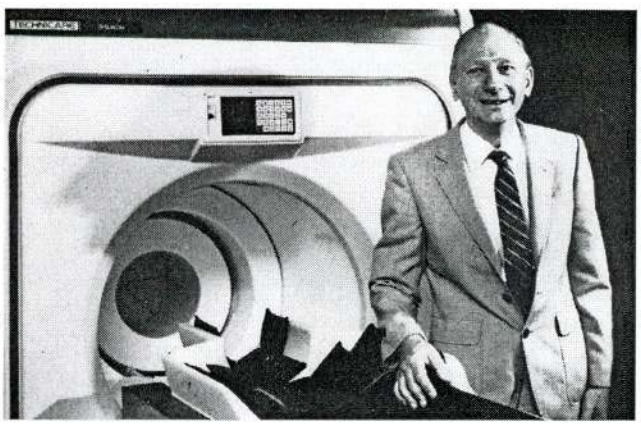
Catalogue of the papers and correspondence of

Edward Raymond Andrew, FRS

(1921-2001)



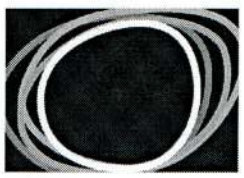
By Anna-K. Mayer and Timothy E. Powell

NCUACS catalogue no. 164/7/08

Title:	Catalogue of the papers and correspondence of Edward Raymond Andrew FRS (1921-2001), physicist
Compiled by:	Anna-K. Mayer and Timothy E. Powell
Date of material:	1939-2001
Extent of material:	847 items
Deposited in:	The University of Nottingham Library
Reference:	GB 0159 PRA

NCUACS catalogue no. 164/7/08

The work of the National Cataloguing Unit for the
Archives of Contemporary Scientists in
the production of this catalogue is made possible
by the support of the



Arts & Humanities
Research Council

NOT ALL THE MATERIAL IN THIS COLLECTION
MAY YET BE AVAILABLE FOR CONSULTATION.
ENQUIRIES SHOULD BE ADDRESSED IN THE
FIRST INSTANCE TO:

THE ARCHIVIST
THE UNIVERSITY OF NOTTINGHAM LIBRARY
NOTTINGHAM

LIST OF CONTENTS

GENERAL INTRODUCTION

PROVENANCE

The papers were received from University of Nottingham Library in May 2008.

OUTLINE OF THE CAREER OF EDWARD RAYMOND ANDREW

Edward Raymond Andrew was born in Boston, Lincolnshire, on 27 June 1921 and educated at Wellingborough School, Northants. In 1939 he entered Christ's College Cambridge with an Open Scholarship, obtaining first class honours in both Part I and Part II of the Natural Sciences Tripos. Following his graduation in 1942, he undertook wartime service as a Scientific Officer at the Telecommunications Research Establishment in Malvern, Worcestershire, studying the attenuation of microwave radar signals through gun flashes. As he recalled, in the process he also 'learnt a great deal of practical electronics and microwave and radio frequency technology which came in handy later'.[1] At the end of the war he resumed academic studies at Cambridge, working under David Shoenberg on low temperature physics in the Cavendish Laboratory, where he completed a Ph.D. on problems of the penetration of magnetic fields into Type I superconductors (*Resistance measurements on superconductors in magnetic fields*, 1949). During this period he held the prestigious Stokes Studentship at Pembroke College.

In 1948 Andrew received a Commonwealth Fund Fellowship to spend a postdoctoral year at Harvard University in the laboratory of Edward M. Purcell, who was to share the 1952 Nobel Prize for Physics for his independent discovery of nuclear magnetic resonance (NMR) in liquids and in solids. From 1948 Andrew continued to study NMR and its applications in physics, chemical physics, biophysics and medical physics.

Returning to the UK in 1949, he spent five years as a lecturer in Natural Philosophy at St Andrews University, where he wrote the first textbook to be published about NMR (Cambridge University Press, 1955). In September 1954 he moved to the University College of North Wales at Bangor as Professor of Physics and Head of the Department. While at Bangor in 1958 Andrew discovered the technique of magic angle spinning. In solid-state NMR, spinning the sample at a particular ('magic') angle to the magnetic field increased the resolution, thus making for more accurate identification and analysis of the spectrum. Magic angle spinning became the foundation of modern high resolution NMR studies for chemical structures.

Andrew left Wales in 1964 to become Lancashire-Spencer Professor and Head of the Physics Department at the University of Nottingham. There, he continued his work on using rapid rotation of

---

[1] *Spectroscopy Europe*, vol. 10/5 (1998), 28.

samples for high resolution studies and made another major contribution to the field of magnetic resonance with his pioneering studies on magnetic resonance imaging (MRI). He was one of the first to obtain detailed images from human wrist and brain, and established Nottingham as a centre for research in this area. He was also Dean of the Faculty of Science from 1975 to 1978.

In order to avoid compulsory retirement at age 65, Andrew left the UK in 1983 to become Graduate Research Professor at the University of Florida, Gainesville, a joint appointment of the Department of Physics and the Radiology Department of the Medical School there. He continued his research in the area of magnetic resonance tomography and played a role in establishing the US National High Magnetic Field Laboratory in Tallahassee, Florida. He retired in 1999.

Andrew was the founder Chairman (1956-1959) of the British Radiofrequency Spectroscopy Group and served a second period as Chairman in 1981-1983. Likewise, he was a founder member (and President 1974-1980) of the Groupement AMPÈRE ('Atomes et Molécules Par Études Radio-Électriques'), whose meetings in France and other, mostly European, venues he regularly attended. In 1984-1987 he acted also as President of the International Society of Magnetic Resonance (ISMAR). He was an editor of *Physics Reports* and Editor-in-Chief of *Magnetic Resonance in Medicine*, 1983-1991.

Andrew was elected to the Fellowship of the Royal Society of Edinburgh in 1952 and to the Fellowship of the Royal Society in 1984. He also received the Royal Society's Wellcome Medal, 1984, and was awarded honorary degrees from the universities of Turku (Finland), Adam Mickiewicz, Posnan (Poland), Leipzig (Germany) and Wales.

He was married twice, first in 1948 to Mary Ralph Farnham, who died of cancer in 1964. They had three daughters. In 1972 Andrew married Eunice Tinning, who survives him. He died on 27 May 2001.

For a full account of Andrew's life and work see 'Edward Raymond Andrew 27 June 1921-27 May 2001' by Norman Sheppard, *Biographical Memoirs of Fellows of the Royal Society*, vol. 49 (2003), pp. 1-14.

DESCRIPTION OF THE COLLECTION

The archive covers the period 1939-2001. While there is significant material from Andrew's education and early career, a large portion of this archive dates from 1983 to the late 1990s and there is thus a pronounced emphasis on Andrew's activities following his relocation to the US. His war-time and doctoral research, and the transition to NMR research are documented more sketchily. There are gaps also for the years spent at St Andrews, Bangor and Nottingham.

Series 1, Publications, documents Andrew's written output. A large number of offprints and shorter publications were found, starting with his 1946 paper on the visibility of signals on radar range

presentations. The chronological listing of this material, which looks to be comprehensive, was constructed in part with the aid of the bibliography in the *Biographical Memoirs of Fellows of the Royal Society*, vol. 49 (2003). Also documented is the production of Andrew's 1955 monograph on NMR, which was reprinted four times and appeared also in Russian (in a pirated translation). There are also drafts of later publications (1998-2000) on which he collaborated with colleagues in Poland.

Series 2, Biographical, presents a range of material relating to Andrew's life and career. It includes reminiscences and autobiographical accounts, notebooks from Andrew's student days at Cambridge, documentation of his elections to fellowships and of his honorary doctorates, and material relating to celebrations of his 70th and 75th birthday. There is some photographic material.

Series 3, Telecommunications, is a small series comprising seven Royal Air Force exercise books, all dating from Andrew's time as a Scientific Officer with the Telecommunications Research Establishment (TRE) at Malvern College, Worcestershire. The notebooks chiefly cover Andrew's TRE entrance courses on radar equipment and radar systems, and also contain notes e.g. on experiments.

Series 4, University of Cambridge, documents the years when Andrew completed his doctorate in low temperature physics. This is the smallest series by far in this collection, consisting of three items only: copies of the Cavendish Laboratory's practical course for Part II in Physics and a manuscript of the electro-magnetic course at the Mond Laboratory, 1945-1948.

Series 5, University of Nottingham, includes Andrew's lecture courses 1965-1983 on such topics as spectroscopy, wave mechanics, biophysics, atomic physics and mechanics. The Nottingham Physics Laboratory is documented in photographs and slides. A file of correspondence and memoranda offers some insight into the life of the Department. Among others there is also correspondence with foreign visitors who came to work in the Laboratory for an extended period, notably the Swedish chemist Rolf Sjöblom (1973-1974), the Hungarian biophysicist Rezsö Gáspár (1974-1975) and the Chinese physicist Meng Qing-An (1979-1981).

Series 6, University of Florida, forms one of the largest components of this collection. It documents Andrew's lecture courses 1984-1997 on NMR, polymer physics, MRI, diagnostic radiological physics etc, through which Andrew contributed to teaching at UF although this was not a requirement of his position as Research Professor. He lectured widely all over Campus and the wider Florida region, and attended numerous colloquia and special lectures in the departments with which he was associated, meticulously recorded in two spiral-bound notebooks. There is administrative correspondence, 1983-2000, including the annual evaluations Andrew received from the Departments of Physics and of Radiology. Further correspondence covers a project to build a 6 tesla whole body magnet.

Series 7, Research, features a number of notebooks that provide near continuous, if probably not exhaustive, coverage from Andrew's postdoctoral year at Harvard through to his early months in Nottingham. Another, much later, notebook records his 'new development of a device for active magnetic field gradient screening which may be useful in NMR imaging, NMR spectroscopy and other applications of magnetic resonance in medicine, radiology, biology and microscopy', 1990-1993. A

subseries of technical reports documents research 1962-1969. Likewise documented is Andrew's involvement during the 1970s in grant applications to the Medical Research Council (for research on the application of spin mapping to medical diagnosis and treatment) and to the Wolfson Foundation (for an NMR body scanner). The series also includes a section on patents 1956-1981 relating to NMR imaging machines, which Andrew evaluated at the request of the General Electric Company, for whom he acted as a consultant from 1982. There are also notes on spin maps.

Series 8, Societies and organisations, another substantial series, documents some of Andrew's involvements with organisations such as the British Radiofrequency Spectroscopy Group, EMI (for whom he did consultancy work on the commercial production of NMR equipment), the Groupement AMPÈRE, and the International Society of Magnetic Resonance (ISMAR). Andrew also advised the MRC on NMR imaging in clinical problems.

Series 9, Lectures, spans a quarter century and over a hundred items, and testifies to Andrew's popularity as a speaker. Among other things this series includes material documenting Andrew's lecture on being awarded a share in the Royal Society's 1984 Wellcome Foundation Prize in recognition of his contributions to the development of NMR imaging as a diagnostic tool in medicine. There is material also on Andrew's Royal Institution Lecture on MRI, 'Seeing Safely Inside the Human Body', given in October 1986.

Series 10, Visits and conferences, similarly speaks of Andrew's powers of clear exposition, which led to his becoming for many years a favoured choice for introducing scientific conferences on NMR. This series testifies also to what his biographer called 'his principal non-family interest', namely travel. In the period covered here, 1968-2000, Andrew visited countless European countries, as well as India, South Africa, the USSR, China, Australia, North and South America, among others.

Series 11, Correspondence, comprises half a century (1950-2000) of correspondence with colleagues all over the world. Indeed the chief ordering principle Andrew appears to have followed in filing correspondence was geographical, inducing him to create files based on the location of correspondents (e.g. 'Scientists in Japan', one of the oldest files here) or based on Andrew's own location at the time (e.g. 'Bangor'), or a mixture of both (e.g. 'Cambridge' includes correspondence with Cambridge-based colleagues as well as letters Andrew wrote while he was visiting Cambridge). In addition to this geographical principle he tended to keep personal files on colleagues in his Nottingham department ('Peter Mansfield'), former colleagues ('Waldo Hinshaw', 'L.J. Challis'), former students with whom he continued to keep in touch ('Gwilyn Parry Jones'), visitors to the department ('Prof. Helion Vargas') or those whose correspondence with him simply exceeded a certain volume (e.g. 'Guo Quanzhong', a Chinese physicist who wrote to Andrew on his research on delayed Fourier transformation of the NMR free induction delay). There is also an extensive series of correspondence with Polish scientists, 1984-2000, many of whom worked with Andrew at the University of Florida for extended periods.

Series 12, Non-textual media, includes slides, transparencies and photographs, none of which are explicitly dated. Andrew's slide collection, filed in pocket sheets that were kept in four ring-binders, features photographs of magnets and MRI equipment, graphs and tables, NMR images of Andrew's anatomy, etc. He appears to have drawn on them for his lecturing activities. The transparencies similarly appear to have been created for lecturing purposes. The photographic material consists of NMR images of Andrew's anatomy.

There is also an index of correspondents.

LOCATION OF FURTHER MATERIAL

Additional Andrew material is still in the hands of the family. Reports indicate that this material sheds light on aspects of Andrew's career not much covered here, notably his postdoctoral year in Purcell's laboratory at Harvard and his discovery of magic angle spinning while at Bangor. Also included in this additional material are research reports from Andrew's time as a Scientific Officer during the Second World War, and notes from his student years in Cambridge and the early British Radiofrequency Spectroscopy Group, etc. It is expected that this additional material will be deposited at the University of Nottingham Library to join this collection in due course.[2]

ACKNOWLEDGEMENTS

We are grateful to Dr Waldo Hinshaw for help with some of the photographic material, and to the University of Florida for permission to use the portrait of Andrew, originally shown on their poster announcing the symposium to celebrate Andrew's 75th birthday, University of Florida, 5 January 1997.

Anna-K. Mayer
Bath, 2008

[2] Communication from L. Shaw at the University of Nottingham Library, 16 July 2008.

SERIES 1 **PUBLICATIONS** **1946-2000**

PRA/1/1 OFFPRINTS

PRA/1/2 DRAFTS

378 items in 47 folders.

PRA/1/1 **OFFPRINTS** **1946-2000**

A number of these are photocopies, not originals.

365 items in 22 folders.

PRA/1/1/1	E.R. Andrew, The visibility of signals on radar range presentations, J. Inst. Elect. Eng. 93, IIIA, 1559 (1946)	1946
PRA/1/1/2	E.R. Andrew, Resistance in the intermediate state, Phys. Soc. Cambridge Conf. Proc., 101 (1947)	1947
PRA/1/1/3	E.R. Andrew, D.W.E. Axford and T.M. Sugden, The measurement of ionization in a transient flame, Trans. Farad. Soc. 44, 427 (1948)	1948
PRA/1/1/4	E.R. Andrew, The intermediate state of superconductors. II. The resistance of cylindrical superconductors in transverse magnetic fields, Proc. Roy. Soc. A194, 80 (1948)	1948
PRA/1/1/5	E.R. Andrew, The intermediate state of superconductors. III. Theory of behaviour of superconducting cylinders in transverse magnetic fields, Proc. Roy. Soc. A194, 98 (1948)	1948
PRA/1/1/6	E.R. Andrew, An automatic temperature control for a liquid helium cryostat, J. Sci. Instr. 25, 416 (1948)	1948
PRA/1/1/7	E.R. Andrew, Size variation of resistivity for mercury and tin, Proc. Phys. Soc. A62, 77 (1949)	1949

PRA/1/1/8	E.R. Andrew, Critical field measurements on superconducting tin foils, Proc. Phys. Soc. A62, 88 (1949)	1949
PRA/1/1/9	E.R. Andrew, The magnetization of superconducting plates in transverse magnetic fields, Proc. Int. Conf. LT Phys., MIT, 91 (1949)	1949
PRA/1/1/10	E.R. Andrew, Molecular motion in certain solid hydrocarbons, J. Chem. Phys. 18, 607 (1950)	1950
PRA/1/1/11	E.R. Andrew, Superconductivity, Chambers *Encyclopaedia* 13, 290 (1950)	1950
PRA/1/1/12	E.R. Andrew and J.M. Lock, The magnetization of superconducting plates in transverse magnetic fields, Proc. Phys. Soc. A63, 13 (1950)	1950
PRA/1/1/13	E.R. Andrew and R. Bersohn, Nuclear magnetic resonance lineshape for a triangular configuration of nuclei, J. Chem. Phys. 18, 159 (1950)	1950
PRA/1/1/14	E.R. Andrew, Nuclear resonance in solid hydrocarbons, Physica 17, 405 (1951)	1951
PRA/1/1/15	E.R. Andrew, Nuclear magnetic resonance absorption in NaSbF6, Phys. Rev. 82, 443 (1951)	1951
PRA/1/1/16	E.R. Andrew and R.G. Eades, Proton magnetic resonance in solid cyclohexane, Proc. Phys. Soc. A65, 371 (1952)	1952
PRA/1/1/17	E.R. Andrew and F.A. Rushworth, Ring shims for coned magnet polecaps, Proc. Phys. Soc. B65, 801 (1952)	1952
PRA/1/1/18	E.R. Andrew and R.G. Eades, A nuclear magnetic resonance investigation of solid cyclohexane, Proc. Roy. Soc. A216, 398 (1953)	1953
PRA/1/1/19	E.R. Andrew and R.G. Eades, Separation of the intramolecular and intermolecular contributions to the second moment of the nuclear magnetic resonance	1953

/...

/...	spectrum, Proc. Phys. Soc. A66, 45 (1953)	
PRA/1/1/20	E.R. Andrew and R.G. Eades, A nuclear magnetic resonance investigation of three solid benzenes, Proc. Roy. Soc. A218, 537 (1953)	1953
PRA/1/1/21	E.R. Andrew and D. Hyndman, Proton magnetic resonance evidence for the planar structure of the urea molecule, Proc. Phys. Soc. A66, 1187 (1953)	1953
PRA/1/1/22	E.R. Andrew, Nuclear magnetic resonance modulation correction, Phys. Rev. 91, 425 (1953)	1953
PRA/1/1/23	E.R. Andrew, Nuclear magnetic resonance evidence of self-diffusion in molecular solids, Report Conf. Defects in Crystalline Solids, Bristol, 60 (1954)	1954
PRA/1/1/24	E.R. Andrew and F.A. Rushworth, A large permanent magnet: some details of its design, performance and applications, El. J., 155, 1344-1346 (1955)	1955
PRA/1/1/25	E.R. Andrew and D. Hyndman, A proton magnetic resonance investigation of the structure of urea, Disc. Farad. Soc. 19, 195 (1955)	1955
PRA/1/1/26	E.R. Andrew, Magnetic resonance symposium at Bangor, Nature 178, 1382 (1956)	1956
PRA/1/1/27	E.R. Andrew and K.M. Swanson, A method for determining the nuclear relaxation mechanism in crystals, Proc. Phys. Soc. 70B, 436 (1957)	1957
PRA/1/1/28	E.R. Andrew and N.D. Finch, Nuclear magnetic resonance spectrum for isosceles triangular configurations of nuclei, Proc. Phys. Soc., 70B, 980 (1957)	1957
PRA/1/1/29	E.R. Andrew, Nuclear magnetic resonance study of molecular motion in crystals, Acta. Cryst. 10, 853 (1957)	1957

PRA/1/1/30	E.R. Andrew, R.G. Eades and D.G. Hughes, The nuclear quadruple coupling constant of 23Na in sodium nitrate, Proc. Phys. Soc. 71, 1019 (1958)	1958
PRA/1/1/31	E.R. Andrew, Nuclear magnetic resonance in crystals, Chem. Soc. Spec. Pub. 12, 177 (1958)	1958
PRA/1/1/32	E.R. Andrew, Nuclear magnetic resonance spectra from a crystal rotated at high speed, Nature 182, 1659 (1958)	1958
PRA/1/1/33	E.R. Andrew and R.A. Newing, The narrowing of nuclear magnetic resonance spectra by molecular rotation in solids, Proc. Phys. Soc. 72, 959 (1958)	1958
PRA/1/1/34	E.R. Andrew, A. Bradbury and R.G. Eades, Nuclear magnetic resonance spectra in solids: invariance of the second moment under molecular reorientation, Arch. Sci. 11, 223 (1958)	1958
PRA/1/1/35	E.R. Andrew, Rotational narrowing of nuclear magnetic resonance spectra, Arch. Sci. 12, 103 (1959)	1959
PRA/1/1/36	E.R. Andrew, A. Bradbury and R.G. Eades, Removal of dipolar broadening of nuclear magnetic resonance spectra of solids by specimen rotation, Nature 183, 1802 (1959)	1959
PRA/1/1/37	E.R. Andrew, Nuclear magnetic resonance in solids, Brit. J. Appl. Phys. 10, 431 (1959)	1959
PRA/1/1/38	E.R. Andrew and K.M. Swanson, An experimental study of the nuclear relaxation mechanism in several crystals, Proc. Phys. Soc. 75, 582 (1960)	1960
PRA/1/1/39	E.R. Andrew, Thermal motion in crystals and molecules as revealed by nuclear magnetic resonance, Acta Cryst. 13, 1111 (1960)	1960
PRA/1/1/40	E.R. Andrew, A. Bradbury, R.G. Eades and G.J. Jenks, Fine structure of the nuclear magnetic resonance spectra of solids: chemical shift structure of the spectrum of phosphorus pentachloride, Nature 188, 1103 (1960)	1960

PRA/1/1/41	E.R. Andrew, A. Bradbury, R.G. Eades and G.J. Jenks, Nuclear magnetic resonance spectra of crystals rotated macroscopically: fine structure of the spectrum of phosphorus pentachloride, 9th Colloque AMPÈRE, Pisa, 371 (1960)	1960
PRA/1/1/42	E.R. Andrew, R.G. Eades, Z.M. El Saffar and J.P. Llewellyn, Proton magnetic resonance at low temperatures of molecular solids containing CH3 groups, 9th Colloque AMPÈRE, Pisa, 379 (1960)	1960
PRA/1/1/43	E.R. Andrew, J.W. Hennel, S. Clough and R.G. Eades, The temperature dependence of the quadrupole coupling constant of 23Na in sodium nitrate, 9th Colloque AMPÈRE, Pisa, 412 (1960)	1960
PRA/1/1/44	E.R. Andrew, Nuclear magnetic resonance in solids containing small molecules, J. Phys. Chem. Solids 18, 9 (1961)	1961
PRA/1/1/45	E.R. Andrew, K.M. Swanson and B.R. Williams, Angular dependence of nuclear spin-lattice relaxation time for several alkali halide crystals, Proc. Phys. Soc. 77, 36 (1961)	1961
PRA/1/1/46	E.R. Andrew and D.P. Tunstall, Spin-lattice relaxation in imperfect cubic crystals and in non-cubic crystals, Proc. Phys. Soc. 78, 1 (1961)	1961
PRA/1/1/47	E.R. Andrew, Some nuclear magnetic resonance studies with solids, 10th Colloque AMPÈRE, Leipzig, 210 (1961)	1961
PRA/1/1/48	E.R. Andrew, The 10th Colloque AMPÈRE at Leipzig, September 1961, J. Sci. Instr. 39, 1 (1962)	1962
PRA/1/1/49	E.R. Andrew and S. Clough, Conference on radiospectroscopy of solids, Bangor, Brit. J. Appl. Phys. 13, 94 (1962)	1962
PRA/1/1/50	E.R. Andrew, University College of North Wales, New Laboratories for the Department of Physics, Nature 193, 921 (1962)	1962

