustrations for lectures and talks. There may also be notes for the lecture, occasionally a script, and lists of transparencies and slides.

For University of Bristol teaching material, see B.82-B.122

| | |
|-------------|--------------------------|
| E.1-E.114 | CHRONOLOGICAL |
| E.115-E.237 | ALPHABETICAL BY TOPIC |
| E.238-E.261 | ALPHABETICAL BY OCCASION |
| E.262-E.289 | UNTITLED |

E.1-E.114 CHRONOLOGICAL 1973-1999

E.1, E.2 'Chain folding' 1973

Polymer Conference lecture series, University of Utah, USA.

Some notes in Hungarian.

2 folders.

E.3 'Bristol seminar Jan 1978' 1978

E.4, E.5 'Two general lectures. Cleveland Nov. 1978. 1) Self structural composite 2) Mark symposium (updated)' 1978

2 folders.

Lectures, E.1-E.289

| | | |
|------------|---|---------------------|
| E.6 | 'London Lecture 1978 Dec Oxford 1979 March' | 1978, 1979 |
| E.7 | 'Bristol survey Jan 1979' | 1979 |
| E.8 | 'MRC - Cambridge Oct 1979' | 1979 |
| E.9 | 'Radiation Bristol 1980 Jan' | 1980 |
| E.10-E.13 | 'Spring College on the Physics of Polymers, Liquid Crystals and Low-dimensional solids', International Centre for Theoretical Physics, Trieste, Italy, 9 April-20 June 1980 See F.227-F.241. 4 folders. | 1980 |
| E.14 | 'Cardiff 1980 Sept' | 1980 |
| E.15 | 'Departmental Colloq. on cryst. - neutron (PS) - nuclei refolding. Oct 1980' | 1980 |
| E.16, E.17 | 'Gel scripts' Lectures on gels, 'Cambridge Nov. 1980', 'Baer Symp. Atlanta 1981' and June 1985. 2 folders. Some notes in Hungarian. See also E.18. | 1980, 1981, 1985 |
| E.18 | 'Atlanta 1981 Cambridge 1980 Nov. Networks. Gels. Also some shish' See also E.16,E.17. | 1980, 1981 |

Lectures, E.1-E.289

| | | |
|------------|--|------------|
| E.19 | 'Crystallisation PARIS 1980' | 1980 |
| E.20 | 'Raychem June 1981' on classifications | 1981 |
| E.21 | 'Strasbourg Jul 1981' | 1981 |
| E.22-E.24 | 'Radiation Bristol Sept 1981, Japan 1985' 3 folders. | 1981, 1985 |
| E.25 | 'Crystallization. Exeter Nov 13 1981' | 1981 |
| E.26 | Chain folding. 'Theory Holland Dec. 1981' | 1981 |
| E.27 | 'Cleveland 1981. New look' | 1981 |
| E.28 | 'Oslo Jan 1982' | 1982 |
| E.29 | 'Amherst July 1982' | |
| E.30 | 'Radiation. Dubrovnik Oct 1982' | 1982 |
| E.31 | 'King's College London Feb 1983' Material relates to meeting in Regensburg, Germany, March 1983. | 1983 |
| E.32, E.33 | 'Crystallization. Neutron - IR. Cleveland Apr 1983' 2 folders. | 1983 |

Lectures, E.1-E.289

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| E.34-E.36 | 'Hamburg Sept 1983 Synchrotron' 3 folders. | 1983 |
| E.37 | 'London - EM structure 1983 Dec' | 1983 |
| E.38 | 'Regensburg 1983' Mostly in German. | 1983 |
| E.39 | 'Reminiscences Bristol Feb 84' | 1984 |
| E.40 | 'Fibres. Capri script Oct 1984' | 1984 |
| E.40 | '1984 Isothermal thickening' | 1984 |
| E.41 | 'Japan lecture 1985 Crystallization' | 1985 |
| E.42 | 'Crystallization Lecture 1985. General - structure script Incl Neutrons IR' | 1985 |
| E.44 | 'Bristol Jan 86. Isothermal thickening' | 1986 |
| E.45 | 'Flow (latest March 1986)' | 1986 |
| E.46 | 'PEEK Interface Conf. London 15 May 86' | 1986 |
| E.47, E.48 | 'Phase transform. Bristol seminar May 1986' 2 folders. | 1986 |