PRA/1/1/51	E.R. Andrew, R.G. Eades, J.W. Hennel and D.G. Hughes, The magnetic resonance of 23Na nuclei in monocrystalline sodium nitrate, Proc. Phys. Soc. 79, 954 (1962)	1962
PRA/1/1/52	E.R. Andrew, Nuclear magnetic resonance and other topics, Encyclopaedic Dictionary of Physics 5, 70 (1962)	1962
PRA/1/1/53	E.R. Andrew and G.J. Jenks, The narrowing of nuclear magnetic resonance spectra by molecular rotation in solids. II. Further calculations for a system or reorienting nuclear pairs, Proc. Phys. Soc. 80, 633 (1962)	1962
PRA/1/1/54	E.R. Andrew and R.G. Eades, Possibilities of high-resolution nuclear magnetic resonance spectra in crystals, Disc. Farad. Soc. 34, 38 (1962)	1962
PRA/1/1/55	E.R. Andrew, A. Bradbury, R.G. Eades and V.T. Wynn, Nuclear cross-relaxation induced by specimen rotation, Phys. Lett. 4, 99 (1963)	1963
PRA/1/1/56	E.R. Andrew, Nuclear magnetic resonance investigation of solids, Berichte der Bunsengesellschaft f. Phys. Chem. 67, 295 (1963)	1963
PRA/1/1/57	E.R. Andrew and D.P. Tunstall, Anisotropy of chemical shift for some fluorine compounds, Proc. Phys. Soc. 81, 986 (1963)	1963
PRA/1/1/58	E.R. Andrew, R.G. Eades and G.P. Jones, Removal of dipolar broadening in solids, Proc. 5th Experimental NMR Conf. Pittsburgh (1964) Typescript and original illustrations, including a photograph.	1964
PRA/1/1/59	E.R. Andrew, The measurement of phosphorus chemical shifts in solids by the rotating-specimen technique, Proc. Int. Symp. NMR, Tokyo, M-3-6 (1965)	1965
PRA/1/1/60	E.R. Andrew, NMR in solid phosphorus compounds by the rapidly rotating specimen method, Proc. 7th Experimental NMR Conf., Pittsburgh (1966)	1966

PRA/1/1/61	E.R. Andrew and P.S. Allen, Developments in the nuclear magnetic resonance study of molecular motion in solids, J. Chim. Phys. 63, 85 (1966)	1966
PRA/1/1/62	E.R. Andrew and V.T. Wynn, Solid-state 31P magnetic resonance shifts and fine structure, Proc. Roy. Soc. 291A, 257 (1966)	1966
PRA/1/1/63	E.R. Andrew, S. Clough, L.F. Farnell, T.D. Gledhill and I. Roberts, Resonant rotational broadening of nuclear magnetic resonance spectra, Phys. Lett. 21, 505 (1966)	1966
PRA/1/1/64	E.R. Andrew, I. Roberts and R.C. Gupta, Helmholtz-type coils of finite cross-section, J. Sci. Instr. 43, 936 (1966)	1966
PRA/1/1/65	E.R. Andrew, L.F. Farnell and T.D. Gledhill, Resolved spin multiplets in the NMR spectra of solids, Phys. Rev. Lett. 19, 6 (1967)	1967
PRA/1/1/66	E.R. Andrew, Y. Apaydin and W.S. Moore, Magnetic resonance in a rotating magnetic field, Phys. Lett. 25A, 44 (1967)	1967
PRA/1/1/67	E.R. Andrew and D.Ll. Williams, Superconductivity, Chambers Encyclopaedia 13, 289 (1967) (Revised edition, Pergamon Press)	1967
PRA/1/1/68	E.R. Andrew, Nuclear magnetic resonance in rapidly-rotated solids, Proc. 14th Colloque AMPÈRE, Ljubljana, 1966, 388 (1967)	1967
PRA/1/1/69	E.R. Andrew, P.S. Allen and A. Cowking, Proton magnetic resonance in polymethylbenzenes, Proc. 14th Colloque AMPÈRE, Ljubljana, 1966, 1163 (1967)	1967
PRA/1/1/70	E.R. Andrew, Nuclear magnetic resonance, applications of, Enclyclopedic Dictionary of Physics, Supplementary Volume 2, 201 (1967)	1967
PRA/1/1/71	E.R. Andrew, Spin temperature, Encyclopaedic Dictionary of Physics, Supplementary Volume 2, 363 (1967)	1967

PRA/1/1/72	E.R. Andrew, Factors affecting the resolution of NMR spectra from rapidly-rotated solids, Ciencia e Cultura (Sociedade Brasiliera para o Progresso da Ciencia) 20, 528 (1968)	1968
PRA/1/1/73	E.R. Andrew and L.F. Farnell, The effect of macroscopic rotation on anisotropic bilinear spin interactions in solids, Mol. Phys., 15, 157 (1968)	1968
PRA/1/1/74	E.R. Andrew, Nuclear magnetic resonance and molecular motion in organic crystals, Molecular Dynamics and Structure of Solids, NBS Special Publication 301, 415 (1969)	1969
PRA/1/1/75	E.R. Andrew, L.F. Farnell, M. Firth, T.D. Gledhill and I. Roberts, High speed rotors for nuclear magnetic resonance studies on solids, J. Mag. Res. 1, 27 (1969)	1969
PRA/1/1/76	E.R. Andrew, Nuclear magnetic resonance with rapidly-rotated solid specimens, Tagung Hochfrequentzspektroskopie der Physikalischen Gesellschaft der DDR, 443 (1969)	1969
PRA/1/1/77	E.R. Andrew, M. Firth, A. Jasinski and P.K. Randall, NMR spin multiplets in solids resolved by high-speed rotation, Bull. Am. Phys. Soc. II 15, 257 (1970)	1970
PRA/1/1/78	E.R. Andrew and A. Jasinski, Wplyw makroskopowej rotacji na widma cial stalych zawirajacych reorientujace sie grupy molekularne [Macroscopic rotation and spectrum of solid with reorienting molecular groups], IV Ogólnopolska Konferencja Radiospektroskopia i Elektronika Kwantowa [Polish Conf. Radiospectr. & Quant. Electronics] 1, 96 (1970) Photocopy.	1970
PRA/1/1/79	E.R. Andrew, M. Firth, A. Jasinski and P.J. Randall, 19F nuclear spin coupling constants in solids by the high-speed rotation method, Phys. Lett. 31A, 446 (1970)	1970
PRA/1/1/80	E.R. Andrew, Nuclear magnetic resonance in rapidly rotated solids, Magnetic Resonance, Plenum Press, 163 (1970)	1970
PRA/1/1/81	E.R. Andrew and J. R. Brookeman, NMR spectra of reorienting nuclear pairs in solids: application to	1970

/...

/...	conformational changes, J. Mag. Res. 2, 259 (1970)	
PRA/1/1/82	E.R. Andrew, The absence of chemical shift anisotropy in the multiple pulse NMR spectrum of a solid, Phys. Lett. 32A, 520 (1970)	1970
PRA/1/1/83	E.R. Andrew, Conformational motion and conformational order-disorder in solids, Phys. Lett. 34A, 30 (1971)	1971
PRA/1/1/84	E.R. Andrew and A. Jasinski, Nuclear magnetic resonance spectra of rapidly-rotated solids containing reorienting molecular groups, J. Phys. C: Solid State Phys. 4, 391 (1971)	1971
PRA/1/1/85	E.R. Andrew, The narrowing of NMR spectra of solids by high-speed specimen rotation and the resolution of chemical shift and spin multiplet structures for solids, Prog. NMR Spectroscopy 8, I (1971)	1971
PRA/1/1/86	E.R. Andrew, J.L. Carolan and P.J. Randall, More precise Knight shift measurements: application to copper, Phys. Lett. 35A, 435 (1971)	1971
PRA/1/1/87	E.R. Andrew, J.L. Carolan and P.J. Randall, Measurement of the Ruderman-Kittel interaction for copper, Phys. Lett. 37A, 125 (1971)	1971
PRA/1/1/88	E.R. Andrew, NMR and conformational motion in solids, Proc. 16th Congr. AMPÈRE, Bucharest, 1970, 11 (1971)	1971
PRA/1/1/89	E.R. Andrew and A. Jasinski, Nuclear magnetic resonance spectra of rapidly-rotated solids containing reorienting molecular groups II, Proc. 16th Congr. AMPÈRE, Bucharest, 1970, 1019 (1971)	1971
PRA/1/1/90	E.R. Andrew, J.L. Carolan and P.J. Randall, Precise measurements of the 63Cu and 65Cu NMR chemical shifts in solid cuprous halides by the high-speed rotation method, Chem. Phys. Lett. 11, 298 (1971)	1971
PRA/1/1/91	E.R. Andrew, Twenty-fifth anniversary of the discovery of NMR, Nature 233, 374 (1971)	1971

PRA/1/1/92	E.R. Andrew, Wide-line nuclear magnetic resonance, Mag. Res. Rev. 1, 33 (1972)	1972
PRA/1/1/93	E.R. Andrew and P.C. Canepa, A proton magnetic resonance investigation of solid mono-, di-, tri- and tetra-methyl-ammonium chlorides, J. Mag. Res. 7, 429 (1972)	1972
PRA/1/1/94	E.R. Andrew and J. Lipofsky, The second moment of the motionally-narrowed NMR spectrum of a solid, J. Mag. Res. 8, 217 (1972)	1972
PRA/1/1/95	E.R. Andrew, Developments in the motional narrowing of the NMR spectra of solids microscopic and macroscopic, Pure and Applied Chemistry 32, 41 (1972)	1972
PRA/1/1/96	E.R. Andrew, NMR in rapidly-rotated metals, Proc. 17th Congr. AMPÈRE, Turku, 18 (1972)	1972
PRA/1/1/97	E.R. Andrew, NMR spectra of reorienting nuclear pairs in solids. II. Unequal residence times and conformational order-disorder, J. Mag. Res. 9, 108 (1973)	1973
PRA/1/1/98	E.R. Andrew and W.S. Hinshaw, Indirect nuclear interaction coupling constants for metallic copper, Phys. Lett. A43, 113 (1973)	1973
PRA/1/1/99	E.R. Andrew, W. S. Hinshaw. and R.S. Tiffen, Nuclear spin-lattice relaxation in solid cuprous halides, J. Phys. C: Solid State Phys. 6, 2217 (1973)	1973
PRA/1/1/100	E.R. Andrew, W.S. Hinshaw and R.S. Tiffen, More precise determination of the Knight shift of aluminium, Phys. Lett. 46A, 57 (1973)	1973
PRA/1/1/101	E.R. Andrew, High resolution in NMR solids, Proc. 1st Spec. Colloque AMPÈRE, Cracow, 3 (1973)	1973
PRA/1/1/102	E.R. Andrew, W.S. Hinshaw and A. Jasinski, An AB3 high-resolution NMR spectrum in the solid state: 31P in P4S3, Chem. Phys. Lett., 24, 399 (1974)	1974

PRA/1/1/103	E.R. Andrew, W.S. Hinshaw, M.G. Hutchins and P.C. Canepa, A solid·state proton NMR investigation of amino acids found in proteins, Chem. Phys. Lett. 26, 50 (1974)	1974
PRA/1/1/104	E.R. Andrew, W.S. Hinshaw, M.G. Hutchins and A. Jasinski, 31P nuclear magnetic relaxation in solid P4S3, Chem. Phys. Lett. 27, 96 (1974)	1974
PRA/1/1/105	E.R. Andrew, W.S. Hinshaw and R.S. Tiffen, NMR in rapidly rotated metallic aluminium and cadmium, J. Mag. Res. IS, 191 (1974)	1974
PRA/1/1/106	E.R. Andrew, W.S. Hinshaw and M.G. Hutchins, Proton magnetic relaxation in crystalline amino acids, J. Mag. Res. 15. 196 (1974)	1974
PRA/1/1/107	E.R. Andrew, W.S. Hinshaw and R.S. Tiffen, The anomalous 27Al NMR second moment in metallic aluminium, J. Phys. F: Metal Physics 4, L215 (1974)	1974
PRA/1/1/108	A. Tzalmona and E.R. Andrew, Nuclear magnetic resonance of 133Cs in rapidly rotated solid caesium compounds, Proc. 18th Congr. AMPÈRE, Nottingham, 241 (1974)	1974
PRA/1/1/109	E.R. Andrew, W.S. Hinshaw. M.G. Hutchins and R.O.I. Sjöblom, Investigation of molecular motion of polycrystalline amino acids by proton magnetic resonance, Proc. 18th Congr. AMPÈRE., Nottingham, 269 (1974)	1974
PRA/1/1/110	E.R. Andrew, H.J. Gale, W.S. Hinshaw and W. Vennart, A magnetic resonance investigation of the effects of radiation on amino acids in a glass matrix, Proc. 18th Congr. AMPÈRE, Nottingham, 271 (1974)	1974
PRA/1/1/111	E.R. Andrew, W.S. Hinshaw and R.S. Tiffen, Magic angle rotation and Knight shift determination for aluminium and cadmium, Proc. 18th Congr. AMPÈRE, Nottingham, 325 (1974)	1974
PRA/1/1/112	E.R. Andrew, 18th AMPÈRE Congress, Nottingham, Europhysics News 6, 7 (1975)	1975

PRA/1/1/113	E.R. Andrew, R.C. Canepa, L.M. Ishol and T.A. Scott, High field NQR of 14N in single crystal glycine, 3rd Int. Symp. NQR Spectroscopy, 111 (1975)	1975
PRA/1/1/114	E.R. Andrew, Scientific research in British Universities, Memorandum to House of Commons Select Committee on Science and Technology, Second Report, Memoranda Part I, HMSO 261, 84 (1975)	1975
PRA/1/1/115	E.R. Andrew, High resolution NMR in solids, Int. Rev. Sci.: Phys. Chem. ser. 2, vol. 4 (Magnetic resonance), 173-208 (1975)	1975
PRA/1/1/116	E.R. Andrew, Spin mapping, Phys. Bull. 27, 15 (1976)	1976
PRA/1/1/117	E.R. Andrew, R. Gáspár and W. Vennart, Proton magnetic resonance investigations of solid polyamino acids, Chem. Phys. Lett. 38, 141 (1976)	1976
PRA/1/1/118	E.R. Andrew, W.S. Hinshaw, M.G. Hutchins and R.O.I. Sjöblom, Proton magnetic relaxation and molecular motion in polycrystalline amino acids. I. Aspartic acid, cystine, glycine, histidine, serine, tryptophan and tyrosine, Mol. Phys. 31, 1479 (1976)	1976
PRA/1/1/119	E.R. Andrew, W.S. Hinshaw. M.G. Hutchins, R.O.I. Sjöblom and P.C. Canepa, Proton magnetic relaxation and molecular motion in polycrystalline amino acids. II. Alanine, isoleucine, leucine, methionine, norleucine, threonine and valine, Mol. Phys., 32, 795 (1976)	1976
PRA/1/1/120	E.R. Andrew, Le professeur Alfred Kastler, Docteur honoris causa de l'université de Nottingham (UK), Bulletin du Groupement d'Information Mutuelles AMPÈRE 89, 2-4 (1976)	1976
PRA/1/1/121	E.R. Andrew, W. Vennart, G. Bonnard, R.M. Croiset, M. Demarcq and E. Mathieu, 31P NMR spectra of P4S9 and P4S10: comparison with related compounds, Chem. Phys. Lett. 43, 317 (1976)	1976
PRA/1/1/122	E.R. Andrew, W.S. Hinshaw and W.S. Moore, Spin mapping. Brit. J. Radiology 49, 1052 (1976)	1976

PRA/1/1/123	E.R. Andrew, Nuclear magnetic resonance imaging, Phys. Med. Biol. 21, 1004 (1976)	1976
PRA/1/1/124	E.R. Andrew, R. Gáspár, T.J. Green and W. Vennart, Proton magnetic relaxation in solid peptides, Proc. 19th Congr. AMPÈRE, Heidelberg, 131 (1976)	1976
PRA/1/1/125	E.R. Andrew, NMR studies in solids and NMR spin mapping, Molecular Spectroscopy, Heyden: London, 65 (1977)	1977
PRA/1/1/126	E.R. Andrew, P.A. Bottomley, W.S. Hinshaw, G.N. Holland, W.S. Moore and C. Simaroj, NMR images by the multiple sensitive point method: application to larger biological systems, Phys. Med. Biol. 22, 971 (1977)	1977
PRA/1/1/127	E.R. Andrew, Zeugmatography, Proc. 4th AMPÈRE Int. Summer School, Pula, Yugoslavia, September 1976, ed. R. Blinc and G. Lahajnar, 1-39 (1977)	1977
PRA/1/1/128	E.R. Andrew, Body scanning by nuclear spin, Spectrum 150, 2 (1977)	1977
PRA/1/1/129	E.R. Andrew, Imaging by nuclear magnetic resonance, Phys. Bull. 28, 323 (1977)	1977
PRA/1/1/130	M.J.R. Hoch and E.R. Andrew, Proton magnetic relaxation in the nucleic acid bases and DNA, Chem. Phys. Lett. 48, 377 (1977)	1977
PRA/1/1/131	E.R. Andrew, W.S. Hinshaw, M.G. Hutchins and R.O.I. Sjöblom, Proton magnetic relaxation and molecular motion in polycrystalline amino acids. III. Arginine, asparagine, cysteine, glutamine, phenylalanine and proline, Mol. Phys. 34, 1695 (1977)	1977
PRA/1/1/132	E.R. Andrew and G.J. Béné, Groupement AMPÈRE, Phys. Bull. 28, 467 (1977)	1977
PRA/1/1/133	E.R. Andrew, W.S. Hinshaw, P.A. Bottomley, G.N. Holland, W.S. Moore and B.S. Worthington, Display of cross sectional anatomy by nuclear magnetic resonance imaging, Brit. J. Radiology 51, 273 (1978)	1978

PRA/1/1/134	E.R. Andrew, L'exploration du corps par spin nucléaire, Médecine et Hygiène 36, 1862 (1978)	1978
PRA/1/1/135	E.R. Andrew, T.J. Green and M.J.R. Hoch, Solid state proton relaxation of biomolecular components, J. Mag. Res. 29, 331 (1978)	1978
PRA/1/1/136	P.A. Bottomley and E.R. Andrew, RF magnetic field penetration, phase shift and power dissipation in biological tissue - implications for NMR imaging, Phys. Med. Biol. 23, 630-643 (1978)	1978
PRA/1/1/137	W.S. Hinshaw, E.R. Andrew, P.A. Bottomley, G.N. Holland, W.S. Moore and B.S. Worthington, Internal structural mapping of nuclear magnetic resonance, Neuroradiology 16, 607 (1978)	1978
PRA/1/1/138	E.R. Andrew, Body scanning by nuclear spin, Austr. J. Instr. and Control 34, 100 (1978)	1978
PRA/1/1/139	E.R. Andrew, W.S. Hinshaw, G.N. Holland, W.S. Moore, C. Simaroj and B.S. Worthington, NMR imaging in medicine and biology, Proc. 20th Congr. AMPÈRE, Tallinn, USSR, 53-56 (1978)	1978
PRA/1/1/140	E.R. Andrew, R. Gáspár and W. Vennart, Proton magnetic relaxation in solid poly-L-alanine, poly-L-leucine, poly-L-valine and polyglycine, Biopolymers 17, 1913 (1978)	1978
PRA/1/1/141	E.R. Andrew, P.A. Bottomley, W.S. Hinshaw, G.N. Holland, W.S. Moore, C. Simaroj and B. S, Worthington, NMR imaging in biological systems, Int. Conf. Mag. Res. Biol. Systems, Nara, Japan, 144 (1978)	1978
PRA/1/1/142	E.R. Andrew, W.S. Hinshaw, M.G. Hutchins and A. Jasinski, A nuclear magnetic resonance investigation of solid tetraphosphorus trisulphide, Proc. Roy. Soc. 364A, 553 (1978)	1978
PRA/1/1/143	E.R. Andrew, Introduction and principles of continuous wave NMR. In: *Nuclear Resonance in Solids*, Proc. 5th AMPÈRE Int. Summer School & Symp., Rhodos, Greece, ed. F. Milia (1978)	1978

PRA/1/1/144	E.R. Andrew, Developments of NMR imaging: zeugmatography. In: *Nuclear Resonance in Solids*, Proc. 5th AMPÈRE Int. Summer School & Symp., Rhodos, Greece, ed. F. Milia (1978)	1978
PRA/1/1/145	E.R. Andrew, Report on XX Congress AMPÈRE, Tallinn, USSR, 21-26 August 1978, Bull. Mag. Res. 1, 61 (1979)	1979
PRA/1/1/146	E.R. Andrew, H.J. Gale and W. Vennart, Lithium chloride glass as a neutral matrix for the EPR study of radiation damage to biomolecules, J. Mag. Res. 33, 289 (1979)	1979
PRA/1/1/147	W.S. Hinshaw, E.R. Andrew, P.A. Bottomley, G.N. Holland, W.S. Moore and B.S. Worthington, An in vivo study of the fore-arm and hand by thin section NMR imaging, Brit. J. Radiology 52, 36 (1979)	1979
PRA/1/1/148	E.R. Andrew, Nuclear magnetic resonance imaging: Zeugmatography. In: *Medical Imaging*, ed. L. Kreel, H.M. and M. Publishers Ltd: Aylesbury, 38-43 (1979)	1979
PRA/1/1/149	W.S. Hinshaw, E.R. Andrew, P.A. Bottomley, G.N. Holland, W.S. Moore and B.S. Worthington, Internal morphological analysis by NMR imaging, Brit. J. Radiology 52, 349 (1979)	1979
PRA/1/1/150	E.R. Andrew, P.A. Bottomley, W.S. Hinshaw, G.N. Holland, W.S. Moore, C. Simaroj and B.S. Worthington, NMR imaging at intermediate sizes, Brit. J. Radiology 52, 680 (1979)	1979
PRA/1/1/151	W.S. Hinshaw, E.R. Andrew, P.A. Bottomley, G.N. Holland, W.S. Moore and B.S. Worthington, In-vivo display of macroscopic structure by NMR, Brit. Ass. of Clin. Anatom. 61, 154 (1979)	1979
PRA/1/1/152	E.R. Andrew, D.J. Bryant and E.M. Cashell, Proton magnetic relaxation of proteins in the solid state: molecular dynamics of ribonuclease, Chem. Phys. Lett. 69, 551 (1980)	1980
PRA/1/1/153	E.R. Andrew, NMR imaging of intact biological systems, Phil. Trans. Roy. Soc. B289, 471 (1980)	1980

PRA/1/1/154	E.R. Andrew, Nuclear magnetic resonance of intact biological systems: concluding remarks, Phil. Trans. Roy. Soc. B289, 553 (1980)	1980
PRA/1/1/155	E.R. Andrew and M.J.R. Hoch, Magnetic resonance imaging, South African J. Sci. 76, 256 (1980)	1980
PRA/1/1/156	E.R. Andrew, Nuclear magnetic resonance imaging: the multiple sensitive point method, IEEE Trans. Nucl. Sci., NS-27, 1232 (1980)	1980
PRA/1/1/157	E.R. Andrew, NMR imaging in biology and medicine, Biophys. Struct. Mech. 6, Suppl. 1-4 (1980)	1980
PRA/1/1/158	E.R. Andrew, NMR imaging in intact biological systems, Proc. RAMIS-79, Poznan, 5 (1980)	1980
PRA/1/1/159	E.R. Andrew, Magic angle spinning in solid state NMR spectroscopy, Phil. Trans. Roy. Soc. A299, 505 (1981)	1981
PRA/1/1/160	E.R. Andrew and B.S. Worthington, Nuclear magnetic resonance imaging, Radiology of the Skull and Brain, Mosby: St. Louis 132, 4389 (1981)	1981
PRA/1/1/161	E.R. Andrew, D.J. Bryant, E.M. Cashell and B.A. Dunell, Chemical shift in solid sodium triphosphate, Chem. Phys. Lett. 77, 614 (1981)	1981
PRA/1/1/162	E.R. Andrew, D.J. Bryant, E. M. Cashell and Q.A. Meng, A proton NMR study of relaxation and dynamics in polycrystalline insulin, FEBS Lett. 126, 208 (1981)	1981
PRA/1/1/163	E.R. Andrew, D.J. Bryant, E.M. Cashell, R. Gáspár and Q.A. Meng, Proton magnetic relaxation and dynamics of solid poly-L-proline and polyglycine, Polymer Communications 22, 715 (1981)	1981
PRA/1/1/164	E.R. Andrew, The application of nuclear magnetic resonance in medicine, Abstracts 15th Int. Congr. of Radiology, Brussels, Section II, NM 088 (1981)	1981

PRA/1/1/165	E.R. Andrew and D.C. Lainé, Radiospectroscopy Jubilee, Phys. Bull. 32, 246 (1981)	1981
PRA/1/1/166	E.R. Andrew and D.C. Lainé, The British Radio Spectroscopy Group. The first 25 years, European Spect. News 36, 20-21 (1981)	1981
PRA/1/1/167	E.R. Andrew, Magic angle spinning, Int. Rev. Phys. Chem. 1, 195-224 (1981)	1981
PRA/1/1/168	E.R. Andrew, D.J. Bryant, E.M. Cashell and Q.A. Meng, Solid state dynamics of proteins by nuclear magnetic relaxation, Phys. Lett. 88A, 487-490 (1982)	1982
PRA/1/1/169	R. Gáspár, E.R. Andrew, D.J. Bryant and E.M. Cashell, Dipolar relaxation and slow molecular motions in solid proteins, Chem. Phys. Lett. 86, 327-330 (1982)	1982
PRA/1/1/170	E.R. Andrew, Nuclear magnetic resonance imaging. In: *Scientific Basis of Medical Imaging*, ed. P.N.T. Wells, Churchill Livingstone: Edinburgh, 6, 212-236 (1982) Photocopy.	1982
PRA/1/1/171	E.R. Andrew, D.N. Bone, D.J. Bryant, E.M. Cashell, R. Gáspár and Q.A. Meng, Proton relaxation studies of dynamics of proteins in the solid state, Pure Appl. Chem. 54, 585-594 (1982)	1982
PRA/1/1/172	E.R. Andrew, Developments in NMR Imaging, Proc. 10th Int. Conf. Mag. Res. Biol. Systems, L 3 (1982)	1982
PRA/1/1/173	E.R. Andrew, D.J. Bryant and T.Z. Rizvi, Relaxation by water molecules in solid proteins, Proc. 10th Int. Conf. Mag. Res. Biol. Systems, P 109 (1982)	1982
PRA/1/1/174	E.R. Andrew, D.N. Bone, D.J. Bryant, E.M. Cashell and R. Gáspár, Slow molecular motions in solid proteins investigated through T1D, Proc. 10th Int. Conf. Mag. Res. Biol. Systems, P 110 (1982)	1982

PRA/1/1/175	E.R. Andrew, The application of nuclear magnetic resonance in medicine: methods of NMR imaging, Proc. Int. Workshop Phys. & Eng. in Med. Imaging, IEEE, 271-276 (1982)	1982
PRA/1/1/176	E.R. Andrew, The current status of medical imaging, Bioscience Reports 2, 707-712 (1982)	1982
PRA/1/1/177	E.R. Andrew, Spin imaging. In: *New Techniques and Applications of Magnetic Resonance*, Proc. 7th AMPÈRE Int. Summer School, Portoroz, Yugoslavia, ed. R. Blinc and M. Vilfan, 29-48 (1982)	1982
PRA/1/1/178	E.R. Andrew, Perspectives in NMR imaging. In: *Nuclear Magnetic Resonance Imaging*, ed. C.L. Partain, A.E. James, F.D. Rollo and R.R. Price, W.B. Saunders Co: Philadelphia, 3-14 (1983)	1983
PRA/1/1/179	E.R. Andrew, D.J. Bryant and T.Z. Rizvi, The Role of water in the dynamics and proton relaxation of solid proteins, Chem. Phys. Lett. 95, 463-466 (1983)	1983
PRA/1/1/180	E.R. Andrew, Etat actuel de l'imagerie RMN. In: *Progrès de la RMN en Médecine*, ed. P.G. Carlier, Editions Georges Thone: Liège, 15-24 (1983)	1983
PRA/1/1/181	E.R. Andrew, NMR imaging, Accounts Chem. Research 16, 114-122 (1983)	1983
PRA/1/1/182	E.R. Andrew, Protein dynamics in the solid state by proton relaxation, Bull. Mag. Res. 5, 104-106 (1983)	1983
PRA/1/1/183	E.R. Andrew, Foreword. In: *Nuclear Magnetic Resonance and Correlative Imaging Modalities*, ed. L. Partain, Soc. Nucl. Med.: New York, vii-ix (1983)	1983
PRA/1/1/184	E.R. Andrew, A review of spin imaging: recent developments, Abstracts 6th Spec. Int. Colloque AMPÈRE on Quadrupole Interactions and Spatially Resolved NMR in Solids, 1 (1983)	1983
PRA/1/1/185	E.R. Andrew, A historical review of NMR and its clinical applications, Brit. Med. Bull. 40, 115-119 (1984)	1984

PRA/1/1/186	E.R. Andrew, Developments in NMR imaging, Proc. 11th Int. Conf. Mag. Res. Biol. Systems, Goa, India, 19 (1984)	1984
PRA/1/1/187	E.R. Andrew, Introduction to NMR Spectroscopy, Abstracts 3rd Ann. Mtg. Soc. Mag. Res. Med., New York, 7-8 (1984)	1984
PRA/1/1/188	E.R. Andrew, Resonance applied, Nature 310, 803 (1984)	1984
PRA/1/1/189	E.R. Andrew, Advances in NMR imaging, Abstracts 36th SE Regional Mtg. Am. Chem. Soc., 30 (1984)	1984
PRA/1/1/190	E.R. Andrew, In memoriam: William S. Moore, Mag. Res. in Med. 1, 435 (1984)	1984
PRA/1/1/191	E.R. Andrew, NMR of biopolymers, Polymer Communications 26, 190 (1985)	1985
PRA/1/1/192	E.R. Andrew, MR Physics for the physician, Abstr. 23rd Ann. Mt. Sinai Seminar on Mag. Res. Imaging in Med. Practice (1985)	1985
PRA/1/1/193	E.R. Andrew, MR Physics and Imagining for Radiologic Technologists, Abstracts 23rd Ann. Mt. Sinai Seminar on Mag. Res. Imaging in Med. Practice (1985)	1985
PRA/1/1/194	E.R. Andrew, Medical imaging by nuclear magnetic resonance, Abstracts Central Regional Mtg. Am. Chem. Soc., Akron, 23 (1985)	1985
PRA/1/1/195	H. Pettersson, D.J. Hamlin, W.F. Enneking, D.S. Springfield, E.R. Andrew, S. Spanier and R. Slone, MRI of musculoskeletal tumours, experience of 180 cases, Proc. 4th Ann. Mtg. Soc. Mag. Res. Med. 2, 1192 (1985)	1985
PRA/1/1/196	E.R. Andrew, Physics and principles of NMR imaging, Proc. IEEE Symposium on NMR imaging, San Francisco (1985)	1985
PRA/1/1/197	E.R. Andrew, The use of nuclear magnetic resonance in medicine, Abstracts Med. Section Proc. Am. Council Life Insurance (1985)	1985

PRA/1/1/198	E.R. Andrew, MRI: the new medical imaging modality, Proc. 7th Spec. Colloque AMPÈRE, Romania, 1 (1985)	1985
PRA/1/1/199	E.R. Andrew, Felix Bloch: introduction to memorial issue, Bull. Mag. Res. 7, 81 (1985)	1985
PRA/1/1/200	E.R. Andrew, Recent advances in NMR imaging. In: *Physics in Environmental and Biomedical Research*, Rome, 42 (1985)	1985
PRA/1/1/201	E.R. Andrew and H.T.A. Pettersson, MRI in the preoperative evaluation of musculoskeletal tumours, Proc. Int. Conf. Mag. Res. Cancer, Banff, 20 (1985)	1985
PRA/1/1/202	E.R. Andrew, NMR imaging in medicine: physical principles, The Wellcome Foundation Lecture, Proc. Roy. Soc. B225, 399-410 (1985)	1985
PRA/1/1/203	E.R. Andrew, Introduction to high resolution NMR spectroscopy in solids, Proc. BRSG Mtg., Oxford, 3 (1986)	1986
PRA/1/1/204	E.R. Andrew, The use of nuclear magnetic resonance in medicine, Med. Section Proc. Am. Council Life Insurance, 11-18 (1986)	1986
PRA/1/1/205	E.R. Andrew and H.T.A. Pettersson, MRI in the preoperative evaluation of musculoskeletal tumours. In: *Magnetic Resonance in Cancer*, ed. P.S. Allen, Pergamon Press, 37-38 (1986)	1986
PRA/1/1/206	E.R. Andrew and L. Latanowicz, Solid state proton transfer dynamics and the proton NMR second moment and proton relaxation times, J. Mag. Res. 68, 232-239 (1986)	1986
PRA/1/1/207	E.R. Andrew and J.R. Fitzsimmons, Developments in NMR imaging, Proc. 9th ISMAR Mtg., Rio de Janeiro, 1 (1986)	1986
PRA/1/1/208	E.R. Andrew, MRI: The new medical imaging modality, Proc. 7th Spec. Colloque AMPÈRE, Bucharest, CIP Press: Bucharest, 21-40 (1986)	1986

PRA/1/1/209	E.R. Andrew, Recent advances in NMR imaging. In: *Physics in Environmental and Biomedical Research*, World Scientific Publishing Company, Singapore, 225-236 (1986)	1986
PRA/1/1/210	E.R. Andrew, Recent developments in NMR imaging, Proc. 13th Congr. AMPÈRE on Mag. Res., Rome, 19-22 (1986)	1986
PRA/1/1/211	E.R. Andrew and L. Latanowicz, Hydrogen bond dynamics in monosaccharides, Proc. 13th Congr. AMPÈRE on Mag. Res., Rome, 334-335 (1986)	1986
PRA/1/1/212	E.R. Andrew, Foreword. In: *NMR in Medicine: The Instrumentation and Clinical Applications*, ed. S.R. Thomas and R.L. Dixon, Am. Inst. Phys.: Med. Phys. Monograph 14 (1986)	1986
PRA/1/1/213	E.R. Andrew, NMR spectroscopy principles. In: *Medical Magnetic Resonance Imaging and Spectroscopy*, ed. T.F. Budinger and A.R. Margulis, 71-80 (1986)	1986
PRA/1/1/214	E.R. Andrew, Magnetic resonance imaging: seeing safely inside the human body, The Royal Institution Lectures, October-December 9 (1986)	1986
PRA/1/1/215	J. Mao, T. H. Mareci, K.N. Scott and E.R. Andrew, Selective inversion radiofrequency pulses by optimal control, J. Mag. Res. 70, 310-318 (1986)	1986
PRA/1/1/216	E.R. Andrew and L. Latanowicz, [Influence of proton transfer in a hydrogen bond on the second moment of the NMR spectrum and nuclear magnetic relaxation], Materiały XVIII Ogólnopolskiego Seminarium Na Temat Magnetycznego Rezonansu Jadrowego [Proc. 18th Polish Seminar on NMR & its Applications], 16-23 (1986) Photocopy.	1986
PRA/1/1/217	E.R. Andrew and L. Latanowicz, Badanie dynamiki molekularnej alpha-D glukozy metoda JRP [Molecular dynamics of alpha-D glucose as studied by NMR], Materiały XVIII Ogólnopolskiego Seminarium Na Temat Magnetycznego Rezonansu Jadrowego [Proc. 18th Polish Seminar on NMR & its Applications], 24-35 (1986) Photocopy.	1986

PRA/1/1/218	E.R. Andrew and J. Kapturczak, Badanie amorficznej celulozy metoda magnetycznego rezonansu jadrowego [NMR studies of amorphous cellulose], Materiały XVIII Ogólnopolskiego Seminarium Na Temat Magnetycznego Rezonansu Jadrowego [Proc. 18th Polish Seminar on NMR & its Applications], 93-99 (1986) Photocopy.	1986
PRA/1/1/219	T.Z. Rizvi and E.R. Andrew, Hydration studies in solid proteins using pulsed NMR, Proc. Pakistan Acad. Sci. 23, 141-154 (1986)	1986
PRA/1/1/220	J. Mao, T.H. Mareci, K.N. Scott and E.R. Andrew, Optimal selective inversion RF pulse, Proc. SMRM Montreal, 1404-5 (1986)	1986
PRA/1/1/221	E.R. Andrew, Human images by nuclear magnetic resonance, Int. Symp. Quant. Biol. Abstracts 1 (1987)	1987
PRA/1/1/222	E.R. Andrew, NMR basic principles and magic angle spinning, NATO Adv. Study Inst., Pisa, I 1-9 (1987)	1987
PRA/1/1/223	E.R. Andrew and K. Jurga, NMR probe with short recovery time, J. Mag. Res. 73, 268-276 (1987)	1987
PRA/1/1/224	E.R. Andrew and E. Szcześniak, Magnetic shielding of magnetic resonance systems, Proc. SMRM New York, 395 (1987)	1987
PRA/1/1/225	E.R. Andrew and R. Gáspár, Proton magnetic relaxation in adenosine monophosphate in solution, Proc. SMRM New York, 1031 (1987)	1987
PRA/1/1/226	E.R. Andrew and J.R. Fitzsimmons, Developments in NMR imaging, Bull. Mag. Res. 9, 53-65 (1987)	1987
PRA/1/1/227	E.C. Reynhardt, K. Jurga and E.R. Andrew, An NMR study of 1H, 31P and 23Na relaxation and molecular dynamics in the polycrystalline sodium salts of adenosine di- and triphosphate, J. Mag. Res. 74, 480-502 (1987)	1987

PRA/1/1/228	J. Mao, T.H. Mareci, K.N. Scott and E.R. Andrew, Experimental study of the optimized selection of pulses, Abstracts 28th Experimental NMR Conf., WK32 (1987)	1987
PRA/1/1/229	E.R. Andrew, Human images by nuclear magnetic resonance, Int. J. Quant. Chem.: Quant. Biol. Symp. 14, 331-339 (1987)	1987
PRA/1/1/230	E.R. Andrew, Fruits of NMR. Review of P.G. Morris, *Nuclear Magnetic Resonance Imaging in Medicine and Biology* (Clarendon 1986), Nature 325, 116 (1987)	1987
PRA/1/1/231	E.R. Andrew, Principles and practice of NMR tomography in medicine, Proc. 9th AMPÈRE Summer School, Novosibirsk, 9 (1987)	1987
PRA/1/1/232	E.R. Andrew, Magnetic resonance in medicine: historical overview & future, SMRM Newsletter 13, 6-7 (1987)	1987
PRA/1/1/233	E.R. Andrew, Magnetic resonance imaging: seeing safely inside the human body, Proc. Roy. Inst. GB 59, 279-296 (1987)	1987
PRA/1/1/234	E.R. Andrew, Recent developments in nuclear magnetic resonance imaging, Arabian J. Sci. & Eng. 13, 133-144 (1988)	1988
PRA/1/1/235	E.R. Andrew and R. Gáspár, Proton magnetic relaxation of adenosine 5' monophosphate in solution, Chem. Phys. Lett. 146, 184-188 (1988)	1988
PRA/1/1/236	E.C. Reynhardt, K. Jurga and E.R. Andrew, An NMR study of 1H, 31P and 23Na relaxation and molecular dynamics in the polycrystalline disodium salt of N-phosphocreatine hydrate, J. Mag. Res. 78, 97-112 (1988)	1988
PRA/1/1/237	E.R. Andrew and R. Gáspár, Proton magnetic relaxation of adenosine diphosphate and adenosine triphosphate in solution, Chem. Phys. Lett. 147, 551-556 (1988)	1988
PRA/1/1/238	E.R. Andrew, Theory of NMR imaging. In: *NMR in the Life Sciences* (Plenum Press: New York), 187-197 (1988)	1988

PRA/1/1/239	J. Mao, T.H. Mareci and E.R. Andrew, Experimental study of optimal selective 180 degree radiofrequency pulses, J. Mag. Res. 79, 1-10 (1988)	1988
PRA/1/1/240	E.R. Andrew, NMR from molecules to man, Rev. Roum. de Phys. 33, 335-340 (1988)	1988
PRA/1/1/241	E.R. Andrew, J. Kapturczak and S. Głowinowski, Dynamika molekularna kolagenu [Molecular dynamics of collagen], Materiały XX Ogólnopolskiego Seminarium Na Temat Magnetycznego Rezonansu Jadrowego [Proc. 20th Polish Seminar on NMR & its Applications], 67-71 (1988) Photocopy. Includes a translation into English by B. Peplinska.	1988
PRA/1/1/242	E.R. Andrew and L. Latanowicz, Dynamika grup hydroksylowych w polikristalicznych cukrach [Dynamics of hydroxyl groups in polycrystalline sugars], Materiały XX Ogólnopolskiego Seminarium Na Temat Magnetycznego Rezonansu Jadrowego [Proc. 20th Polish Seminar on NMR & its Applications], 72-81 (1988) Photocopy. Includes a translation into English by B. Peplinska.	1988
PRA/1/1/243	E.R. Andrew, Advances in NMR imaging, Abstracts 24th Congr. AMPÈRE, Poznan, Poland, L-42 (1988)	1988
PRA/1/1/244	E.R. Andrew and E. Szcześniak, NMR study of molecular dynamics and phase transition in solid 2-methyl-2propaneselenol, Abstracts 24th Congr. AMPÈRE, Poznan, Poland, A-40 (1988)	1988
PRA/1/1/245	L. Latanowicz, Z. Pajak and E.R. Andrew, NMR second moment and relaxation rate in the presence of fluctuations of the radial part of the dipolar interaction, Abstracts 24th Congr. AMPÈRE, Poznan, Poland. A-52 (1988)	1988
PRA/1/1/246	E.R. Andrew, NMR in medicine: a historical review. In: *Magnetic Resonance Imaging*, ed. C.L. Partain et al., W.B. Saunders Co: Philadelphia, 9-20 (1988)	1988
PRA/1/1/247	E.R. Andrew, K. Jurga and E. Szcześniak, Molecular motions and polymorphic properties of solid 2-methyl-2-propane-selenol as studied by NMR, Molec. Phys. 65, 1421-	1988

/...

/...

1430 (1988)

PRA/1/1/248

E.R. Andrew, Advances in nuclear magnetic resonance imaging in medicine, Abstracts 5th National Mtg. on Magnetic Res., Fuzhou, China, 1 (1988)

1988

PRA/1/1/249

R. Gáspár, W.S. Brey, A. Qiu and E.R. Andrew, Phosphorus-31 magnetic relaxation of adenosine monophosphate, adenosine diphosphate and adenosine triphosphate in solution, Chem. Phys. Lett. 156, 619-622 (1989)

1989

PRA/1/1/250

E.R. Andrew and E. Szcześniak, Magnetic shielding of magnetic resonance systems, Mag. Res. Med. 10, 373-387 (1989)

1989

PRA/1/1/251

P.A. Bottomley and E.R. Andrew, RF magnetic field penetration, phase shift and power dissipation in biological tissue: implications for NMR imaging. In: *NMR in Biomedicine: The Physical Basis*, ed. E. Fukushima, Am. Inst. Phys. 123-136 (1989)

1989

PRA/1/1/252

E.R. Andrew, K. Jurga and E. Szcześniak, An NMR investigation of solid t-butyl selenol, Proc. 10th ISMAR Mtg., Morzine, P 1-11 (1989)

1989

PRA/1/1/253

E.R. Andrew and B. Peplinska, An NMR investigation of solid cholesterol, Proc. 10th ISMAR Mtg., Morzine, P 1-12 (1989)

1989

PRA/1/1/254

E.R. Andrew and M.F. Kempka, NMR study of molecular motion in solid cortisone, Proc. 10th ISMAR Mtg., Morzine, P1-13 (1989)

1989

PRA/1/1/255

E.C. Reynhardt, S. Froneman, E.R. Andrew and E. Szcześniak, An NMR study of 1H, 31P and 23Na relaxation and molecular dynamics in the polycrystalline sodium salt of adenosine monophosphate, J. Mag. Res. 84, 110-120 (1989)

1989

PRA/1/1/256

E.R. Andrew, Topical questions in magnetic resonance imaging, Proc. 14th Congr. AMPÈRE, Poznan, 45-51 (1989)

1989

PRA/1/1/257	E.R. Andrew, W.S. Brey, R. Gáspár and A. Qiu, 31P relaxation of AMP, ADP and ATP in solution, Proc. 8th SMRM Mtg., Amsterdam, 769 (1989)	1989
PRA/1/1/258	E.R. Andrew, An overview of magnetic resonance imaging, Abstracts, British Radiofrequency Spectroscopy Group Mtg. on Spatially Determined NMR, Cambridge, 9 (1989)	1989
PRA/1/1/259	E.C. Reynhardt, K. Jurga and E.R. Andrew, An NMR study of 1H and 31P relaxation and molecular dynamics in polycrystalline nicotinamide adenine dinucleotide (NAD+), J. Mag. Res. 85, 506-523 (1989)	1989
PRA/1/1/260	E.R. Andrew, An introduction to nuclear magnetic resonance in biomedicine, J. Canad. Assoc. of Radiologists 41, 2-7 (1990)	1990
PRA/1/1/261	E.R. Andrew, NMR penetration into the body, Citation Classic, Current Contents, Clinical Medicine 18, 24 (1990)	1990
PRA/1/1/262	E.R. Andrew, Introduction to nuclear magnetic resonance in biology and medicine. In: *Non-invasive Techniques in Biology and Medicine*, ed. S.E. Freeman, E. Fukushima and E.R. Greene, San Francisco Press Inc., 75-87 (1990)	1990
PRA/1/1/263	E.R. Andrew, Magnetic Resonance Imaging. In: *Conductivity and Magnetism, The Legacy of Felix Bloch*, ed. W.A. Little, World Scientific Publishing Co., Singapore, 1269-1281 (1990)	1990
PRA/1/1/264	R. Gáspár and E.R. Andrew, Phosphorus-31 magnetic relaxation of inorganic ortho-phosphate in solution, Chem. Phys. Lett. 170, 171-174 (1990)	1990
PRA/1/1/265	E.R. Andrew and B. Peplinska, NMR study of solid cholesterol, Molecular Physics 70, 505-512 (1990)	1990
PRA/1/1/266	E.R. Andrew, W.S. Brey and R. Gáspár, 31P relaxation mechanisms in phosphorus metabolites, Proc. 15th Congr. AMPÈRE on Mag. Res. and Rel. Phen., Stuttgart, 194-195 (1990)	1990

PRA/1/1/267	E.R. Andrew, Passive magnetic screening, Mag. Res. Med. 17, 22-26 (1991)	1991
PRA/1/1/268	E.R. Andrew, Magnetic resonance imaging, Int. J. Mod. Phys. B4, 1269-1281 (1991)	1991
PRA/1/1/269	E.R. Andrew, Message from the retiring editor, Mag. Res. Med. 21, 1 (1991)	1991
PRA/1/1/270	E.R. Andrew, The new U.S. National High Magnetic Field Laboratory, Abstracts, BRSG Mtg., Canterbury, England, L19 (1991)	1991
PRA/1/1/271	E.R. Andrew, M.L. Buszko, M.F. Kempka and B. Peplinska, NMR studies of polycrystalline cholesterol, cortisone and lactic acid, Abstracts, BRSG Mtg., Canterbury, England, P12 (1991) Photocopy.	1991
PRA/1/1/272	E.R. Andrew, W.S. Brey and R. Gáspár, Phosphorus-31 magnetic relaxation of phosphocreatine in solution, Chem. Phys. Lett. 184, 17-20 (1991)	1991
PRA/1/1/273	E.R. Andrew, Nuclear magnetic resonance at high magnetic fields, Abstracts, Bull. Am. Phys. Soc. 36. 2753-2754 (1991) Photocopy.	1991
PRA/1/1/274	E.R. Andrew, NMR imaging the future, Abstracts, Soc. Eng. Sci. 28th Ann. Techn. Mtg., Ta9-1 (1991) Photocopy.	1991
PRA/1/1/275	E.R. Andrew, NMR imaging reminiscences, Abstracts, 1st Forum AMPÈRE, Rome, Italy, 9 (1991) Photocopy.	1991
PRA/1/1/276	E.R. Andrew, J. Radomski and S. Sagnowski, Aktywne ekranowanie cewki gradientowej Gz [Active screening of Gz gradient coil], Materiały XXIII Ogólnopolskiego Seminarium Na Temat Magnetycznego Rezonansu Jadrowego [Proc. 23rd Polish Seminar on NMR & its Applications], 100-103	1991

/...