Lectures, E.1-E.289

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| E.49-E.51 | 'Bristol Jan 88. Liq Crystal Cleveland Nov. 1988. Gordon Conf. Nov. 1988' 3 folders. | 1988 |
| E.52 | 'General polymer physics. Trondheim Lecture May 1988' | 1988 |
| E.53 | 'Presentation. Extrusion of PE Mw=400-000 -> 10 [power of] 6. Oct 88' | 1988 |
| E.54-E.56 | 'Rigid rod lecture. MRS Boston Nov. 88' 3 folders. | 1988 |
| E.57, E.58 | 'US Army Lecture Durham 1988. US Army Boston 1988' 2 folders. See also E.60. | 1988 |
| E.59 | 'Scripts Bristol 1988 Cleveland-Dayton 1989' Also includes notes for lecture at Gordon Conference, May 1988. | 1988, 1989 |
| E.60 | 'Scripts 88-89, 90 etc' Lectures for US Army, Durham, April 1988 (see E.57, E.58), Bristol seminar November 1989 and 'ECC' St Austell, November 1990. | 1988-1990 |
| E.61, E.62 | 'PE Cleveland May 1989' 2 folders. | 1989 |
| E.63-E.65 | 'Scissors Cleveland May 1989' 3 folders. | 1989 |

Lectures, E.1-E.289

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| E.66 | 'Sheffield 1989' | 1989 |
| E.67 | 'Mesophase Lecture Dayton 1989' | 1989 |
| E.68 | 'Scripts Rolduc: Sciss. 1989 Exl. Flow' | 1989 |
| E.69-E.75 | 'Gel Lecture Leuven 1989' 7 folders. | 1989 |
| E.76, E.77 | 'Delhi. Delft 1990' Lectures on natural and synthetic materials, given at Delhi, India, February, and Delft, The Netherlands, November 1990. 2 folders. | 1990 |
| E.78, E.79 | 'Sorrento' Lectures at Naples, Cleveland, Sorrento, Rolduc and Zurich. 2 folders. | 1990 |
| E.80 | 'PEEK-PEK Bristol Jan 1991' | 1991 |
| E.81, E.82 | 'Gel' Includes lecture on gels at Moscow, April 1991. 2 folders. | 1991 |
| E.83 | 'Retirement lecture' Also includes lecture given at Capri, June 1991 | 1991 |

Lectures, E.1-E.289

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|------------|---|------------|
| E.84, E.85 | <p>'Short course: Structure Property Relations of Polymers', Maastricht, The Netherlands, 5-7 November 1992</p> <p>Spiral bound volume of course notes (E.84); correspondence <i>re</i> arrangements (E.85). See also F.326.</p> <p>2 folders.</p> | 1992 |
| E.86 | <p>'Stockholm Rolduc 92. Incl flow and scissors'</p> | 1992 |
| E.87 | <p>'Bristol Undergraduates 1992'</p> <p>The notes for this general lecture begin 'End of my career -start of yours'.</p> <p>Also includes notes titled 'Faraday 1979'.</p> | 1992 |
| E.88-E.93 | <p>'Akron course 1993'</p> <p>'Polymer morphology with emphasis on crystallisation', course of 24 lectures by Keller at the Institute of Polymer Science, University of Akron, USA, January-March.</p> <p>See E.265-E.279 for further transparencies and K.184- K.196 for videotapes of the lectures.</p> | 1993 |
| E.88-E.90 | <p>Typescript lecture notes.</p> <p>3 folders.</p> | |
| E.91-E.93 | <p>Transparencies</p> <p>3 folders.</p> | |
| E.94, E.95 | <p>'Leeds Eindhoven'</p> <p>Lectures on melt rheology.</p> <p>Given at Leeds (April 1993), Eindhoven, Case Western Reserve University, Ohio, USA (August 1993) and Israel 1995.</p> <p>2 folders.</p> | 1993, 1995 |

Lectures, E.1-E.289

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| E.96 | 'Crystallization of polymers', May 1995 | 1995 |
| E.97 | 'Hans 1995' | 1995 |
| E.98-E.104 | 'Brunel lectures. Structure methods 1996' | 1996 |
| | Keller was an honorary Professor Associate in the Brunel Department of Materials Engineering. He gave a course on 'Materials microstructure and design. Polymers' at the university. | |
| E.98 | Lecture plan and general material. | |
| E.99 | 'Lecture Two' | |
| E.100-E.102 | 'Lecture three' | |
| | 3 folders. | |
| E.103, E.104 | Notes and transparencies | |
| | 2 folders. | |
| E.105, E.106 | 'For Groningen (also Linz)' | 1997 |
| | Lecture given at Polymer Symposium in honour of Professor A.J. Pennings, Groningen, The Netherlands, 19 December 1987. See F.358. | |
| | 2 folders. | |
| E.107 | 'Metastability San Francisco 1997' | 1997 |
| E.108 | 'Seminar Metastab. General' | 1998 |