/...	(1991) Photocopy.	
PRA/1/1/277	E.R. Andrew, W.S. Brey and R. Gáspár, 31P relaxation mechanisms in phosphorus metabolites, Abstracts, Department of Radiology University of Florida College of Medicine Research Day, 25 January 1992 Photocopy.	1992
PRA/1/1/278	E.R. Andrew, A message of greeting to the readers, Solid State NMR 1, v (1992) Photocopy.	1992
PRA/1/1/279	E.R. Andrew, Nuclear magnetic resonance, Abstracts, Royal Netherlands Academy of Arts and Sciences, Workshop on Functional Brain Imaging, 8 June 1992, 10-12 (1992) Photocopy.	1992
PRA/1/1/280	E.R. Andrew, NMR imaging and in vivo spectroscopy in high magnetic fields, Proc. Workshop on NMR, 21-29 (1992) Photocopy.	1992
PRA/1/1/281	E.R. Andrew, K. Jurga, J.M. Radomski and E.C. Reynhardt, Proton relaxation NMR study of polycrystalline progesterone, Solid State NMR 1, 121-125 (1992)	1992
PRA/1/1/282	M.L. Buszko and E.R. Andrew, 1H NMR study of lithium D-lactate, Solid State NMR 1, 115-119 (1992)	1992
PRA/1/1/283	E.R. Andrew and M.L. Buszko, Proton relaxation in solid lactic acid and solid lithium lactate, Extended Abstracts, 26th Congr. AMPÈRE, Athens, 455-456 (1992) Photocopy.	1992
PRA/1/1/284	E.R. Andrew and J. Radomski, Proton relaxation in polycrystalline progesterone and testosterone, Extended Abstracts, 26th Congr. AMPÈRE, Athens, 457-8 (1992) Photocopy.	1992

PRA/1/1/285	E.R. Andrew, Magnetic resonance reflections. In: *Magnetic Resonance Microscopy*, ed. B. Blümich and W. Kuhn, VCH Weinheim, 589-593 (1992)	1992
PRA/1/1/286	M.L. Buszko and E.R. Andrew, NMR study of solid lactic acid (2-hydroxypropanoic acid), Mol. Phys. 76, 83-87 (1992)	1992
PRA/1/1/287	E.R. Andrew, The New U.S. National High Magnetic Field Laboratory, J. Mol. Liquids 54, 283-288 (1992)	1992
PRA/1/1/288	E.R. Andrew, Nuclear magnetic resonance and the brain, Brain Topography 5, 129-133 (1992)	1992
PRA/1/1/289	E.R. Andrew and J. Radomski, Magnetic resonance of two hormones: progesterone and testosterone, Abstracts, Department of Radiology University of Florida College of Medicine Research Day, 23 January 1993	1993
PRA/1/1/290	S. Sagnowski and E.R. Andrew, Special purpose gradient coils for MRI and MRS, Abstracts, Department of Radiology University of Florida College of Medicine Research Day, 23 January 1993 Photocopy.	1993
PRA/1/1/291	E.R. Andrew, Sir Joseph Banks and Boston, Int. 250th Anniv. Comm. Conf. Sir Joseph Banks, Royal Society, London, Abstracts (1993) Draft.	1993
PRA/1/1/292	E.R. Andrew and J.M. Radomski, Molecular dynamics in polycrystalline testosterone studied by proton NMR, Solid State NMR 2, 57-60 (1993)	1993
PRA/1/1/293	E.R. Andrew, Resistance in the intermediate state. In: *The International Conference on Low Temperature Physics*, ed. R.J. Donnelly, University of Oregon Press, 101-104 (1993) Photocopy.	1993
PRA/1/1/294	E.R. Andrew and M.F. Kempka, Molecular dynamics in solid cortisone, Abstracts, BRSG Conf., St Andrews (1993) Photocopy.	1993

PRA/1/1/295	E.R. Andrew and J.M. Radomski, Relaxation and dynamics in solid testosterone, Abstracts, BRSG Conf., St Andrews, 14-15 September 1993 Photocopy.	1993
PRA/1/1/296	E.R. Andrew, A long relaxation time: NMR past, present and future, Abstracts, 25th SE Mag. Res. Conf., Gainesville, Florida, 29-30 October 1993 Photocopy.	1993
PRA/1/1/297	E.R. Andrew and M. Kempka, Proton NMR study of molecular motion in solid cortisone, Solid State NMR 2, 261-264 (1993)	1993
PRA/1/1/298	M. Kempka and E.R. Andrew, NMR study of molecular motion in solid cortisone, Abstracts, Department of Radiology University of Florida College of Medicine Research Day, 22 January 1994 Photocopy.	1994
PRA/1/1/299	E. Szcześniak and E.R. Andrew, Low inductance transverse gradient head coil, Abstracts, Department of Radiology University of Florida College of Medicine Research Day, 22 January 1994 Photocopy.	1994
PRA/1/1/300	E.R. Andrew and S. Sagnowski, Nested Maxwell pairs: a simple shielded Z gradient system, Abstracts, Department of Radiology University of Florida College of Medicine Research Day, 22 January 1994 Photocopy.	1994
PRA/1/1/301	E.R. Andrew and R. Gáspár, Mechanisms of 31P relaxation in phosphorus metabolites, Abstracts, 1st Nottingham Symposium on Magnetic Resonance in Medicine, Nottingham, 6-8 April 1994, 35 Photocopy.	1994
PRA/1/1/302	L. Latanowicz, E.R. Andrew and E.C. Reynhardt, Second moment of an NMR spectrum of a solid narrowed by molecular groups in potential wells with nonequivalent sites, J. Mag. Res. A 107, 194-202 (1994)	1994

PRA/1/1/303	E.R. Andrew, Sir Joseph Banks and Boston. In: *Sir Joseph Banks: A Global Perspective*, ed. R.E.R. Banks et. Al., Royal Botanic Gardens, Kew, 197-200 (1994)	1994
PRA/1/1/304	E.R. Andrew, M.F. Kempka and J.M. Radomski, Relaxation and molecular dynamics in two solid steroids: cortisone and testosterone, Extended Abstracts, 27th Congr. AMPÈRE, Kazan, 84-85 (1994) Photocopy.	1994
PRA/1/1/305	E.R. Andrew, Introduction to nuclear magnetic resonance. In: *NMR in Physiology and Biomedicine*, ed. R.J. Gillies, Academic Press, 1-23 (1994) Photocopy.	1994
PRA/1/1/306	E.R. Andrew, After-dinner speech: Nottingham NMR recollections, MAGMA 2, 143-146 (1994)	1994
PRA/1/1/307	E.R. Andrew and R. Gáspár, Mechanisms of 31P relaxation in phosphorus metabolites, MAGMA 2, 421-423 (1994)	1994
PRA/1/1/308	M. Kempka and E.R. Andrew, NMR study of molecular motion in solid estrogen, Department of Radiology University of Florida College of Medicine Research Day, 23, 28 January 1995 Photocopy.	1995
PRA/1/1/309	E. Szcześniak, M.F. Kempka and E.R. Andrew, Magnetic field gradient assembly for microimaging application, Abstracts, Department of Radiology University of Florida College of Medicine Research Day, 24, 28 January 1995 Photocopy.	1995
PRA/1/1/310	E.R. Andrew, Fifty years of magnetic resonance, Abstract, Department of Radiology University of Florida College of Medicine Research Day, 25, 28 January 1995 Photocopy.	1995
PRA/1/1/311	M.L. Buszko. M.F. Kempka, E. Szcześniak, D.C. Wang and E.R. Andrew, Abstracts, 36th ENC Boston, P524, 360 (1995)	1995

/...

/... Photocopy.

PRA/1/1/312	E. Szcześniak, M.F. Kempka, and E.R. Andrew, Magnetic field gradient coils for NMR microimaging, Abstracts, 16th RAMIS-95, Poznan, 25-27 April 1995, P-89 Photocopy.	1995
PRA/1/1/313	E.R. Andrew and M. Kempka, Molecular motions in solid estradiol studied by nuclear magnetic resonance spectroscopy, Solid State NMR 4, 249-253 (1995)	1995
PRA/1/1/314	E.R. Andrew and E. Szcześniak, Low inductance transverse gradient system of restricted length, Mag. Res. Imaging 13, 607-613 (1995)	1995
PRA/1/1/315	E.R. Andrew, B.A. Inglis, M. Kempka, T.H. Mareci and E. Szcześniak, A compact low inductance transverse gradient system for magnetic resonance microscopy: application to the human spinal cord, Abstracts, 3rd Int. Conf. Mag. Res. Microscopy, Würzburg, 27-31 August 1995, 6 Photocopy.	1995
PRA/1/1/316	E.R. Andrew and M. Kempka, The NON-CON transverse gradient coil for NMR microscopy, Abstracts, 3rd Int. Conf. Mag. Res. Microscopy, Würzburg, 27-31 August 1995, 53 Photocopy.	1995
PRA/1/1/317	E.R. Andrew and E. Szcześniak, Krótki, niskoindukcyjny system wytwarzajacy gradienty poprzeczne [Short, low inductance transverse gradient system], Materiały XXVII Ogólnopolskiego Seminarium Na Temat Magnetycznego Rezonansu Jadrowego [Proc. 27th Polish Seminar on NMR & its Applications], Cracow, 393-395 (1995) Photocopy.	1995
PRA/1/1/318	E.R. Andrew and M. Kempka, Magnetyczna relaksacja jadrowa a ruchy molekularne w cortisolu [Nuclear magnetic relaxation and molecular motion of cortisol], Materiały XXVII Ogólnopolskiego Seminarium Na Temat Magnetycznego Rezonansu Jadrowego [Proc. 27th Polish Seminar on NMR & its Applications], Cracow, 155-158 (1995) Photocopy.	1995

PRA/1/1/319	E.R. Andrew and M. Kempka, Dynamika molekularna w ß-estradiolu [Molecular Dynamics of ß-estradiol], Materiały XXVII Ogólnopolskiego Seminarium Na Temat Magnetycznego Rezonansu Jadrowego [Proc. 27th Polish Seminar on NMR & its Applications], Cracow, 159-162 (1995) Photocopy.	1995
PRA/1/1/320	E.R. Andrew and J. Radomski, Magnetycza relaksacja jadrowa w pochodnych cholesterolu [Magnetic relaxation in derivatives of cholesterol], X Ogólnopolska Konferencja Krysztaly Molekularne [Proc. 10th Polish Conf. Molecular Crystals], Poznan, P-1 (1995) Photocopy.	1995
PRA/1/1/321	E.R. Andrew, Nuclear magnetic resonance: past, present and future, Bull. Am. Phys. Soc. 40, 2061 (1995) Photocopy.	1995
PRA/1/1/322	E.R. Andrew, Fifty years of NMR: a personal account, Abstracts, 17th Ann. SE Mag. Res. Conf., Tallahassee, 30 November-2 December 1995, 23 Photocopy.	1995
PRA/1/1/323	E.R. Andrew, A history of NMR from a lifetime's work, Abstracts, 12th ISMAR Conf., Sydney, Australia, L1.4 (1995) Photocopy.	1995
PRA/1/1/324	E.R. Andrew, Fifty years of nuclear magnetic resonance, Department of Radiology University of Florida College of Medicine Research Day, 14, 20 January 1996 Photocopy.	1996
PRA/1/1/325	B. Peplinska, M. Kempka and E.R. Andrew, NMR study of molecular motions in solid adrenaline, Abstracts, Department of Radiology University of Florida College of Medicine Research Day, 15, 20 January 1996 Photocopy.	1996
PRA/1/1/326	E.R. Andrew and M. Kempka, NON-CON gradient coil, Abstracts, Department of Radiology University of Florida	1996 /...

/...	College of Medicine Research Day, 16, 20 January 1996 Photocopy.	
PRA/1/1/327	E.R. Andrew, Spinning the spins: a lifetime of NMR. In: *Encyclopaedia of NMR*, ed. D.M. Grant and R.K. Harris, Wiley, Chichester, 180-187 (1996) Photocopy.	1996
PRA/1/1/328	E.R. Andrew, Magic angle spinning. In: *Encyclopaedia of NMR*, ed. D.M. Grant and R.K. Harris, Wiley: Chichester, 2891-2901 (1996) Photocopy.	1996
PRA/1/1/329	E.R. Andrew, Imaging: a historical overview. In: *Encyclopaedia of NMR*, ed. D.M. Grant and R.K. Harris, Wiley: Chichester, 2462-2472 (1996) Photocopy.	1996
PRA/1/1/330	E.R. Andrew, A history of NMR from a lifetime's work, Bull. Mag. Res. 18, 16-20 (1996) Photocopy.	1996
PRA/1/1/331	E.R. Andrew, B.A. Inglis, M. Kempka, T. Mareci and E. Szcześniak, Magnetic field gradient system for NMR microimaging, MAGMA 4, 85-91 (1996)	1996
PRA/1/1/332	E.R. Andrew and M. Kempka, NON-CON gradient coil, Abstracts, 28th Congr. AMPÈRE, Canterbury, 197-198 (1996) Photocopy.	1996
PRA/1/1/333	E.R. Andrew, B. Peplinska and M. Kempka, Molecular dynamics of solid L-adrenaline by NMR, Proc. 28th Congr. AMPÈRE, Canterbury, 313-314 (1996) Photocopy.	1996
PRA/1/1/334	E.R. Andrew, M. Kempka and A. Szyczewski, Molecular dynamics of solid cortisol studied by NMR, Mol. Phys. 88, 605-610 (1996)	1996

PRA/1/1/335	E.R. Andrew and E. Szcześniak, A historical account of NMR in the solid state, Progr. NMR Spect. 28, 11-36 (1996)	1996
PRA/1/1/336	E.R. Andrew and J.R. Brookeman, NMR spectra of reorienting pairs in solids: applications to conformational changes. In: *Magnetic Resonance in Perspective*, ed. W.S. Brey, Academic Press: San Diego, 1-8 (1996) Photocopy.	1996
PRA/1/1/337	M.L. Buszko, M.F. Kempka, E. Szcześniak, D.C. Wang and E.R. Andrew, Optimization of transverse gradient coils with coaxial return paths by simulated annealing, J. Mag. Res. B112, 207-213 (1996)	1996
PRA/1/1/338	E.R. Andrew, Making the human body transparent: the impact of nuclear magnetic resonance and magnetic resonance imaging; a general historical introduction, History of Twentieth Century Medicine Group Witness Seminar, 2 July 1996, 1-6 (1996) Photocopy of proofs.	1996
PRA/1/1/339	B. Peplinska, M. Kempka and E.R. Andrew, Dynamika molekularna w (-)-adrenalinie [Molecular dynamics in adrenaline], Materiały XXIX Ogólnopolskiego Seminarium Na Temat Magnetycznego Rezonansu Jadrowego [Proc. 29th Polish Seminar on NMR & its Applications], 299-302 (1996) Photocopy.	1996
PRA/1/1/340	M. Kempka and E.R. Andrew, Cewka gradientowa do eksperymentów MRJ [Gradient coils in experimental MRI], Materiały XXIX Ogólnopolskiego Seminarium Na Temat Magnetycznego Rezonansu Jadrowego [Proc. 29th Polish Seminar on NMR & its Applications], 303-306 (1996) Photocopy.	1996
PRA/1/1/341	E.R. Andrew, Radiology Research. Report commissioned by the Chairman of the UF Radiology Department (1996) Draft.	1996
PRA/1/1/342	E.R. Andrew, Transverse gradient coils for NMR imaging, Abstracts, Department of Radiology University of Florida College of Medicine Research Day, 7, 8 February 1997	1997

/...

/... Photocopy.

PRA/1/1/343	E.R. Andrew, M.L. Buszko, M. Kempka and B. Peplinska, Abstracts, Department of Radiology University of Florida College of Medicine Research Day, 12, 8 February 1997 Photocopy.	1997
PRA/1/1/344	E.R. Andrew, M. Kempka and J. Radomski, Proton relaxation study of polycrystalline β-estradiol, Abstracts, AMPÈRE/RAMIS, P-39 (1997)	1997
PRA/1/1/345	B. Peplinska and E.R. Andrew, Molecular motions in all-trans retinoic acid by NMR, Abstracts, AMPÈRE/RAMIS, P-36 (1997) Photocopy.	1997
PRA/1/1/346	E.R. Andrew, In memoriam: Edward Purcell, Mag. Res. Med. 38, 177-178 (1997)	1997
PRA/1/1/347	E.R. Andrew, M. Kempka and E. Szcześniak, Novel transverse gradient coils for MR microscopy, Abstracts, 4th Int. Conf. Mag. Res. Microscopy & Macroscopy, Albuquerque, 52 (1997) Photocopy.	1997
PRA/1/1/348	E.R. Andrew and S. Głowinkowski, Proton spin-lattice relaxation in polycrystalline riboflavin (vitamin B2), Abstracts, 29th SE Mag. Res. Conf., P14 (1997) Photocopy.	1997
PRA/1/1/349	E.R. Andrew, J.R. Fitzsimmons and K.N. Scott, Magnetic resonance imaging, Abstracts, 26th AIPR Workshop, Washington (1997) Photocopy.	1997
PRA/1/1/350	E.R. Andrew, 75 years, Solid State NMR 9, 1-11 (1997)	1997
PRA/1/1/351	E.R. Andrew, B. Peplinska and M. Kempka, Molecular dynamics in solid L-adrenaline by proton NMR, Solid State	1998 /...

/... NMR 10,117-121 (1998)

PRA/1/1/352 S. Głowinkowski and E.R. Andrew, Molecular dynamics in polycrystalline riboflavin (vitamin B2), Extended Abstracts, Joint 29th AMPÈRE-13th ISMAR Conf., Berlin, 636-637 (1998) 1998

Photocopy.

PRA/1/1/353 B. Peplinska and E.R. Andrew, NMR study of solid all-trans retinoic acid, Extended Abstracts, Joint 29th AMPÈRE-13th ISMAR Conf., Berlin, 652-653 (1998) 1998

Photocopy.

PRA/1/1/354 M. Kempka, J. Radomski, E. Szcześniak and E.R. Andrew, Relaxation and molecular dynamics in solid β-estradiol, Extended Abstracts, Joint 29th AMPÈRE-13th ISMAR Conf., Berlin, 695 (1998) 1998

Photocopy.

PRA/1/1/355 E.R. Andrew, M. Kempka, S. Sagnowski and E. Szcześniak, Novel gradient coils for magnetic resonance microscopy. In: *Spatially Resolved Magnetic Resonance*, ed. P. Blümler, B. Blümich, R. E. Botto and E. Fukushima (Wiley-VCH 1998), 683-693 1998

PRA/1/1/356 E.R. Andrew and M. Kempka, Transverse gradient coil with circle current paths, MAGMA 7, 55-60 (1998) 1998

See also PRA/1/2/4.

PRA/1/1/357 E.R. Andrew and B. Peplinska, Molecular motion in solid all-trans retinoic acid (vitamin A acid) by proton NMR, Solid State NMR 13, 39-43 (1998) 1998

PRA/1/1/358 E.R. Andrew, Portrait of a spectroscopist: Professor E. Raymond Andrew, Spectroscopy Europe 10 (5), 28 (1998) 1998

PRA/1/1/359 E.R. Andrew, M. Kempka, J.M. Radomski and E. Szcześniak, Molecular dynamics in solid anhydrous β-estradiol studied by 1H NMR, Solid State NMR 14 (2), 91-94 (1999) 1999

See also PRA/1/2/6.

PRA/1/1/360	E.R. Andrew, S. Głowinkowski, J. Radomski and E. Szcześniak, 1H NMR study of solid pregnenolone, 18th Conf. Mod. Mag. Res., Poznan-Kierkrz, April 11-15, 1999 Photocopy.	1999
PRA/1/1/361	E.R. Andrew, S. Głowinkowski, J. Radomski, A. Szyczewski and E. Szcześniak, Nuclear magnetic relaxation and molecular dynamics in polycrystalline estrogens: estrone and estriol, Mol. Phys. Reports 29, 110-113 (2000) Photocopy.	2000
PRA/1/1/362	E.R. Andrew, S. Głowinkowski, J. Radomski and E. Szcześniak, Molecular dynamics in solid pregnenolone studied by 1H spin-lattice relaxation, Solid State NMR 15 (4), 227-230 (2000) See also PRA/1/2/7.	2000
PRA/1/1/363	E.R. Andrew and S. Głowinkowski, Molecular dynamics in solid riboflavin as studied by 1H NMR, Solid State NMR 18 (1-4), 89-96 (2000) See also PRA/1/2/8.	2000
PRA/1/1/364	E.R. Andrew, S. Głowinkowski, J. Radomski, A. Szyczewski and E. Szcześniak, Nuclear magnetic relaxation in polycrystalline estrogens, Abstracts, 30th Congr. AMPÈRE, Lisbon, P.130 (2000) Photocopy.	2000
PRA/1/1/365	E.R. Andrew, S. Głowinkowski, J. Radomski, A. Szyczewski and E. Szcześniak, Jadrowa relaksacja magnetyczna i dynamika molekularna w polikrystalicznych estrogenach: estronie i estriolu [Nuclear magnetic relaxation in polycrystalline estrogens], Materiały XXXII Ogólnopolskiego Seminarium Na Temat Magnetycznego Rezonansu Jadrowego [Proc. 32th Polish Seminar on NMR & its Applications], Cracow, 2000 Photocopy.	2000
PRA/1/2	**DRAFTS**	**1952-2000**
	13 items in 25 folders.	

PRA/1/2/1	E.R. Andrew, *Nuclear Magnetic Resonance*, Cambridge Monographs of Physics Series: Cambridge University Press (1955) 5 items in 9 folders.	1952-1981
PRA/1/2/1/1	Correspondence 1952-1955 Correspondence *re* Andrew's proposed monograph on NMR, in chronological order. Includes outlines and drafts at various stages of production, with detailed comments by D. Shoenberg and others. Also includes correspondence *re* potentially rival book projects of G.E. Pake in the US and A.K. Saha in India. Andrew delivered the manuscript to the Press in August 1954. 3 folders.	1952-1955
PRA/1/2/1/2	Reviews As found. Includes pre-publication announcements and draft reviews.	1955-1957, n.d.
PRA/1/2/1/3	Correspondence 1956-1966 In chronological order. Chiefly correspondence with the Press *re* royalties, sales, reprints, corrections etc. Includes material *re* translations of the book into Japanese and Russian and *re* attempts to plagiarise it. A pirated Russian translation appeared with the Foreign Literature Publishing House, Moscow, in 1957.	1956-1966
PRA/1/2/1/4	Correspondence 1967-1981 Chiefly correspondence with the Press *re* a second edition, in chronological order. Also includes corrections for reprinting. 2 folders.	1967-1981
PRA/1/2/1/5	Royalty Statements In chronological order. Includes an overview of royalty income 1955-1981. 2 folders.	1955-1981

PRA/1/2/2	E.R. Andrew, B. Peplinska and M. Kempka, Molecular dynamics in solid L-adrenaline by proton NMR, Solid State NMR 10, 117-121 (1998) Correspondence, drafts, diagrams. 2 folders.	1997-1998
PRA/1/2/3	E.R. Andrew, M. Kempka, S. Sagnowski and E. Szcześniak, Novel gradient coils for magnetic resonance microscopy. In: *Spatially Resolved Magnetic Resonance*, ed. P. Blümler, B. Blümich, R. E. Botto and E. Fukushima, Wiley-VCH, 683-693 (1998) Correspondence, referee's comments, drafts. 2 folders.	1997-1998
PRA/1/2/4	E.R. Andrew and M. Kempka, Transverse gradient coil with circle current paths, MAGMA 7, 55-60 (1998) Correspondence, referee's comments, drafts. Also includes photographic material. 3 folders.	1997-1998
PRA/1/2/5	E.R. Andrew and B. Peplinska, Molecular motion in solid all-trans retinoic acid (vitamin A acid) by proton NMR, Solid State NMR 13, 39-43 (1998) Correspondence, annotated drafts, diagrams. 2 folders.	1996-1998
PRA/1/2/6	E.R. Andrew, M. Kempka, J.M. Radomski and E. Szcześniak, Molecular dynamics in solid anhydrous beta-estradiol studied by 1H NMR, Solid State NMR 14 (2), 91-94 (1999) Correspondence and drafts (some annotated). 2 folders.	1998-1999
PRA/1/2/7	E.R. Andrew, S. Głowinkowski, J. Radomski and E. Szcześniak, Molecular dynamics in solid pregnenolone studied by 1H spin-lattice relaxation, Solid State NMR 15 (4), 227-230 (2000) Correspondence and drafts (some annotated). 2 folders.	1999-2000

PRA/1/2/8	E.R. Andrew and S. Głowinkowski, Molecular dynamics in solid riboflavin as studied by 1H NMR, Solid State NMR 18 (1-4), 89-96 (2000) Correspondence, drafts (some annotated). Also includes a 3 1/2" computer disk. 2 folders.	2000
PRA/1/2/9	Miscellaneous shorter publications Correspondence, drafts, proofs of the following: Resonance applied. Review of S.W. Young, *Nuclear Magnetic Resonance Imaging: Basic Principles* (Raven 1984); M.A. Foster, *Magnetic Resonance in Medicine and Biology* (Pergamon 1984), Nature 310, 803 (1984), Foreword. In: *NMR in Medicine: The Instrumentation and Clinical Applications*, ed. S.R. Thomas and R.L. Dixon, Am. Inst. Phys., Med. Phys. Monograph 14 (1986), Fruits of NMR. Review of P.G. Morris, *Nuclear Magnetic Resonance Imaging in Medicine and Biology* (Clarendon 1986), Nature 325, 116 (1987), Magnetic resonance in medicine: historical overview & future, SMRM Newsletter 13, 6-7 (1987).	1984-1987

SERIES 2 **BIOGRAPHICAL** **1939-2001**

PRA/2/1 OBITUARIES AND TRIBUTES

PRA/2/2 AUTOBIOGRAPHICAL

PRA/2/3 BIOGRAPHICAL ACCOUNTS

PRA/2/4 EDUCATION

PRA/2/5 CAREER, HONOURS AND AWARDS

PRA/2/6 COMMEMORATIVE OCCASIONS

PRA/2/7 PHOTOGRAPHS

42 items.

PRA/2/1 **OBITUARIES AND TRIBUTES** **2001**

Copies of obituaries.

Andrew died on 27 May 2001 at his home in Gainesville, Florida, US.

2 items in 1 folder.

PRA/2/1/1 P.A. Bottomley, P. Mansfield and P.S. Allen, 'E. Raymond Andrew. June 27, 1921-May 27, 2001', *Magnetic Resonance in Medicine*, vol. 46 (2001), 417-418 2001

PRA/2/1/2 J. Klinowski, 'In memoriam. E. Raymond Andrew (1921-2001', *Solid State Nuclear Magnetic Resonance*, vol. 20 (2001), 85-86 2001

PRA/2/2 **AUTOBIOGRAPHICAL** **1973-1998**

5 items in 5 folders.

PRA/2/2/1	Curricula Vitae etc In chronological order. 2 items in 2 folders.	c.1979-1999
PRA/2/2/1/1	CVs	c.1979-1980
PRA/2/2/1/2	Miscellaneous Includes a questionnaire and a portion of a Witness Seminar to which Andrew contributed in conjunction with the History of Twentieth Century Medicine Group, Wellcome Institute, London, on 2 July 1996. Also includes a list of publications, c. 1981.	1981-1999
PRA/2/2/2	Reminiscences from Wellingborough School Correspondence. Andrew attended Wellingborough School, Northants, until 1939, and later served as a Governor.	1983-1990
PRA/2/2/3	'Portrait of a spectroscopist' Correspondence *re* Andrew's autobiographical account in the magazine *Spectroscopy Europe*, vol.10 (1998), p. 28. Includes a typescript and proof copy of the article.	1996-1998
PRA/2/2/4	Entries for Biographical Directories In alphabetical order. Correspondence and entries for *Dictionary of International Biography*, *Men of Achievement*, *Who's Who in America*, *Who's Who in Europe*, *Who's Who in Science in Europe*, *Who's Who of British Scientists*, World's *Who's Who of Authors*, *International Authors and Writers Who's Who*, and *Writers Directory*.	1973-1980
PRA/2/3	**BIOGRAPHICAL ACCOUNTS** In chronological order. Includes press clippings, correspondence and an historical account of the physics department of University College of North Wales, where Andrew taught 1954-1964.	**1955-1996**
PRA/2/4	**EDUCATION** Comprises 19 notebooks from Andrew's student days at Cambridge, 1939-1942. All inscribed 'E.R. Andrew Christ's'	**1939-1942**

/...

/...

on the front or on inside cover. Not paginated unless so stated.

19 items.

PRA/2/4/1 **Large Format Notebooks** **1939-1942**

Hard cover, c. 10"x8".

6 items.

PRA/2/4/1/1 'Practical Physics Book 1' 13 October 1939-1 March 1940

Notes and drawings on experiments, starting with a table of contents. With intercalated material, including a typescript handout 'Cavendish Laboratory practical class' (front inside cover) and original readings (at exp. 20, 'Gyroscope').

Blue cover.

PRA/2/4/1/2 'Practical Physics Book 2' 4 March 1940-31 January 1941

Notes and drawings on experiments, starting with a table of contents. With typescript handouts ('Cavendish Laboratory practical class', 'Part I class Easter term 1940') intercalated at front inside cover.

Blue cover.

PRA/2/4/1/3 'Practical Physics Book 3' 3 February-30 April 1941

Continues on from 'Book 2'. With typescript handout ('Cavendish Laboratory, Cambridge, Part I class, Easter term, 1941', with calculations in pencil on back) intercalated at front inside cover. Only front third of notebook used.

Blue cover.

PRA/2/4/1/4 'Practical Crystal Physics' 23 January 1940-24June 1941

Notes and drawings on experiments, starting with 'Kolrausch's total reflectometer'. Only front third of notebooks used. Some calculations in pencil at back inside cover. Also includes original photographic material in sleeve at back inside cover.

Blue cover.

PRA/2/4/1/5	'Part II Physics Practical Book 1' Paginated to 153. Notes and drawings on eight experiments, starting with a table of contents. Table glued in at p. 141. Loose sheet with drawings and measurements at back inside cover. Blue cover.	8 July-25 November 1941
PRA/2/4/1/6	'Part II Physics Practical Book 2' Continues on from 'Book 1'. Paginated to 159 and used to p. 113. With eight film strips in four cellophane sleeves (from polarisation experiments and x-ray analyses, conducted February and March 1942) intercalated at front. Black cover, red spine.	25 November 1941-30 April 1942
PRA/2/4/2	**Smaller Format Notebooks** Hard cover, c. 9"x7". 9 items.	**1939-1942**
PRA/2/4/2/1	'Mineralogy I' Lecture notes (with drawings), starting with a two-year outline of the course. Used nearly cover to cover. With intercalated material inside front cover and at beginning of section 'Crystal optics', 'The polarising microscope'. Blue cover.	1939?
PRA/2/4/2/2	'Mineralogy II' Notes (with drawings) on 'Descriptive mineralogy'. Includes intercalated manuscript notes at 'Quartz SiO2' and 'Carbonates'. Most pages unused. Blue cover.	1939?-1941?
PRA/2/4/2/3	'Mineralogy III' Lecture notes on 'Crystal physics' and 'X-ray crystallography' (with drawings). Paginated and used to 112. Intercalated material (handwritten notes and handouts) throughout. Manuscript calculations at back inside cover. Blue cover.	1941

PRA/2/4/2/4	'Mineralogy IV' Lecture notes on 'Crystal structure' and 'Crystal chemistry' (with drawings). Paginated to 73 and used cover to cover. Intercalated manuscript notes throughout. Additional page ('Interatomic bending forces') glued in at p. 47. Pencil drawings and notes at back inside cover. Blue cover.	1941
PRA/2/4/2/5	'Roberts 1940' Lecture(?) notes on 'Heat & thermodynamics'. Paginated and used to 78. Intercalated manuscript notes throughout. Notes on 'Conduction of heat' at end (reference to this at front). Brown cover (marble effect).	1940
PRA/2/4/2/6	'Electric Oscillations and Waves' 'Stoner' Lecture notes (with drawings). Paginated and used to 253. Intercalated material (manuscript notes and handouts) inside front cover and throughout. Manuscript calculations at back inside cover. Red cover.	From 14 January 1941
PRA/2/4/2/7	'Physics and the Quantum Theory' and 'Mrs Jeffreys' Lecture notes with drawings. Paginated to 95 and used cover to cover. Intercalated manuscript notes at front inside cover ('Laplace's equation'), p. 35 ('Quantum theory', 'Correspondence principle') and inside back cover ('Planck oscillator'). Black cover, red spine.	From 10 April 1941
PRA/2/4/2/8	'Properties of Matter' and 'Prof. Ferguson' Lecture notes with drawings. Paginated to 113 and used nearly cover to cover. Manuscript notes intercalated at inside front cover (e.g. 'Methods of measuring s-tension'). Used from the back to record Sixth Form(?) essay markings. Blue cover.	From 12 May 1939 & from 11 October 1941
PRA/2/4/2/9	'Optics' and 'Prof. Sir W.L. Bragg' Lecture notes with drawings, starting with a course overview ('Wave motion', 'Interference', 'Interferometers' etc). Paginated and used to 195. Manuscript note ('Infra red	From 14 January 1942

/...

/...

spectra') intercalated at p. 89; others glued in at pp. 89, 151. Some manuscript notes at back. Also used from back.

Red cover.

PRA/2/4/3 **Soft Cover Notebooks** **n.d.**

4 items.

PRA/2/4/3/1 'Special Functions and Integrals' and 'Miss Cartwright' n.d.

Lecture notes (no drawings), starting with a course overview ('Fourier Series', 'Fourier integral', 'Solutions of diff. equs. in series', 'Bessel's functions', etc). Used cover to cover. Manuscript note intercalated one third in at 'Recurrence formulae-see Example 14 Paper I 1940 Pt I' and inside back cover.

C. 8"x6 ½". Red cover.

PRA/2/4/3/2 'Statistics' and 'Stoneley' n.d.

Lecture notes with drawings. Many pages unused. Manuscript note intercalated inside front cover.

9"x7". Orange cover, purple spine.

PRA/2/4/3/3 'Vectors and Tensors. Numerical Methods. Differentials Equations' and 'Stoneley' n.d.

Lecture notes. Mostly equations; some drawings. Last third unused. Manuscript notes intercalated inside front cover.

9"x7". Light green cover, dark green spine.

PRA/2/4/3/4 'Mathematics. Analysis' and 'Steen' n.d.

Lecture notes. Mostly equations; some drawings. Used nearly cover to cover.

9"x7". Orange cover (faded), purple spine.

PRA/2/5 **CAREER, HONOURS AND AWARDS** **1963-1998**

12 items in 11 folders.

PRA/2/5/1 — Sc.D., University of Cambridge, 1964 — 1963-1964

Correspondence, list of publications.

PRA/2/5/2 — Honorary D.Sc., University of Turku, Finland, 1980 — 1980

Includes correspondence and a photocopy of press coverage of the ceremony, featuring Andrew (in Finnish).

PRA/2/5/3 — Appointment as Graduate Research Professor, University of Florida, 1983 — 1979-1982

Correspondence. Also includes a copy of the draft advert of the position in *Physics Today*.

Andrew spent the autumn of 1979 on leave at the University of Florida, working with T.A. Scott whom he had known since their Harvard days. Scott died of a brain tumour during Andrew's sabbatical term at UF. One consequence of this was that Andrew was invited to join the staff there as a Graduate Research Professor, taking over Scott's NMR activity (in the Department of Physics) yet also developing a programme of work on NMR imaging in relation to medicine in the Department of Radiology.

PRA/2/5/4 — Election to Fellowship of the Royal Society, March 1984 — 1984

Copy of the announcement, handwritten draft of Andrew's speech at the party in celebration of the news, University of Florida, 23 March 1984.

PRA/2/5/5 — Honorary Doctorate, Adam Mickiewicz University, Posnan, Poland, October 1989 — 1988-1989

Correspondence etc. Andrew's contact with Polish colleagues dated back to a visit from Z. Pajak of the Adam Mickiewicz University to Bangor, where Andrew taught 1954-1964. Andrew first visited Poland in 1964.

3 items in 3 folders.

PRA/2/5/5/1 — Notification etc. — 1988-1989

Correspondence *re* arrangements for Andrew's visit to receive the honorary degree and *re* invitations to other Polish universities on the occasion.

PRA/2/5/5/2 — Visit to Poland on the occasion of the ceremony — 1989

Includes a copy of Andrew's itinerary for the duration of his visit, 1-7 October 1989, draft and typescript of his

/...

/...	acceptance speech, draft of a lecture given at the Polish Academy of Sciences' Institute of Nuclear Physics in Cracow, etc.	
PRA/2/5/5/3	Correspondence arising	1989
PRA/2/5/6	Election to Fellowship of the American Physical Society, November 1989 Correspondence. Also includes a copy of the certificate.	1989-1990
PRA/2/5/7	Honorary Doctorate, Karl Marx University, Leipzig, East Germany, October 1989 Correspondence. Also includes copies of Andrew's acceptance speech and of a physics colloquium on 'Modern developments in NMR spectroscopy'.	1988-1990
PRA/2/5/8	Retirement as Editor-in-Chief of the journal Magnetic Resonance in Medicine, 1991 Copy of Andrew's last editorial.	1991
PRA/2/5/9	Honorary D.Sc., University of Wales, Bangor, 18 April 1998 Chiefly correspondence *re* the award, arrangements for the trip etc. 2 items in 2 folders.	1997-1998
PRA/2/5/9/1	1997	
PRA/2/5/9/2	1998	
PRA/2/6	**COMMEMORATIVE OCCASIONS** 2 items.	**1991-1997**
PRA/2/6/1	70th Birthday Correspondence. Also includes copies of R. Blinc's laudatio of Andrew, given at the First Forum AMPÈRE, Rome, Italy, November 1991, and that by I. Ursu, given at a special	1991-1992

/...

/...

meeting of the British Radio Spectroscopy Group (BRSG) on 'NMR: new applications to materials and medical imaging', Nottingham, in April 1992.

Andrew's 70th birthday was on 27 June 1991.

PRA/2/6/2 — 75th Birthday — 1996-1997

Correspondence *re* the E.R. Andrew 75th Anniversary Symposium, University of Florida in Gainesville, 5 January 1997. Includes a copy of the conference poster, draft of the programme, etc.

Andrew's 75th birthday was on 27 June 1996.

PRA/2/7 — **PHOTOGRAPHS** — **1983-1984**

8 monochrome photographs featuring Andrew (including body scans of him) and apparatus.

One of them shows him with the Technicare Teslacon body scanner. This image, was 'probably was taken at a trade show, either RSNA (Radiological Society of North America) or the SMRM (Society of Magnetic Resonance in Medicine) in the early 1980s. The RSNA meeting probably was in Chicago and the SMRM meeting probably was in New York' (communication from Dr Waldo Hinshaw, 13 October 2008).

Some of these images were used in Andrew's Wellcome Foundation Lecture on 'NMR imaging in medicine', given at the Royal Society, London, 6 November 1984.

SERIES 3 **TELECOMMUNICATIONS RESEARCH ESTABLISHMENT (TRE)** **1942**

This section comprises seven Royal Air Force exercise books all inscribed at top left 'T.R.E. Entrance Course' and at top right 'E.R. Andrew Pale Manor Malvern'.

The Telecommunications Research Establishment (TRE) was established in Worth Matravers, four miles to the west of Swanage, Dorset, in May 1940, as the central research group for RAF applications of radar. In March 1942 TRE moved to Malvern College, Worcestershire.

7 items.

PRA/3/1 'Dr Huxley General RDF' [1942]

Notes on radar equipment and radar systems (e.g. 'Chain Home', 'Ground Control Interception', 'Aircraft to Surface Vessel'). Paginated up to 45 and used to p.37. At back of notebook is list of abbreviations. Manuscript calculations on back cover.

PRA/3/2 'Lines & aerials (1)' [1942]

Paginated up to 95 and used to p.[90]. Used for notes on circuits, 'Applications' (pp 27-59) and 'Aerials' (pp. 63-90). At back of notebook is an account of a 'Transmission Line Expt'. Manuscript calculations on back cover.

PRA/3/3 'Lines & aerials (2)' [1942]

Paginated up to 27 and used to p.[24]. Used for notes on aerials. Used from the back for calculations, circuit diagrams etc.

PRA/3/4 'Circuits. incl. Filters (1)' [1942]

Paginated and used 1-97. Intercalated material at p. 24. Manuscript calculations on back cover.

PRA/3/5 'Circuits. incl. Filters & Noise (2)' [1942]

Paginated and used 1-[49]. Notes on 'Noise', construction of circuits, transmitters etc. Intercalated material at p. [49]

PRA/3/6 '25/7/42 Practical' and 'ADRDE' 1942

Notes on experiments, with list on p.1. Paginated up to 93 and used up to p.[82]. Intercalated material at pp 25, 77. Manuscript calculations on back cover.

ADRDE, the Army's Air Defence Research and Development Establishment, had likewise moved to Malvern in 1942. Eventually it was fused with TRE into the Radar Research Establishment, subsequently renamed the Royal Radar Establishment.

PRA/3/7 '25/7/42 Miscellaneous lectures' 1942

Not paginated. Used from the front for notes on topics including 'Fighter Command', 'A-A Command', 'Devices for Safety of Aircraft', 'Night-Fighting', etc. Used from the back for calculations. Manuscript calculations on back cover.

SERIES 4	**UNIVERSITY OF CAMBRIDGE**	**1941-1948, 1960-1962**
	Material associated with the period when Andrew was a PhD Student, 1945-1949; possibly teaching-related and subsequently reused. 3 items in 4 folders.	
PRA/4/1	'Cavendish Laboratory, Cambridge; Practical Course for Part II Physics' So inscribed. Sets of instructions for practicals. 2 folders.	1941-1942, 1946
PRA/4/1/1	'Part II Physics; E.R. Andrew, Christ's' So inscribed. 37pp. Manuscript annotations, drawings and calculations on title leaf and on the back of pp 13, 14a ['Valve Experiments'], 15, 16 ['The Cathode Ray Oscillograph'], 17, 18 ['The Rayleigh Refractometer'], 26 ['Polarisation Experiments'], 36 ['Frequency of a Tuning Fork'].	1941-1942
PRA/4/1/2	'E.R. Andrew, Mond Laboratory' So inscribed. 52pp. Intercalated material at p.28. Reading list.	1946
PRA/4/2	'Electro Magnetic Course; Mond Lab. Cambridge University; 15 Oct 1945-Aug 1948 Found in a folder so inscribed. Manuscript (in ink) of a lecture course, with pencil annotations (both in Andrew's hand). Paginated to 127 with intercalated sheets and a separate lecture on 'Magnetism', paginated to 25 with two additional sheets. Top sheet bears notes suggesting that Andrew lectured on the material in 1960, 1961 and 1962 (while at Bangor). 2 folders.	1945-1948, 1960-1962

SERIES 5 **UNIVERSITY OF NOTTINGHAM** **1964-1983**

Material documenting Andrew's years at the University of Nottingham, 1964-1983.

PRA/5/1 LECTURE COURSES

PRA/5/2 THE WORK OF THE NOTTINGHAM LABORATORY IN PHOTOGRAPHS AND SLIDES

PRA/5/3 DEPARTMENTAL PAPERS

PRA/5/4 ROLF SJÖBLOM CORRESPONDENCE

PRA/5/5 REZSÖ GÁSPÁR CORRESPONDENCE

PRA/5/6 MENG QING-AN CORRESPONDENCE

PRA/5/7 NOTEBOOK

PRA/5/8 'THIRD REPORT FROM THE EXPENDITURE COMMITTEE, SESSION 1973-74: POSTGRADUATE EDUCATION'

14 items.

PRA/5/1 **LECTURE COURSES** **1965-1983**

Andrew's lecture notes (handwritten). Originally in ring binders. Paginated. Normally with notes at front *re* how far into the lecture script Andrew progressed each year or term that he gave the respective course.

6 items.