Lectures, E.1-E.289

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|--------------|---|-------------|
| E.109, E.110 | 'Eindhoven course' 2 folders. | 1998 |
| E.111 | 'Morphology and Crystal Phase Transition in Polymers', 3M Technical Development, St Paul's, Minnesota, USA, 18-19 June 1998 Ring binder of lecture notes and associated material. Retained in original binder. See also F.361. | 1998 |
| E.112-E.114 | 'Cambridge 99' 3 folders. | 1999 |
| E.115-E.237 | ALPHABETICAL BY TOPIC Arranged by title of subject inscribed on the folder. Very little of the material has any indication of occasion or date. | N.d. |
| E.115 | 'Acrylamide Polyethylene' | |
| E.116 | 'Annealing synchrotron' | |
| E.117, E.118 | 'Biopaper Atkins' 2 folders. | |
| E.119 | 'Breakage' | |
| E.120 | 'Chain extension' Some material dated 1988. | |

Lectures, E.1-E.289

- E.121 'Chain folding Main work (Sadler, Spells)' and 'IR Neutrons'
- E.122 'Collagen'

Includes notes for lectures annotated 'Colston', 'Naples' and 'Cleveland'.
- E.123-E.125 'Collagen'

Includes notes on dental collagen work.

3 folders.
- E.126, E.127 'Cross linking'

2 folders.
- E.128 'Crystals'

Text on 'Importance of crystals'
- E.129, E.130 'Crystal growth'

Photocopy notes.

2 folders.
- E.131 'Crystallization - general'
- E.132-E.134 'Crystallization kinetics'

3 folders.
- E.135 'Crystallogr. Memory'

Lectures, E.1-E.289

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| E.136 | 'Education' |
| E.137, E.138 | 'Elongat. flow' 2 folders. |
| E.139 | 'Entanglements' |
| E.140 | 'Fibres. Shish kebabs' |
| E.141-E.146 | 'Flow' 6 folders. |
| E.147, E.148 | 'Flow scripts' Includes letter from A. Maconnachie <i>re</i> colloquium at Imperial College London, November 1983 (E.148). 2 folders. |
| E.149 | 'Flow - entanglement' |
| E.150 | 'Flow. Transitions Flow fields' |
| E.151-E.153 | 'Transp. Flow' 3 folders. |
| E.154 | 'Flow-Gel' and 'Entanglements' |
| E.155 | 'General - Folding' Includes notes for lectures at Manchester, Osaka and Aachen. |

Lectures, E.1-E.289

- E.156, E.157 'Gel'
2 folders.
- E.158 'Gel. Types of chain'
Includes notes for lecture at Budapest.
- E.159-E.161 'Gel (Transp. Text)'
Includes notes for lectures at Freiburg and Bristol.
3 folders.
- E.162 'Gels'
- E.163 'Gel-Shish Kebab' and 'Barham-Hill'
- E.164 'Grubb'
Refers to work of D.T. Grubb.
- E.165, E.166 'IR Spells (latest 1985)'
2 folders.
- E.167 'IR - neutrons. Growth notes'
- E.168 'Irradiation'
- E.169-E.171 'Liquid crystals'
Includes notes for lectures at Asilomar and Gordon
Conference.
3 folders.

Lectures, E.1-E.289

- E.172 'Liquid crystals Odell'
- E.173 'Low angle X-ray'
- E.174 'Metastability. Phase metastability'
- E.175 'Morphology'
Includes typescript draft of lecture.
- E.176 'Neutron'
- E.177 'New look'
Transparencies on melt crystallization.
- E.178 'Orientation'
- E.179-E.182 'P4MPI'
4 folders.
- E.183 'PBD'
- E.184 'PBT'
- E.185, E.186 'Prints PBT (also old spherulite + gel drawing)'
2 folders.

Lectures, E.1-E.289

- E.187 'PE Pressure irradiation'
- E.188-E.190 'PEEK'
3 folders.
- E.191-E.197 'Paraffins'
Includes notes for lectures at Exeter and material on annealing experiments.
7 folders.
- E.198, E.199 'Paraffin Lecture' and 'Ungar Whiting'
Includes notes for lecture at Bristol 1984.
2 folders.
- E.200, E.201 'Paraffin Synchrotron'
2 folders.
- E.202 'Phase diagr. Hikosaka'
- E.203 'Phase stability. Wedge P4BD etc'
- E.204 'Lecture notes on point defects'
- E.205 'Polymer crystall.'
Chiefly corrected typescript pages of drafts on chain folding, with autobiographical reminiscences of the work.
- E.206-E.208 'Radiation. Ungar Steying'