PRA/5/1/1 Spectroscopy 1970-1975

Includes duplicated hand-outs (overview of the course, list of textbooks, problem sheets). Pencil annotations in lecture script suggest that these lectures may include material used also in courses Andrew gave 1964-1969.

PRA/5/1/2	Wave mechanics Includes typescript overview of the course, with handwritten annotations *re* the 1972 course.	1972
PRA/5/1/3	Biophysics Includes copies of typescript overview of the course 1977-1981, with handwritten annotations. Also includes copies of hand-outs ('Structural formulae of the twenty amino acids', 'Structure factor and electron density', 'structure of nucleic acids', 'The genetic code table').	1977-1981
PRA/5/1/4	Mechanics Includes copies of typescript overviews of the course. Also includes a copy of the 'Second Year Honours Mid-sessional Examination', January 1983. Further includes an announcement by Andrew that this was his last ever lecture at the University of Nottingham since he is retiring, but that as of 1 March he would be taking up a new appointment at the University of Florida.	1978-1983
PRA/5/1/5	Atomic physics Includes copies of typescript overviews of the course during various terms. Also includes an overview of the 'P1B lecture demonstrations and examples classes 1981-1982', etc.	1980-1982
PRA/5/1/6	First year atomic physics course In original order. First part of the script (pp. 1-[64]) followed by a lecture on 'Heisenberg's uncertainty principle' (pp. 65-[81]). Includes a typescript overview of the course. Appended material includes a 19-page opening lecture, a 133-page script of the course (with notes suggesting that it was given 1965-1967), and another 5-page opening lecture with personal recollections.	1965-1967, 1973, n.d.
PRA/5/2	**THE WORK OF THE NOTTINGHAM LABORATORY IN PHOTOGRAPHS AND SLIDES** Three sheets of slides and one album of photographs entitled 'Nuclear magnetic resonance images by spin mapping'. Photographs mounted on cardboard (front and back), twelve sheets.	**1976-1977, n.d.**

/...

/...

There are overlaps between the slides and the photographs in the album. A photocopy of the album is at PRA/7/3/2, suggesting that the original accompanied a grant application to the Wolfson Foundation.

PRA/5/3 **DEPARTMENTAL PAPERS** **1964-1983, n.d.**

2 items.

PRA/5/3/1 Correspondence, 1964-1983 1964-1983

Correspondence, announcements, notes etc., including Andrew's official announcement of his retirement.

PRA/5/3/2 Miscellaneous 1976-1983, n.d.

Admissions information 1976-1983 (including a draft admissions talk by Andrew), copies of departmental minutes 1979-1983 (incomplete set), and material *re* a one-day meeting on NMR imaging in the Physics Department, 10 April 1976.

PRA/5/4 **ROLF SJÖBLOM CORRESPONDENCE** **1972-1974**

Correspondence chiefly *re* and with the Swedish chemist R. Sjöblom, who spent the academic year 1973-1974 in the Physics Laboratory of the University of Nottingham. At the time Sjöblom was studying for a Swedish doctoral degree.

See also PRA/11/8.

PRA/5/5 **REZSÖ GÁSPÁR CORRESPONDENCE** **1974-1982**

Correspondence chiefly with the Hungarian biophysicist R. Gáspár, who spent the academic year 1974-1975 in the Physics Laboratory of the University of Nottingham, thus starting a collaboration with Andrew that would continue into the 1990s.

Gáspár returned to Nottingham for another year in January 1980, to work on Andrew's SRC-funded project on 'Molecular dynamics in the solid state by proton magnetic resonance'.

Also includes a handwritten fact-sheet on Hungarian culture and history, presumably by Gáspár.

PRA/5/6 **MENG QING-AN CORRESPONDENCE** **1978-1982**

Correspondence chiefly with the Chinese physicist Meng Qing-an, who arrived in the Physics Laboratory of the University of Nottingham in the summer of 1979 and spent close to two years there.

Also includes correspondence with the physicist Guo Quan-zhong (including 1 photographic reproduction).

See also PRA/11/18, PRA/11/21/1.

PRA/5/7 **NOTEBOOK** **1971**

Inscribed on inside cover: 'E. R. Andrew 1971'. Unpaginated. First half used for reference *re* structure and literature on amino acids, in alphabetical sequence starting with Alanine and ending with Valine. Last third used similarly for the nucleic acid bases that form components of DNA and RNA. Related notes intercalated at back, dated12 March 1971 and 12 March 1971 respectively.

PRA/5/8 **'THIRD REPORT FROM THE EXPENDITURE COMMITTEE, SESSION 1973-74: POSTGRADUATE EDUCATION'** **1973-1974?**

This was published by HMSO, 20 December 1973.

Copy of the report with typescript summary and comments on its implications, and a handwritten note by Andrew intercalated.

SERIES 6 **UNIVERSITY OF FLORIDA** **1983-2000**

Material from Andrew's time at the University of Florida (UF) in Gainesville, where he was Graduate Research Professor from 1983 to 1999. This was a joint appointment of the Departments of Physics and Radiology. At UF Andrew pressed on with his research in the area of magnetic resonance tomography and played a role in establishing the US National High Magnetic Field Laboratory in Florida at Tallahassee. He also contributed to the teaching of his Departments when this was not a requirement of his position as Graduate Research Professor, and lectured widely all over Campus and in the wider Florida region.

PRA/6/1 LECTURE COURSES

PRA/6/2 LECTURES WITHIN THE UNIVERSITY

PRA/6/3 LECTURES IN THE WIDER FLORIDA REGION

PRA/6/4 NOTEBOOKS

PRA/6/5 ADMINISTRATIVE CORRESPONDENCE

PRA/6/6 6 TESLA WHOLE BODY MAGNET

64 items.

PRA/6/1 **LECTURE COURSES** **1984-1997**

Handwritten lecture scripts, paginated.

6 items.

PRA/6/1/1 Nuclear Magnetic Resonance, 1984 1984

Originally in ring binder. Includes a typescript cover sheet and reading list, and a handwritten overview. Cover sheet contains annotations *re* how far into the script Andrew progressed in each of the overall 26 lectures.

186pp + 4pp.

PRA/6/1/2	Advanced Polymer Physics, 1985 Two lectures on 'Fundamentals of NMR' and 'Solid state NMR', given as part of the course on advanced polymer physics of Andrew's colleague C. Batich. With a typescript overview of the course. Also includes a handwritten note by Andrew *re* the arrangement with Batich. 35pp + 3pp.	December 1984-February 1985
PRA/6/1/3	Nuclear Magnetic Resonance, 1988 Originally in ring binder. With typescript cover sheet bearing annotations *re* how far into the script Andrew progressed in each of the overall 15 lectures. Andrew gave the course jointly with his colleague T.H. Mareci. 101pp + 1p.	1988
PRA/6/1/4	Radiological Physics, 1988 Four lectures on 'Magnetic resonance imaging', 'Principles of magnetic resonance imaging', 'Pulses and pulse sequences in MRI' and 'Gradient-recalled echoes', given as part of the course on radiological physics of Andrew's colleague J. Brookeman.	1988
PRA/6/1/5	Principles of MRI, 1991 Course given to medical residents in the Radiology Department, Shands Hospital. 129pp.	1991
PRA/6/1/6	Diagnostic Radiological Physics (ENU6657), 1995 Lectures on the NMR component of a course on diagnostic radiological physics taught by a colleagues. With pencil annotations dating from 1990-1996. Includes typescript 'NMR questions for ENU6657 final exam', 1996.	1990-1997
PRA/6/2	**LECTURES WITHIN THE UNIVERSITY** Handwritten lecture scripts, paginated. 37 items in 19 folders.	**1983-1997**

PRA/6/2/1	'NMR imaging', Visit of the Lt. Governor J. Wayne Mixson, 15 June 1983 Correspondence etc. Includes J.W. Mixson's itinerary. Also given on 24 February 1984 at the Florida Day on 'MicrofabritechTM', a collaborative effort of the faculties of the University of Florida's science and engineering departments to 'pursue fundamental investigations in the areas of modern physical and electronic devices that will provide the base for the technology tomorrow'.	1983-1984
PRA/6/2/2	'Application of NMR in medicine', Lecture to 3rd year premedical students, 1983 Delivered on several occasions in 1983-1984 in a number of courses.	1983-1984
PRA/6/2/3	'Introduction to Nuclear Magnetic Resonance (NMR)', Lecture to 3rd year medical physics students, April 1984 Also given on 8 April 1985.	1984-1985
PRA/6/2/4	'The physical basis of NMR imaging', 9th Annual Florida Graduate Student Symposium, 5 May 1984 Includes a copy of the symposium programme (with abstracts) and letter of invitation. First page original script, the rest is photocopy.	1984
PRA/6/2/5	'NMR imaging and analytical studies', Microfabritech Advisory Panel, 30 August 1984 Includes a copy of the programme.	1984
PRA/6/2/6	'NMR basic physics', Lectures to 'UF Radiology residents & others', March 1985 Given also in May and July 1985.	1985
PRA/6/2/7	Untitled, Pink Ladies, 7 October 1985 'Pink Ladies' were volunteers working out of the Shands Hospital, University of Florida.	1985
PRA/6/2/8	'Imaging by NMR', American Nuclear Society Florida Section, Nuclear Engineering Department, January 1986	1986

PRA/6/2/9	'Paramagnetics', MRI morning conference, Department of Radiology, 13 May 1986	1986
PRA/6/2/10	'Relaxation in magnetic resonance', MRI morning conference, Department of Radiology, 20 May 1986 Also given under the title 'Relaxation revisited' and 'Relaxation in MR - a basic talk'. Includes transparencies. 6 transparencies.	1986
PRA/6/2/11	'Developments in NMR imaging', Physics Colloquium, 4 September 1986 Incomplete.	1986
PRA/6/2/12	'Magnetic screening', Radiology Seminar, 7 January 1987	1987
PRA/6/2/13	'Nuclear magnetic resonance (NMR)', ERC [Engineering Research Center] meeting, Reitz Union, 18 May 1987	1987
PRA/6/2/14	'Report on AMPÈRE Novosibirsk', Radiology Seminar, 28 October 1987	1987
PRA/6/2/15	'Magnetic susceptibility', Radiology MRI Seminar, 4 November 1987 Includes transparencies.	1987
PRA/6/2/16	'Microscopic imaging by NMR', Radiology Research Review, 7 November 1987	1987
PRA/6/2/17	'The physics of MRI', Course for Radiological Health Inspectors, 18 November 1987	1987
PRA/6/2/18	'Advisory committee site visit', 3 December 1987 With appended material (photocopies of transparencies from various presentations, not all by Andrew).	1987
PRA/6/2/19	'Nuclear magnetic resonance', Neurosciences Institute, January 1988	1988

PRA/6/2/20	'Nuclear magnetic resonance imaging', Lecture to 3rd year premedical students, 2 February 1988 Given in the course of Andrew's colleague P. Kumar. Also given in a course on nuclear engineering science of Andrew's colleague G. Roessler.	1988
PRA/6/2/21	'NMR in materials science', Department of Materials Science and Engineering Seminar, February 1988	1988
PRA/6/2/22	'The physical basis of contrast agents in MRI', UF Radiology Thursday evening, 21 March 1988	1988
PRA/6/2/23	'Magnets', Radiology Seminar, 7 April 1988	1988
PRA/6/2/24	'Magnetic resonance imaging', Mini-symposium Illustrating Outstanding College Programmes, College of Liberal Arts and Sciences, 1 October 1988 Includes a copy of the programme.	1988
PRA/6/2/25	'Shielded gradients', Radiology [no further information], 26 March 1990 Includes transparencies.	1990
PRA/6/2/26	'Relaxation', Talk to MRI Technologists, 24 July 1990	1990
PRA/6/2/27	'Principles of contrast agents', Talk to MRI Technologists, 20 November 1990	1990
PRA/6/2/28	'Contrast agents Part 2', Talk to MRI Technologists, 27 November 1990	1990
PRA/6/2/29	'Magnetic resonance imaging: the future', Society of Engineering Science, 7 November 1991	1991
PRA/6/2/30	'31P relaxation mechanisms in phosphorus metabolites', Department of Radiology University of Florida College of Medicine Research Day, 25 January 1992	1992

PRA/6/2/31	'Magnetic resonance of two hormones: progesterone & testosterone', Department of Radiology University of Florida College of Medicine Research Day, 23 January 1993 Includes transparencies.	1993
PRA/6/2/32	'Core 3: magnetic field gradients', Advisory Committee Visit, 25 January 1993 Includes transparencies.	1993
PRA/6/2/33	'Nested Maxwell pairs: a simple shielded z-gradient system', Department of Radiology University of Florida College of Medicine Research Day, 22 January 1994 Includes transparencies.	1994
PRA/6/2/34	'Fifty years of magnetic resonance', Department of Radiology University of Florida College of Medicine Research Day, 28 January 1995 Includes transparencies. Also include copy of the programme etc.	1995
PRA/6/2/35	'NON-CON gradient coil', Department of Radiology University of Florida College of Medicine Research Day, 20 January 1996	1996
PRA/6/2/36	'Transverse gradient coils for NMR imaging', Department of Radiology University of Florida College of Medicine Research Day, 8 February 1997 Includes a typescript abstract.	1997
PRA/6/2/37	'Relative imaging times' No further details.	n.d.

PRA/6/3	**LECTURES IN THE WIDER FLORIDA REGION** Handwritten lecture scripts, paginated. 11 items.	**1983-1995**

PRA/6/3/1	'MRI imaging: a challenge to x-rays', Eckerd College, Tampa, October 1983 Eckerd College is a small liberal arts college.	1983
PRA/6/3/2	'Magnets', American College of Radiology (ACR) NMR Symposium, Miami, January 1984 Given also under the title 'Magnets & pulse sequences at MRI in medical practice', Bal Harbour, Florida, March 1985.	1984-1985
PRA/6/3/3	[Magnetic resonance], Tallahassee, 31 October 1984 Presentation 'to CON people at HRS'.	1984
PRA/6/3/4	'MR Physics for the physician', 23rd Annual Seminar, Magnetic Resonance Imaging in Practice, Bal Harbour, 10-14 March 1985 Includes correspondence, copy of the provisional programme, original flier. Andrew gave the opening talk and also a workshop talk on 'MR physics and imaging for radiologic technologists'.	1984-1985
PRA/6/3/5	'NMR imaging', Florida State University, Tallahassee, March 1985	1985
PRA/6/3/6	'The use of nuclear magnetic resonance in medicine', 10th Annual Meeting, American Council of Life Insurance Medical Section, Palm Beach, 8-12 June 1985 Includes correspondence, copy of the programme, list of participants.	1984-1985
PRA/6/3/7	'Human images by nuclear magnetic resonance', Sanibel International Symposium on Quantum Biology and Quantum Pharmacology, Marineland, 12-14 March 1987	1987
PRA/6/3/8	'New developments in medical NMR imaging', 'FCCB88', Sheraton Palm Coast Resort, Palm Coast, April 1988 Includes a note.	1988
PRA/6/3/9	'Imaging by nuclear magnetic resonance', Colloquium, Physics Department, Florida State University, Tallahassee,	1990 /...

/... October 1990

PRA/6/3/10	'NMR research at UF', Steinhatchee Magnetic Resonance Meeting, Steinhatchee, 22 January 1993 Includes correspondence, copies of the tentative programme, transparency, etc.	1993
PRA/6/3/11	'Nuclear magnetic resonance: past, present and future', SE Section of the American Physical Society (SESAPS) Conference, Tallahassee, 9 November 1995	1995
PRA/6/4	**NOTEBOOKS** Spiral-bound, unpaginated. Containing notes on colloquia etc. Both items inscribed 'E.R. Andrew, Department of Physics, Williamson Hall' at top right cover. 2 items.	**1983-2000**
PRA/6/4/1	'Colloquia and special lectures, 1983-1993'	April 1983- March 1993
PRA/6/4/2	'Colloquia and special lectures, 1993-'	April 1993- March 2000
PRA/6/5	**ADMINISTRATIVE CORRESPONDENCE** 5 items.	**1983-2000**
PRA/6/5/1	General Letters and photocopies of letters chiefly *re* Andrew's many achievements, honours, invitations, travels etc. 3 items.	1983-2000
PRA/6/5/1/1	1983-1988	1983-1988
PRA/6/5/1/2	1989-1995 Includes a ten-year summary of Andrew's achievements.	1989-1995

PRA/6/5/1/3	1996-2000 Includes a copy of a proposal on 'Use of high magnetic field gradient for magnetic resonance imaging of solids'.	1996-2000
PRA/6/5/2	Evaluations Annual evaluations of Andrew's performance. 2 items.	1983-1998
PRA/6/5/2/1	Department of Physics	1984-1998
PRA/6/5/2/2	Department of Radiology	1983-1997
PRA/6/6	**6 TESLA WHOLE BODY MAGNET** In original order. 3 items.	**1988-1998**
PRA/6/6/1	Workshop, File 1 Correspondence between researchers at the National High Magnetic Field Laboratory (NHMFL) in Tallahassee and at the University of Florida, *re* a workshop to be held at the NHMFL. Includes a schedule (in Andrew's hand) of all letters and email. Apparently the project was abandoned.	1 June 1995-12 January 1996
PRA/6/6/2	Workshop, File 2 Likewise correspondence *re* the organisation of a workshop on whole-body MRI magnets at 6T or higher.	21 August 1995-18 March 1996
PRA/6/6/3	Miscellaneous Correspondence etc. *re* a variety of proposals, including a proposal from the University of Florida's Imaging Systems Science and Technology Center to the National Science Foundation.	1988-1998

SERIES 7 **RESEARCH** **1948-1993**

PRA/7/1 NOTEBOOKS

PRA/7/2 TECHNICAL REPORTS

PRA/7/3 GRANT APPLICATIONS

PRA/7/4 PATENTS

PRA/7/5 MISCELLANEOUS

40 items.

PRA/7/1 **NOTEBOOKS** **1948-1965, 1990-1993**

7 items.

PRA/7/1/1 Harvard 1948-1949

Inscription on cover reads 'E.R Andrew, Lyman Laboratory of Physics, Harvard University, Cambridge 38, Mass.'.

Lecture notes taken during Andrew's postdoctoral year at the University of Harvard.

PRA/7/1/2 'St Andrews research notebook I' 1950-1951

So inscribed on inside cover. Further inscribed 'E.R. Andrew, Department of Natural Philosophy, University of St Andrews, Fife'. University of St Andrews crest embossed on front cover.

Includes notes on 'Thermocouple data', 'Heat losses (or rather cold losses) in Gas cryostat', etc.

Loose material intercalated at front. Graphs throughout (glued in or taped in).

PRA/7/1/3 'St Andrews research notebook II (& later Bangor)' 1951-1958, 1960

So inscribed on inside cover. Further inscribed 'E.R. Andrew, Department of Natural Philosophy, University of St

/...

/...

Andrews, Fife' and 'Department of Physics, University College of North Wales, Bangor, Caerns'. University of St Andrews crest embossed on front cover.

Includes notes on 'Solubility of Urea', 'Tendency of NaNO3 to become cubic on heating' etc., drawings, notes on scientific literature.

Graphs taped in throughout, one intercalated.

PRA/7/1/4 'Research notebook 3' and '20 September 1958' 1958-1959

So inscribed on inside cover. Further inscribed 'E.R. Andrew, Department of Physics, University College of North Wales, Bangor, Caerns'. Name and crest of University College of North Wales embossed on front cover.

Includes notes on 'Anisotropy', 'Tendency of NaNO3 to become cubic on heating' etc., drawings, calculations.

Graphs taped in throughout. Some notes intercalated.

PRA/7/1/5 'Notebook No. 4' and '3 March 1960' 1960-1963

So inscribed on inside cover. Further inscribed 'E.R. Andrew, Department of Physics, University College of North Wales, Bangor, Caerns'.

Includes notes on 'Aluminum', 'Potential energy of two dipoles', calculations, etc.

Loose material intercalated at front and throughout. Graphs taped in throughout.

PRA/7/1/6 'Notebook No. 5' and 'Started February 1963' 1963-1965

So inscribed on inside cover. Further inscribed 'E.R. Andrew, Department of Physics, University College of North Wales, Bangor, Caerns'. Not used beyond first third.

Includes notes on 'Calculations of theoretical second moment for phosphorus pentachloride', 'Tetraphosphorus pentasulfide', etc.

Loose material intercalated at front and throughout. Calculations taped in.

PRA/7/1/7 'Physics and radiology' 1990-1993

So inscribed on front cover. Further inscribed 'Professor E. Raymond Andrew, Williamson Hall, University of Florida, Gainesville, Florida 32611, USA'. Paginated and used up to p.70. Proceeds through numbered entries.

/...

The first entry [20 February 1990] starts: 'This notebook is opened today to record my new development of a device for active magnetic field gradient screening which may be useful in NMR imaging, NMR spectroscopy and other applications of magnetic resonance in medicine, radiology, biology and microscopy. The notebook will record subsequent work I do in this area of science. The work recorded here has not yet been published in any journal, or book, or poster, not has it been presented in any lecture or talk given publicly. The essential ideas were outlined in an application to NIH submitted 31st January 1990 for grant support to exploit the ideas, as part of an NIH Research Resource. ...'

Also includes a declaration signed by Andrew's colleague T.H. Mareci, stating that he read and understood all the entries in the notebook from pp.1-10.

Graphs glued in throughout. Includes also original drawings.

PRA/7/2 **TECHNICAL REPORTS** **1963-1969**

6 items.

PRA/7/2/1 'Possibilities for high-resolution nuclear magnetic resonance in solids' 1963

Final technical report covering the period 1 December 1962 to 31 July 1963, contract number DA-91-591-EUC-2783.

PRA/7/2/2 'High-resolution nuclear magnetic resonance in solids' 1964-1965

Final technical reports covering the period 1 August 1963 to 31 July 1965, contract number DA-91-591-EUC-3077.

2 reports.

PRA/7/2/3 'Solid-state 31P magnetic resonance shifts and fine structure' 1965

Final technical report co-authored with V.T. Wynn, contract number DA-91-591-EUC-3353.

PRA/7/2/4 'The development of high-speed non-metallic turbines and their application to nuclear magnetic resonance spectroscopy. First annual technical report' November 1966

Co-authored with L.F. Farnell, T.D. Gledhill and I. Roberts, contract number DA-91-591-EUC-3921.