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Lectures, E.1-E.289

- /... Includes notes for lecture at Royal Military College,
Shrivenham, Wiltshire, 1973.
3 folders.
- E.209 'Radiation - (Latest transp)'
- E.210-E.212 'Radiation effects'
3 folders.
- E.213 'Rates Mesophases'
Lecture notes annotated 'Roy. Soc'
- E.214, E.215 'Reminiscences'
Notes for retrospective lectures on research.
2 folders.
- E.216 'Reversible Long Period'
- E.217 'Rigid rod script'
- E.218 'Rigid rod figures'
- E.219 'SBS'
- E.220 '(SN)X'
For lecture on polymeric sulphur nitride.
- E.221 'Scission X flow'

Lectures, E.1-E.289

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| E.222 | 'Shish-Kebab' |
| E.223 | 'Shish kebab. Coombes' |
| E.224 | 'Shish kebab hairdressing' and 'Script: Strasbourg' |
| E.225 | 'Shish-kebab gel' |
| E.226 | 'Reserve orientation Shish kebabs. Reminiscences' |
| E.227 | 'Spherulite review' |
| E.228 | 'Stirred gels' |
| E.229, E.230 | 'On stretching' 2 folders. |
| E.231 | 'Structure' |
| E.232 | 'Structure hierarchy. Mech. prop.' |
| E.233 | 'Thermodynamics' |
| E.234 | 'Velocimetry' |
| E.235 | 'Viscosity' |

Lectures, E.1-E.289

E.236 'Viscosity. Melt'

E.237 'Waddon'

E.238-E.261

ALPHABETICAL BY OCCASION

N.d.

These folders are arranged by occasion (i.e. place-name or named lecture) as inscribed on the folders.

E.238, E.238A 'AFM Conf Transp'
2 folders.

E.239 'Balaton - Gels'

E.240 'Barham script'

E.241, E.242 'Bristol, Cleveland'
2 folders.

E.243 'Budapest. Moreton Hampstead'

E.244 'E.P.S. Lecture'

E.245 'Ferrara'
Typescript course outline.

E.246 'Jubilee lecture'

Lectures, E.1-E.289

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|--------------|---|
| E.247 | 'Louvain lecture' |
| E.248 | 'Mainz' and 'relaxation time' |
| E.249 | '[?Mesophase] Ulm. Roy. Soc.' |
| E.250 | 'Milan' |
| E.251 | 'New Orleans' |
| E.252 | 'Open Day lecture' |
| E.253 | 'Presidential address' |
| E.254 | 'Rolduc' |
| E.255, E.256 | 'Sadler Memorial' Lecture in tribute to work of D.M. Sadler, a Bristol colleague. 2 folders. |
| E.257 | 'St Barbara. Amherst' |
| E.258 | 'Stockholm. Gloucester' |
| E.259, E.260 | 'Stockholm (background transp.)' Includes notes for lecture at Nice, 1990. 2 folders. |

Lectures, E.1-E.289

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|--------------------|---|-------------|
| E.261 | 'Warsaw lecture' | |
| E.262-E.289 | UNTITLED | N.d. |
| E.262-E.279 | Lectures series | 1990s |
| E.262-E.264 | Series of three lectures | Early 1990s |
| E.262 | '1st lecture' | |
| E.263 | '2nd' | |
| E.264 | '3rd lecture' | |
| E.265-E.279 | Series of fourteen lectures | 1993 |
| | Figures for lectures delivered at the Institute of Polymer Science, University of Akron, USA in 1993. See also E.88-E.93. | |
| E.265 | 'Lecture I' | |
| | Folder also annotated 'Wednesday 20 Jan' and '1/20/93'. | |
| E.266 | 'Lecture II (Monday)' | |
| E.267 | 'III What is a crystal?' | |
| E.268 | 'Lecture IV' | |

Lectures, E.1-E.289

- E.269 'Lecture V'
Folder also annotated 'Feb 3'
- E.270 'Lecture VI'
- E.271 'Lecture VII. Modes'
- E.272 'Lecture VIII. SC Fold Length'
- E.273 'Keller IX Structure. Field surface'
- E.274 'Lecture X'
- E.275 'Lecture XI Alkanes'
- E.276, E.277 'XII Theory'
2 folders.
- E.278 'XIII'
Folder also annotated 'Bristol matters' and 'Budapest
Eindhoven'
- E.279 'Lecture XIV'
- E.280-E.282 Untitled pages of manuscript lecture notes etc.
3 folders.

Lectures, E.1-E.289

E.283-E.289

Sets of transparencies.

The sets are numbered I-X, XII, XIV and XV. It is not clear how the numbered sets relate together.

They are all, to varying degrees, incomplete.

7 folders.