PRA/7/2/5	'The development of high-speed non-metallic turbines and their application to nuclear magnetic resonance spectroscopy. Second annual technical report' Co-authored with L.F. Farnell, M. Firth and T.D. Gledhill, contract number DAJA 37 67 C 0044.	November 1967
PRA/7/2/6	'High-speed non-metallic turbines for nuclear magnetic resonance spectroscopy' Final technical report co-authored with M. Firth and P.J. Randall, contract number DAJA37 67 C 0724.	March 1969
PRA/7/3	**GRANT APPLICATIONS** 6 items.	**1975-1982**
PRA/7/3/1	**Medical Research Council** Material *re* a grant application for research on the application of spin mapping to medical diagnosis and treatment. 2 items.	**1975-1981**
PRA/7/3/1/1	Correspondence Includes letters in support by R.E. Coupland and B.S. Worthington. 2 folders.	1975-1981
PRA/7/3/1/2	Application Drafts and copies of the original application (1975-1978), interim report (1977) and applications for follow-up project on 'Development of NMR spin mapping in medicine' (1978-1981).	1975-1978
PRA/7/3/2	**Wolfson Foundation** Material *re* a grant application for an NMR body scanner. 3 items.	**1976-1977**
PRA/7/3/2/1	Correspondence	1976-1977

PRA/7/3/2/2	Application Copies of the application. Includes visual information on 'Nuclear magnetic resonance images by spin mapping' in support of the application.	1976-1977
PRA/7/3/2/3	Technical notes Notes on the instrumental requirements of the project.	1976-1977
PRA/7/3/3	**Science and Engineering Research Council (SERC)** Copy of a memorandum detailing in which respect the Physics Department at the University of Nottingham lags behind the rest of the world in major instrumentation *re* NMR spectrometry.	**1982**
PRA/7/4	**PATENTS** Andrew's appraisals of patents filed 1956-1981. See also PRA/11/12. Unless stated otherwise, copies of handwritten and typescript appraisals (undated), with copies of patent specifications. It appears as though all these appraisals had been prepared at the same time, sometime between May 1982 and prior to Andrew's departure to the US in spring 1983. 19 items.	**1982, n.d.**
PRA/7/4/1	**UK Patents** 14 items.	**1982, n.d.**
PRA/7/4/1/1	UK Patent 1496886, filed 8 April 1974	1982, n.d.
PRA/7/4/1/2	UK Patent 1508438, filed 5 April 1974	n.d.
PRA/7/4/1/3	UK Patent 1525564, filed 11 September 1974	1982, n.d.
PRA/7/4/1/4	UK Patent 1580787, filed 14 April 1976	n.d.
PRA/7/4/1/5	UK Patent 1585259, filed 8 July 1976	n.d.

PRA/7/4/1/6	UK Patent 1596160, filed 15 December 1976	n.d.
PRA/7/4/1/7	UK Patent 1601816, filed 27 May 1977	n.d.
PRA/7/4/1/8	UK Patent 1601970, filed 31 May 1978	n.d.
PRA/7/4/1/9	UK Patent 2034123, filed 8 October 1979	n.d.
PRA/7/4/1/10	UK Patent 2034123, filed 8 October 1979	n.d.
PRA/7/4/1/11	UK Patent 2048490, filed 29 February 1980	n.d.
PRA/7/4/1/12	UK Patent 2079463, filed 13 March 1981 Further includes typescript describing an invention *re* 'Methods of producing image information from objects'.	n.d.
PRA/7/4/1/13	UK Patent 2079946, filed 13 March 1981 Likewise includes typescript describing an invention *re* 'Methods of producing image information from objects'.	n.d.
PRA/7/4/1/14	UK Patent 2091884, filed 25 January 1981 Includes typescript 'Investigation of samples by NMR techniques'.	n.d.
PRA/7/4/2	**US Patents** 4 items.	n.d.
PRA/7/4/2/1	US Patent 3287629, filed 29 August 1956	n.d.
PRA/7/4/2/2	US Patent 3475680, filed 26 May 1965 Includes Andrew's notes on related literature.	n.d.
PRA/7/4/2/3	US Patent 3873909, filed 21 August 1967	n.d.

PRA/7/4/2/4	US Patent 4034191, filed 19 June 1975	n.d.
PRA/7/4/3	**Miscellaneous Patents** Copies of various patents *re* NMR imaging.	**n.d.**
PRA/7/5	**MISCELLANEOUS** 2 items.	**1974?-1982, n.d.**
PRA/7/5/1	'Notes on the spin maps' Typescript notes on illustrations of an experiment. With 14 photographic reproductions of drawings.	1974?, n.d.
PRA/7/5/2	Notes Various handwritten notes ('Comments on Brunner & Ernst', 'Visit of Barry ?Mason?, Oxford Instruments', 'Planar spin mapping', 'Discussion with Peter Allen ...').	1978-1982

SERIES 8 **SOCIETIES AND ORGANISATIONS** **1958-2000**

PRA/8/1 BRITISH RADIOFREQUENCY SPECTROSCOPY GROUP

PRA/8/2 EMI

PRA/8/3 GROUPEMENT AMPÈRE

PRA/8/4 INTERNATIONAL SOCIETY OF MAGNETIC RESONANCE

PRA/8/5 MEDICAL RESEARCH COUNCIL

61 items.

PRA/8/1 **BRITISH RADIOFREQUENCY SPECTROSCOPY GROUP (BRSG)** **1972-1991**

The BRSG was founded in 1956 by a small group of scientists who shared an interest in the physics of magnetic resonance, a then rapidly developing field. They also shared the belief that small meetings at which graduate students could talk and meet others were important for future progress. While British in name, British-based and with a British committee, these meetings (usually twice a year) were international in character. The BRSG became a Group of the Institute of Physics in 2000, with the new name 'BRSG: The Magnetic Resonance Group'.

Andrew was the BRSG's founder chairman (1956-1959) and served a second period as chairman in 1981-83. He also oversaw the accounts of the Group from its beginnings.

6 items.

PRA/8/1/1 Committee papers, 1972-1980 1972-1980

Includes minutes, circulars, meeting programmes, correspondence, etc.

In spring 1975 the BRSG met abroad (in Paris) for the first time.

PRA/8/1/2	Committee papers, 1981-1983 Includes drafts of addresses Andrew gave in his capacity as chairman of the Group, annotated drafts and copies of minutes, circulars, meeting programmes, correspondence etc. Also includes a handwritten draft of Andrew's talk on 'NMR of solid biopolymers', given at the autumn 1983 meeting of the BRSG in Dublin, Ireland.	1981-1983, 1991
PRA/8/1/3	Jubilee Meeting, Nottingham, 3-4 September 1981 Correspondence, draft of Andrew's opening address, copy of notice, list of participants, overview of meeting of the Group in its first 25 years, photocopy of account of the meeting as published in 'ESN-European Spectroscopy News', etc.	1980-1982
PRA/8/1/4	Accounts, 1973-1980 Bank statements, correspondence *re* payments, arrangements for public liability insurance, etc.	1975
PRA/8/1/5	Accounts, 1981-1983 Correspondence *re* payments, arrangements for public liability insurance, etc.	1981-1983
PRA/8/1/6	Mailing list, updated to December 1980	December 1980
PRA/8/2	**EMI** From 1977, Andrew acted as a consultant to EMI, on the commercial production of NMR equipment. 3 items.	**1972-1982**
PRA/8/2/1	Correspondence, 1976-1978 Includes a copy of the original consultancy agreement. Also includes a monochrome photograph juxtaposing an NMR head scan (1978) with an early CT brain scan (1972).	1972-1978
PRA/8/2/2	Correspondence, 1979-1982 Includes notes on discussions.	1979-1982

PRA/8/2/3	Additional material	1973-1974
PRA/8/3	**GROUPEMENT AMPÈRE**	**1958-2000**

Originally in two bundles, 1958-1982 and 1984-2000. Correspondence, notes and papers. Some of the correspondence is in French.

AMPÈRE stands for 'Atomes et Molécules Par Études Radio-Électriques'. Groupement AMPÈRE (sometimes also referred to as Groupement AMPÈRE, Ampère or indeed AMPÈRE) is a European association of scientists active in the fields of magnetic resonance, optics, dielectrics, magnetic resonance imaging, as well as in the development of the related methodologies and technologies. The Groupement was established in 1952 in France with the purpose of informing and coordinating different European laboratories and, at the same time, helping scientists in difficult economic or political conditions. It developed particularly close relations with Poland in the 1990s. Andrew was a founder member and acted as president 1974-1980.

13 items.

PRA/8/3/1	Correspondence and Papers, 1958-1976	1958-1976

Includes a copy of the statutes and material *re* the 19th AMPÈRE Congress (1976), including Andrew's notes on the event. He was president at the time.

PRA/8/3/2	Correspondence and Papers, March-October 1977	1977

Includes Andrew's handwritten notes on meetings and telephone conversations between members of the AMPÈRE Bureau (the Groupement's executive), and correspondence *re* the treatment of Russian colleagues by the organisers of the Tallinn congress (August 1978).

PRA/8/3/3	Correspondence and Papers, November-December 1977	1977

Includes Andrew's handwritten notes on meetings of the AMPÈRE Bureau.

PRA/8/3/4	Correspondence and Papers, February-July 1978	1978
PRA/8/3/5	Correspondence and Papers, August-December 1978	1978

Includes Andrew's notes on the Tallinn congress (August

/...

/... 1978).

PRA/8/3/6 Correspondence and Papers, 1979 1979

Includes notes taken during the 4th Specialised Colloque AMPÈRE on Dynamical Processes in Molecular Systems studied by rf-Spectroscopy, Leipzig, East Germany, September 1979.

PRA/8/3/7 Correspondence and Papers, 1980-1982 1980-1982

Chiefly correspondence *re* and notes on meetings of the AMPÈRE Bureau. One topic was the appointment of a successor for Andrew as chairman.

PRA/8/3/8 Correspondence and Papers, 1984-1988 1984-1988

Includes material *re* the 9th AMPÈRE summer school in Novosibirsk, USSR (1987), where Andrew in the absence of the President and the Vice-Presidents provided the official representation of the AMPÈRE executive. Also includes correspondence *re* the 24th Congress AMPÈRE in Poznan, Poland (1988).

PRA/8/3/9 Correspondence and Papers, 1989-1992 1989-1992

Includes Andrew's notes form a round-table discussion at the 26th Congress AMPÈRE in Athens, Greece (1992).

PRA/8/3/10 Correspondence and Papers, 1993 1993

Includes material *re* the 2nd International Conference on Magnetic Resonance Microscopy ('Heidelberg Conference'). Also includes notes and correspondence *re* the creation of a new division (Division of Spatially Resolved Magnetic Resonance) to organise the International Conference on Magnetic Resonance Microscopy (ICMRM).

Andrew was asked to consult on the by-laws for the division.

PRA/8/3/11 Correspondence and Papers, 1994-1995 1994-1995

Continues the discussion *re* the bylaws of the proposed Division of Spatially Resolved Magnetic Resonance, of whose executive committee Andrew became a member. Also includes material *re* the 27th Congress AMPÈRE in Kazan, Russia (1994).

PRA/8/3/12	Correspondence and Papers, 1996-1998 Includes material *re* the 28th Congress AMPÈRE in Canterbury, Kent (1996).	1996-1998
PRA/8/3/13	Correspondence and Papers, 1999-2000 Includes material *re* the 30th Congress AMPÈRE in Lisbon, Portugal (2000). Andrew was invited to chair the opening session.	1999-2000
PRA/8/4	**INTERNATIONAL SOCIETY OF MAGNETIC RESONANCE (ISMAR)** The International Society of Magnetic Resonance (ISMAR) was set up in 1971 and legally registered in Israel a year later. It was incorporated in Illinois in 1982. ISMAR's main public function was piloting the organisation of international meetings on magnetic resonance and its applications. Similar to the Groupement AMPÈRE it took into consideration the economic conditions of its members in eastern and developing countries, waving membership dues and other fees. Andrew was a founding member. He served as President of the organisation, 1983-1986, and was a member of Council for many years. 37 items.	**1971-1998**
PRA/8/4/1	Correspondence and Papers, 1971 Includes a copy of the original Constitution and Andrew's comments on it.	1971
PRA/8/4/2	Correspondence and Papers, 1972 Includes correspondence to coordinate ISMAR and AMPÈRE activities.	1972
PRA/8/4/3	Correspondence and Papers, 1973 Includes a copy of the official translation of the Society's Constitution. Also includes correspondence *re* the publication of the proceedings of the Fifth International Symposium on Magnetic Resonance, to be held in Bombay, India, in January 1974	1973

PRA/8/4/4	Correspondence and Papers, 1974 Includes a copy of the proposal for the Sixth International Symposium on Magnetic Resonance to be held in Canada in 1977.	1974
PRA/8/4/5	Correspondence and Papers, 1975-1977 Includes a copy of draft revisions to the Society's Constitution and Andrew's comments. Also includes his notes from the Council meeting in Banff, Canada, in May 1977.	1975-1977
PRA/8/4/6	Correspondence and Papers, 1978-1979 Includes correspondence *re* the launch of a quarterly publication to fill 'a pronounced need for communication among [ISMAR] members'. The first number of the Bulletin of Magnetic Resonance appeared in winter 1979.	1978-1979
PRA/8/4/7	Correspondence and Papers, 1980-1981 Includes a copy of the revised Constitution. Also includes Andrew's handwritten notes from the ISMAR Council meeting during the Seventh International Symposium of Magnetic Resonance in Delft, Netherlands, in August 1980. Further includes correspondence *re* difficulties with the Bulletin.	1980-1981
PRA/8/4/8	Correspondence and Papers, January-September 1982 Includes correspondence *re* a proposal (spearheaded by O. Jardetzky of Stanford) to establish a division of Magnetic Resonance in Biology and Medicine, and to reorganise ISMAR 'into a truly scientific society, attractive to those in the field, and, above suspicion'.	January-September 1982
PRA/8/4/9	Correspondence and Papers, October 1982 Continues the discussion over changes in ISMAR's administration.	October 1982
PRA/8/4/10	Correspondence and Papers, November 1982 Includes Andrew's comments on the proposed revision of the ISMAR Constitution. Also includes correspondence *re* the Bulletin (whose editorial board Andrew was invited to join), and *re* the question of whether a division of Magnetic Resonance in Biology and Medicine should be set up within ISMAR or indeed as a separate organisation.	November 1982

PRA/8/4/11	Correspondence and Papers, December 1982-March 1983 Continues discussion over the proposed division. Includes draft letters.	December 1982-March 1983
PRA/8/4/12	Correspondence and Papers, April-June 1983 Includes Andrew's handwritten report on a meeting in the office of F. Bloch at Stanford to discuss future arrangements for ISMAR.	April-June 1983
PRA/8/4/13	Correspondence and Papers, July-August 1983 Continues attempts to produce a revised Constitution. Includes a draft with Andrew's comments in pencil. Also includes extensive notes (in Andrew's hand) on telephone conversations, the history of ISMAR, Council's comments on the draft of the Constitution etc. Further includes copies of the announcement and programme of the Eighth meeting of ISMAR in Chicago, US, 22-26 August 1983.	July-August 1983
PRA/8/4/14	Correspondence and Papers, September 1983-January 1984 Includes copies of the amended Constitution (handwritten and typescript). Also includes correspondence *re* the death of F. Bloch, who shared the 1952 Nobel Prize in physics with Andrew's mentor E. M. Purcell.	September 1983-January 1984
PRA/8/4/15	Correspondence and Papers, February-March 1984 Chiefly *re* administrative matters.	July 1983-March 1984
PRA/8/4/16	Correspondence and Papers, April-July 1984 Continues the discussion *re* the proposed division of Biology and Medicine. Also includes correspondence *re* ISMAR's finances, its reorganisation, a proposed experimental summer school in Santa Barbara, California, US, etc. Further includes a proposal for the 10th Conference on Radio and Microwave Spectroscopy (RAMIS), Poznan, Poland, in April 1985.	April-July 1984
PRA/8/4/17	Correspondence and Papers, August 1984-January 1985 Continues the discussion *re* a proposed division of Biology and Medicine within ISMAR. Also includes correspondence *re* the finances of the Society.	August 1984-January 1985

PRA/8/4/18	Correspondence and Papers, February-March 1985 Continues the discussion *re* a proposed division of Biology and Medicine within ISMAR. Also includes correspondence *re* suitable dates for the 1986 meting of the Society in Rio de Janeiro, Brazil. Further includes typescript of Andrew's 'Message from the President of ISMAR', March 1985.	February-March 1985
PRA/8/4/19	Correspondence and Papers, April-October 1985 Continues the discussion *re* a proposed division of Biology and Medicine within ISMAR, which was finally put to vote by Council. The proposal was approved.	April-October 1985
PRA/8/4/20	Correspondence and Papers, November-December 1985 Chiefly *re* nominations for ISMAR Council.	November-December 1985
PRA/8/4/21	Correspondence and Papers, January 1986 Includes correspondence *re* the Society's accounts and *re* the organisation of the 1989 ISMAR meeting near Grenoble, France. Also includes correspondence *re* administrative procedures.	January 1986
PRA/8/4/22	Correspondence and Papers, February 1986 As before.	February 1986
PRA/8/4/23	Correspondence and Papers, March 1986 Includes correspondence *re* the upcoming ISMAR meetings in Rio de Janeiro (1986) and Grenoble (1989), financial issues, the first meeting of the Society's new Division of Biology and Medicine, etc.	March 1986
PRA/8/4/24	Correspondence and Papers, April-May 1986 Nominations for the next President of ISMAR.	April-May 1986
PRA/8/4/25	Correspondence and Papers, June 1986 Includes correspondence *re* the election of C. P. Slichter to succeed Andrew as President. Also includes a handwritten draft of Andrew's opening address at the ISMAR meeting in Rio de Janeiro.	June 1986

PRA/8/4/26	Correspondence and Papers, July 1986 Includes Andrew's notes from the first meeting of the Society's new Division of Biology and Medicine at the ISMAR meeting in Rio de Janeiro, 29 June-5 July.	July 1986
PRA/8/4/27	Correspondence and Papers, August-October 1986 Includes correspondence *re* the election of a Chairman for the Society's new Division and *re* China as a potential location for the 1992 ISMAR meeting.	August-October 1986
PRA/8/4/28	Correspondence and Papers, November 1986 Includes correspondence *re* proposed changes with the appointment of R.K. Harris as ISMAR Secretary-General.	November 1986
PRA/8/4/29	Correspondence and Papers, December 1986 Includes a handwritten copy of Andrew's last letter to ISMAR Council in his capacity as President and of a letter to his successor in office, C.P. Slichter, *re* whether Slichter's candidacy was constitutional in view of the fact that both he and Andrew resided in the US (the constitution stipulated that successive presidents should come from different countries).	December 1986
PRA/8/4/30	Correspondence and Papers, 1987 Includes correspondence *re* the report of the ISMAR Elections Committee. Also includes correspondence *re* financial disputes with the outgoing Secretary-General.	1987
PRA/8/4/31	Correspondence and Papers, 1988 Includes correspondence *re* the proposed cancellation of a special symposium to honour the late Y. Ovchinnikov at the upcoming ISMAR meeting in Morzine near Grenoble, 1989.	1988
PRA/8/4/32	Correspondence and Papers, January-March 1989 Includes correspondence *re* the scientific programme of the upcoming ISMAR meeting in Morzine near Grenoble.	January-March 1989
PRA/8/4/33	Correspondence and Papers, April-July 1989 Chiefly *re* nominations for ISMAR Council.	April-July 1989

PRA/8/4/34	Correspondence and Papers, August-November 1989 Chiefly *re* nominations for ISMAR Council.	August-November 1989
PRA/8/4/35	Correspondence and Papers, 1990-1998	1990-1998
PRA/8/4/36	Division of Biology and Medicine Documents the creation of the Society's Division of Biology and Medicine. Mostly duplicates. Includes undated copies of the ISMAR Constitution.	1982-1989
PRA/8/4/37	'Rio de Janeiro meeting, 1986' Documents the planning of the 1986 ISMAR conference. Mostly duplicates.	1983-1986
PRA/8/5	**MEDICAL RESEARCH COUNCIL** Correspondence and Committee papers *re* 'an ad hoc meeting to discuss NMR imaging in clinical problems' on 17 December 1976. 2 items.	**1976-1979**
PRA/8/5/1	Correspondence and papers *re* an ad hoc meeting on 17 December 1976 Also includes Andrew's note on telephone conversations.	June-December 1976
PRA/8/5/2	Minutes and correspondence arising Also includes undated material and an issue of 'MRC News' (February 1979) featuring an article on 'Nuclear magnetic resonance'.	1977-1979

SERIES 9 **LECTURES** **1974-1997, n.d.**

PRA/9/1 'LECTURES GIVEN WHILE AT NOTTINGHAM'

PRA/9/2 'INVITED TALKS 1981-1988'

PRA/9/3 'NMR IMAGING IN MEDICINE', WELLCOME FOUNDATION LECTURE, ROYAL SOCEITY, LONDON, 6 NOVEMBER 1984

PRA/9/4 'INVITED LECTURES 1985-1989'

PRA/9/5 'MAGNETIC RESONANCE IMAGING: SEEING SAFELY INSIDE THE HUMAN BODY', ROYAL INSTITUTION LECTURE, ROYAL INSTITUTION OF GREAT BRITAIN, LONDON, 24 OCTOBER 1986

PRA/9/6 'INVITED LECTURES 1989-1997'

107 items in 46 folders.

PRA/9/1 **'LECTURES GIVEN WHILE AT NOTTINGHAM'** **1974-1982**

Contents of a folder so inscribed. Handwritten drafts, in chronological order.

17 items in 4 folders.

PRA/9/1/1 'BRSG', University of East Anglia, April 1974 1974

PRA/9/1/2 'Proton magnetic relaxation in solid amino acids', Dallas, Texas, US, 18 April 1975 1975

PRA/9/1/3 'An NMR study of molecular dynamics in solids', Florida State University, Tallahassee, Florida, US, November 1979 1979

PRA/9/1/4 'Imaging by nuclear magnetic resonance', Students' Physics Society, Johannesburg, South Africa, May 1980 1980

PRA/9/1/5	'Double Resonance', Hammersmith Hospital, London, 18 February 1981	1981
PRA/9/1/6	'Developments in nuclear magnetic resonance', Cardiff, 24 April 1981	1981
PRA/9/1/7	'Introduction to protein imaging by nuclear magnetic resonance', Nuclear Engineering [Science, University of Florida,] Gainesville, Florida, US, September 1981	1981
PRA/9/1/8	'Recent progress in NMR imaging', Department of Radiology, [University of Florida,] Gainesville, Florida, US, September 1981	1981
PRA/9/1/9	'Applications of nuclear magnetic resonance', Bangkok, Thailand, December 1981	1981
PRA/9/1/10	'NMR imaging', 6th AMPÈRE International Summer School, Seggau, Styria, Austria, 1981	1981
PRA/9/1/11	'NMR imaging', CIBA Foundation, London, October 1981	1981
PRA/9/1/12	'What are lipids?', GEC Wembley, 5 March 1982	1982
PRA/9/1/13	'NMR in medicine: methods of NMR imaging', ?Asclanov?, 1982	1982
PRA/9/1/14	'MRI imaging', Queen Elizabeth College London, March 1982	1982
PRA/9/1/15	'MRI imaging', Liège, Belgium, May 1982	1982
PRA/9/1/16	'Principles of NMR', Liège, Belgium, June 1982	1982
PRA/9/1/17	'Principles of NMR imaging', 2nd lecture, Liège, Belgium, June 1982	1982

PRA/9/2	**'INVITED TALKS 1981-1988'**	**1981-1988**
	Contents of 2 files so inscribed. Manuscript drafts, in chronological order. 41 items in 13 folders.	
PRA/9/2/1	'[The application of nuclear magnetic resonance in medicine]', 15th International Congress of Radiology, Brussels, Belgium, June/July 1981 Includes a copy of the abstract.	1981
PRA/9/2/2	'Principles of spin imaging', 7th AMPÈRE International Summer School, Portoroz, Yugoslavia, June 1982	1982
PRA/9/2/3	'Principles of NMR imaging', Satellite Symposium on the Clinical Potential of NMR, Stanford, California, US, 3 September 1982 Includes a copy of the symposium program.	1982
PRA/9/2/4	'Developments in NMR imaging', 6th European Experimental NMR Conference (EENC), Super Nendaz, Switzerland, September 1982	1982
PRA/9/2/5	'History of NMR (& basic principles)', American College of Radiology (ACR) Course, Chicago 1983 Also given in Miami in January 1984.	1983
PRA/9/2/6	'Whole-body NMR imaging', University of Washington Symposium on Biochemical and Biological NMR, Seattle, US, 25-26 March 1983 Includes additional notes.	1983
PRA/9/2/7	'Farewell dinner, Nottingham', Nottingham, 26 February 1983 Includes a copy of the menu and correspondence.	1983
PRA/9/2/8	'NMR imaging', Stanford University, California, US, 11 May 1983	1983

PRA/9/2/9	'NMR of solid biopolymers', Dallas, Texas, US, September 1983	1983
PRA/9/2/10	'A review of spin imaging: recent developments', 6th Specialised International Colloque AMPÈRE, Crete, Greece, September 1983 Includes a sheet entitled 'Recent advances in NMR imaging, SE Mag. Res. Conference Johnson City Tennessee Oct 1983'.	1983
PRA/9/2/11	'NMR imaging', 'Texas A&M Physics Department', US, October 1983 Also presented at the Physics Department of Florida State University, Tampa, Florida, US, in February 1984.	1983
PRA/9/2/12	'Historical perspective & introduction to NMR', 2nd Annual Meeting of the Society for Magnetic Resonance Imaging, Orlando, Florida, US, 27 February 1984	1984
PRA/9/2/13	'NMR imaging: a new method of seeing inside the human body', Eleventh John Albert Southern Lectures, Department of Chemistry, Furman University, South Carolina, US, 10 April 1984 Includes a pamphlet advertising the lecture.	1984
PRA/9/2/14	'NMR imaging: seeing inside the human body', Frontiers of Science Lecture Series, University of Florida, Gainesville, Florida, US, April 1984 Also presented at 'Furman University, April 1984' and in Madrid [no further details given].	1984
PRA/9/2/15	'Introduction to NMR spectroscopy', 3rd Annual Meeting of the International Society for Magnetic Resonance in Medicine, New York, US, August 1984	1984
PRA/9/2/16	'NMR imaging', Physical Chemistry Department, University of Cambridge, June 1984 Also presented at 'Duke University Oct 1984'.	1984
PRA/9/2/17	'Advances in NMR imaging', 36th South East Regional Meeting of the American Chemical Society, Raleigh, North	1984 /...

/...	Carolina, US, October 1984 Also presented as 'MAIC Lecture Nov 1984' and at 'UF Reitz Union' [no further details given].	
PRA/9/2/18	'History of NMR imaging in medicine', Lexington, Kentucky, US, 18 April 1985	1985
PRA/9/2/19	'Physics and principles of NMR imaging', Institute of Electrical and Electronics Engineers (IEEE) Symposium on NMR Imaging, San Francisco, California, US, 21 October 1985	1985
PRA/9/2/20	'Recent advances in NMR imaging', Rome, Italy, 27 November 1985 Also presented at 'Alcon, Fort Worth [Texas] 13 March 1986'.	1985
PRA/9/2/21	'Introduction to high resolution NMR in solids', Meeting of the British Radiofrequency Spectroscopy Group (BRSG), Oxford, April 1986	1986
PRA/9/2/22	After Dinner Speech, Experimental Nuclear Magnetic Resonance Spectroscopy Conference (ENC), Baltimore, April 1986	1986
PRA/9/2/23	'Some problems in MRI', Beth Israel Hospital, Boston, Massachusetts, US, May 1986	1986
PRA/9/2/24	'Developments in NMR imaging', Conference of the International Society of Magnetic Resonance (ISMAR), Rio de Janeiro, Brazil, June-July 1986	1986
PRA/9/2/25	'NMR imaging', Brazilian Federation of Biological Societies, São Paulo, Brazil, 6 July 1986 Also presented at the 'International Symposium on applications of magnetic resonance in biology & medicine, Univ. of Sao Paolo, 7 July 1986'.	1986
PRA/9/2/26	'Developments in NMR imaging', 13th AMPÈRE International Congress on Magnetic Resonance, Rome, Italy, September 1986	1986

PRA/9/2/27	'Nuclear magnetic resonance imaging for medical diagnosis', William Moore Memorial Lecture, Department of Physics, University of Nottingham, 29 October 1986 Announcement and note in Andrew's hand. Draft of lecture missing.	1986
PRA/9/2/28	'Imaging by nuclear magnetic resonance', BP Research Centre, 31 October 1986 An annotation states 'Used pages 2 & 3 of UF Colloquium & pages 6-15 of Bill Moore Lecture'.	1986
PRA/9/2/29	'Human images by nuclear magnetic resonance', Sanibel International Symposium on Quantum Biology and Quantum Pharmacology, Whitney Laboratory and Marineland, Florida, US, 12-14 March 1987 Conference announcement, abstract, etc. Draft of lecture missing (see PRA/6/3/7).	1987
PRA/9/2/30	'Imaging by nuclear magnetic resonance', Colloquium, Chemistry Department, University of Virginia, Charlottesville, Virginia, US, April 1987	1987
PRA/9/2/31	'Magnetic resonance imaging', President's Lecture, Conference of the American Thoracic Society, New Orleans, Louisiana, US, May 1987 With a note referring to slides. See also PRA/12/1/4.	1987
PRA/9/2/32	'An introduction to NMR spectroscopy', NATO Advance Study Institute, Pisa, Italy, June 1987 Also marked '1st lecture'.	1987
PRA/9/2/33	Opening Lecture, Society of Magnetic Resonance in Medicine (SMRM) Teaching Course, New York, US, 15 August 1987 Presented also at the 'Introductory Seminar on MRI, Coll. Medicine UF'.	1987
PRA/9/2/34	Welcome, 9th AMPÈRE International Summer School, Novosibirsk, USSR, September 1987 As immediate Past President of the Groupement AMPÈRE, Andrew stood in for the President who was unable to attend.	1987

PRA/9/2/35	'Principles and practice of NMR tomography in medicine', 9th AMPÈRE International Summer School, Novosibirsk, USSR, September 1987	1987
PRA/9/2/36	Some applications of NMR imaging in the solid state', 9th AMPÈRE International Summer School, Novosibirsk, USSR, September 1987	1987
PRA/9/2/37	'NMR in biomedicine', National Institutes of Health (NIH) Dedication of the In-vivo NMR Research Center, Bethesda, Maryland, US, 1987 The In-vivo NMR Research Center began operations in October 1987.	1987
PRA/9/2/38	'Topical questions in magnetic resonance imaging', 24th Congress AMPÈRE, Poznan, Poland, August-September 1988	1988
PRA/9/2/39	'Magnetic resonance imaging', Mini-symposium Illustrating Outstanding College Programmes, College of Liberal Arts and Sciences, University of Florida, Gainesville, Florida, US, 1 October 1988 Draft missing.	1988
PRA/9/2/40	'Advances in nuclear magnetic resonance imaging in medicine', 5th National Meeting on Magnetic Resonance, Fuzhou, China, November 1988 Typescript.	1988
PRA/9/2/41	'Nuclear relaxation and dynamics in biomolecular solids', workshop lecture, Fuzhou, China, November 1988 Includes a colour transparency on 'dynamical motions in proteins'.	1988
PRA/9/3	**'NMR IMAGING IN MEDICINE', WELLCOME FOUNDATION LECTURE, ROYAL SOCIETY, LONDON, 6 NOVEMBER 1984** The Wellcome Foundation Prize for 1984 was awarded jointly to E.R. Andrew, J.M.S. Hutchison, J.R. Mallard and P. Mansfield in recognition of their development of NMR imaging as a diagnostic tool in medicine. Andrew and	**1984-1985, n.d.** /...

/...

Mallard were invited to deliver the lecture associated with the award on behalf of all four prize winners. Both lectures were published in the *Proceedings of the Royal Society*.

4 items in 5 folders.

PRA/9/3/1 Correspondence 1984-1985

Correspondence *re* arrangements for the lecture and its subsequent publication.

PRA/9/3/2 Lecture 1984

Manuscript draft. Also includes a copy of the announcement and a list of slides, with illustrations attached.

PRA/9/3/3 Published version 1984-1985

Manuscript and typescript copies (1 each).

PRA/9/3/4 Images n.d.

Includes 6 polychrome photographs (2 of them mounted), 17 monochrome photographs (all mounted and numbered), 7 transparencies.

2 folders.

PRA/9/4 **'INVITED LECTURES 1985-1989'** **1985, 1986, 1989**

Contents of a file so inscribed. Manuscript drafts, in chronological order.

12 items in 7 folders.

PRA/9/4/1 'Medical imaging by nuclear magnetic resonance', Plenary Lecture, Central Regional Meeting of the American Chemical Society, Akron, Ohio, US, 6 June 1985 1985

Includes correspondence with the organisers, abstract, etc.

PRA/9/4/2 'Theory of MRI imaging', NATO Advanced Study Institute on NMR in the Life Sciences, Erice, Sicily, Italy, June 1985 1985

Also includes a copy of the typescript.

PRA/9/4/3	'Developments in NMR imaging', Royal Society of Chemistry, Cambridge, July 1985 Also presented at the 7th Specialised Colloque AMPÈRE, Bucharest, Romania, September 1985, under the title 'MRI: the new imaging modality'.	1985
PRA/9/4/4	'The early days of NMR imaging', William S. Moore Memorial Lecture, Harvard Medical School, Boston, Massachusetts, US, May 1986	1986
PRA/9/4/5	'Nuclear magnetic resonance imaging for medical diagnosis', William S. Moore Memorial Lecture, Department of Physics, University of Nottingham, 29 October 1986	1986
PRA/9/4/6	'Nuclear magnetic resonance in physics and in medical physics', Physics PG Seminar, 27 February 1989	1989
PRA/9/4/7	'Magnetic resonance imaging', Conference on the Frontiers of Biological Imaging, State University of New York, Albany, New York, US, April 1989	1989
PRA/9/4/8	'Magnetic resonance in medicine: seeing safely inside the human body', University of Queensland Medical School, Herston, Queensland, Australia, 23 May 1989 Includes a copy of the announcement.	1989
PRA/9/4/9	'Some contributions of physics to magnetic resonance imaging', Melbourne, Australia, May 1989	1989
PRA/9/4/10	'Introduction to NMR in biology and medicine', Lovelace Medical Foundation Annual Symposium: Noninvasive Techniques in Biology and Medicine, Albuquerque, New Mexico, US, 14-15 September 1989 Includes a flier of the meeting. Also includes a draft and proof copy of the published version.	1989
PRA/9/4/11	'NMR imaging', Los Alamos, September 1989	1989

PRA/9/4/12	'Magnetic resonance imaging', Bloch Symposium, Stanford University, California, US, 27-28 October 1989 Includes a typescript of the lecture.	1989
PRA/9/5	**'MAGNETIC RESONANCE IMAGING: SEEING SAFELY INSIDE THE HUMAN BODY', ROYAL INSTITUTION LECTURE, ROYAL INSTITUTION OF GREAT BRITAIN, LONDON, 24 OCTOBER 1986** 4 items in 4 folders.	**1986-1988**
PRA/9/5/1	Correspondence	1986-1988
PRA/9/5/2	Lecture Handwritten draft. Also presented at 'Cambridge University Clinical School 27 Oct 86', 'St Andrews 22 Oct 86','Sigma Xi 14 Oct 86'. The scientific research society Sigma Xi was founded in 1886 by a group of Cornell University students and F. Van Vleck, to honour excellence in scientific investigation and encourage a sense of companionship and cooperation among researchers in all fields of science and engineering.	1986
PRA/9/5/3	Published version Copies of handwritten draft, typescript draft, offprint.	1986-1987
PRA/9/5/4	Photographs 16 monochrome photographs of graphical illustrations and MRI scans (12 mounted).	n.d.
PRA/9/6	**'INVITED LECTURES 1989-1997'** Contents of 2 files so inscribed. Manuscript drafts, in chronological order. 29 items in 13 folders.	**1990-1997, n.d.**

PRA/9/6/1	'Passive magnetic screening', CIBA Foundation, London, 7 June 1990	1990
PRA/9/6/2	'31P relaxation mechanisms in phosphorus metabolites', 15th AMPÈRE Congress on Magnetic Resonance and Related Phenomena, Stuttgart, September 1990	1990
PRA/9/6/3	'Magnetic resonance reflections', After Dinner Speech, First International Conference on NMR Microscopy, Max-Planck-Haus, Heidelberg, Germany, September 1991 Typescript.	1991
PRA/9/6/4	'Magnetic resonance imaging reminiscences', First Forum AMPÈRE, Rome, Italy, 21 November 1991	1991
PRA/9/6/5	'Nuclear magnetic resonance at high magnetic fields', SE Section of the American Physical Society (SESAPS) Conference, Durham, North Carolina, US, 13 November 1991 Includes a set of transparencies.	1991
PRA/9/6/6	Reply to Toast, BRSG Dinner, Nottingham, 14 April 1992	1992
PRA/9/6/7	'Resonance recollections', BRSG Meeting, Nottingham, April 1992	1992
PRA/9/6/8	'Report AMPÈRE congress in Athens Sept 1992' [no further details] Includes a set of transparencies with snapshots from the meeting.	1992-1993
PRA/9/6/9	'Introduction of Ted Becker as after-dinner speaker', 8 September 1993	1993
PRA/9/6/10	After Dinner Speech, BRSG Meeting, St Andrews, 14 September 1993	1993
PRA/9/6/11	'Seeing safely inside the human body for clinical purposes', Frontiers of Human Knowledge Lectures, University of	1993

/...

/...	Florida, Gainesville, Florida, US, Autumn 1993 3 lectures.	
PRA/9/6/12	'Mechanisms of 31P relaxation in phosphorus metabolites', First Nottingham Symposium on Magnetic Resonance in Medicine, Nottingham, 6-8 April 1994 Includes transparencies and an abstract.	1994
PRA/9/6/13	'Nottingham NMR recollections', After Dinner Speech, First Nottingham Symposium on Magnetic Resonance in Medicine, Nottingham, 6-8 April 1994	1994
PRA/9/6/14	'Relaxation and molecular dynamics in solid steroids', 27th Congress AMPÈRE, Kazan, Russia, August 1994	1994
PRA/9/6/15	Speaker Introduction, 1994 Fall Convocation, College of Liberal Arts and Sciences, University of Florida, Gainesville, Florida, US, 13 September 1994	1994
PRA/9/6/16	'A history of NMR from a lifetime's work', Conference of the International Society of Magnetic Resonance (ISMAR), Sydney, Australia, 16 July 1995 Includes an abstract and a copy of the revised proofs.	1995
PRA/9/6/17	'A compact low inductance transverse gradient system for magnetic resonance microscopy: application to human spinal cord', Third International Conference on Magnetic Resonance Microscopy, Würzburg, Germany, August 1995 Includes Andrew's introduction of the opening lecturer.	1995
PRA/9/6/18	'Fifty years of NMR: a personal account', Poznan, Poland, October 1995 Also presented at Cracow, Poland, October 1995	1995
PRA/9/6/19	'Fifty years of NMR: a personal account', 17th Annual SE Magnetic Resonance Conference (SEMRC), Tallahassee, Florida, US, 2 December 1995	1995

PRA/9/6/20	'Magnetic resonance imaging', Harvard Jubilee, Harvard, Massachusetts, US, 10 December 1995	1995
PRA/9/6/21	'Fifty years of nuclear magnetic resonance', Department of Radiology University of Florida College of Medicine Research Day, University of Florida, Gainesville, Florida, US, 20 January 1996	1996
PRA/9/6/22	'Imagining presentation to Dr Bill Harris NSF 5 April 1996' No further details. At the time, W. Harris was Assistant Director for the Mathematical and Physical Sciences Directorate of the National Science Foundation (NSF).	1996
PRA/9/6/23	'Imagining presentation to Dr Adriaan de Graaf NSF 8 May 1996' No further details. A. de Graaf likewise was an executive officer of the NSF's Directorate for Mathematical and Physical Sciences.	1996
PRA/9/6/24	'Magnetic resonance imaging', Witness Seminar, Wellcome Institute, London, 2 July 1996	1996
PRA/9/6/25	Introduction of Speakers, 28th Congress AMPÈRE, Canterbury, Kent, 1-7 September 1996 Introductions of Y. Servant, R. Pound, B. Bleaney and J. G. Powles.	1996
PRA/9/6/26	'Five minute talk at Clare Hall', Cambridge, 12 November 1996	1996
PRA/9/6/27	'Relaxation & molecular dynamics in estradiol and other biomolecular solids', BRSG Meeting, Guildford, 15 April 1997 Includes notes and calculations. Also includes a set of transparencies. Presented also at 'Brey Symposium, Gainesville, 2 November 1997'.	1997
PRA/9/6/28	'Novel gradient coils for magnetic resonance microscopy', 4th International Conference on Magnetic Resonance	1997 /...

/...	Microscopy & Macroscopy, Albuquerque, New Mexico, US, September 1997 Includes an abstract and a copy marked 'Ms sent to Dr Botto 28 Oct [19]97'.	
PRA/9/6/29	'NMR basic physics' Typescript of a lecture, with manually inserted graphs and tables.	n.d.

SERIES 10 **VISITS AND CONFERENCES** **1968-2000**

In chronological order. Assembled from a file inscribed 'Miscellaneous'.

27 items in 11 folders.

PRA/10/1 Visiting Professor of Physics, University of Gainesville, Florida, US, 1969-1970 1968-1971

Correspondence. Also includes Andrew's lecture notes for a special course on 'Molecular motion in solids as studied by nuclear magnetic resonance'. Handwritten and paginated, with a typescript overview.

Andrew spent the academic year 1969-1970 in the Department of Physics and Astronomy at the University of Florida.

PRA/10/2 18th AMPÈRE Congress, University of Nottingham, 9-14 September 1974 1974

Photocopy of announcement. Andrew acted as Chairman of the Organizing Committee.

PRA/10/3 'C[omputed] T[omography] conference', Bordeaux, France, 24 September 1979 1979

Copy of the abstract with handwritten note by Andrew.

PRA/10/4 Visit to the Physics Department, University of Florida, Gainesville, Florida, US, Fall Quarter, 1979 1979

Copy of Andrew's report.

PRA/10/5 Visiting Professorship, Solid State Physics Research Unit, University of Witwatersrand, Johannesburg, South Africa, 4 April-10 May 1980 1979-1980

Correspondence. Also includes a copy of the agreement.

PRA/10/6 'First basic course on nuclear magnetic resonance', University of Granada, Spain, 2-5 June 1981 1981

/...

/...

Correspondence inviting Andrew to teach in this new course.

PRA/10/7

Copenhagen Symposium on Diagnostic Imaging, Copenhagen, Denmark, 27-29 May 1982 — 1982

Correspondence.

PRA/10/8

Visit to Madrid, Spain, 12-18 June 1984 — 1983-1984

Correspondence *re* Andrew's lecture on 'NMR imaging and its contribution to medicine and biology', delivered in the main auditorium of the Consejo Superior de Investigaciones Científicas (CSIC) on 14 June 1984.

CSIC is the Spanish equivalent of the Science Research Council.

PRA/10/9

XI International Conference on Magnetic Resonance in Biological Systems, Goa, India, 16-24 September 1984 — 1984

Correspondence *re* Andrew's travel arrangements (18-25 September 1984). Includes handwritten drafts of his invited presentation on 'Developments in NMR imaging' and his remarks concluding the conference. Further includes his remarks on the premature death of R. Srinivasan, for whose Ph.D. on electronic spin resonance Andrew had acted as external examiner.

PRA/10/10

International Conference on Magnetic Resonance in Cancer, Banff, Canada, 30 April-4 May 1985 — 1985

Includes correspondence, list of participants, copy of the abstract of Andrew's paper on 'MRI in the preoperative evaluation of musculoskeletal tumors', handwritten draft of the paper and notes to introduce another speaker. Also includes notes on a discussion with H. Pettersson, Andrew's co-author in the published version of the paper, draft of that version, etc.

See also PRA/1/1/201, PRA/12/1/4.

PRA/10/11

Seventh International Meeting on NMR Spectroscopy, University of Cambridge, 8-12 July 1985 — 1985

Copy of the programme, with Andrew's notes intercalated inside the front cover.

PRA/10/12

Fourth Annual Meeting of the Society of Magnetic Resonance in Medicine, London, 19-23 August 1985 — 1985

/...	Andrew's comments on the meeting.	
PRA/10/13	'High resolution in NMR solids', Meeting of the British Radiofrequency Spectroscopy Group (BRSG), Oxford, 9-11 April 1986 Correspondence, copy of the programme.	1986
PRA/10/14	Joint Royal Society-American Philosophical Society Symposium, Philadelphia, Pennsylvania, US, 24-26 April 1986 Correspondence, copy of the programme, list of participants.	1985-1986
PRA/10/15	IX AMPÈRE Summer School, Novosibirsk, USSR, 20-26 September 1987 Correspondence, conference announcement. Andrew was an invited speaker.	1986-1987
PRA/10/16	Visit to China, 17 November-1 December 1988 Correspondence. Includes a copy of the invitation from the Academia Sinica. During his visit Andrew visited Beijing, Shanghai and Fuzhou, where he attended the 5th National Meeting on Magnetic Resonance, 24-29 November 1988.	1987-1988
PRA/10/17	Lecturing tour in Australia, 24 April-27 May 1989 Correspondence, copies of itinerary and schedule. Andrew travelled as the Selby Fellow of the Australian Academy of Science. En route to Australia he also visited Tahiti and Easter Island, arriving in Perth on 4 May. In Australia his tour led him from Townsville and Perth out West to Adelaide, Melbourne, Canberra, Sydney and Brisbane.	1988-1989
PRA/10/18	'Noninvasive Techniques in Biology and Medicine', Lovelace Medical Foundation Annual Symposium, Albuquerque, New Mexico, US, 14-15 September 1989 Correspondence. Also includes copies of the draft programme and a typescript of Andrew's lecture 'Introduction to nuclear magnetic resonance in biology and medicine'.	1988-1989

PRA/10/19	Bloch Symposium, Stanford University, California, US, 27-28 October 1989 Correspondence. Includes a copy of the original programme. Felix Bloch was a Stanford physicist and NMR pioneer who shared the 1952 Nobel Prize in physics with E.M. Purcell. Bloch died in 1983. The symposium celebrated his work on the occasion of the 60th anniversary of his paper on the theory of metals.	1983, 1989-1990
PRA/10/20	Visit to the UK, 10 July-18 December 1989 Correspondence etc. Includes handwritten drafts for the following: opening remarks for a lecture on 'Magnetic resonance imaging: a new diagnostic aid in medicine', given at the University of Wales, Bangor, on 16 November 1989; 'Nuclear magnetic resonance imaging', given in the Department of Biochemistry, University of Cambridge, in November 1989; 'NMR on cholesterol', given at the University of St Andrews, in December 1989; and 'An overview of magnetic resonance imaging', given at a meeting of the British Radiofrequency Spectroscopy Group (BRSG), Cambridge, in December 1989.	1988-1989
PRA/10/21	European Congress of NMR in Medicine and Biology, Strasbourg, France, 2-5 May 1990 Correspondence. Andrew chaired the session on 'Electron spin resonance' on 5 May 1990.	1990
PRA/10/22	Molecular Motion and Structure in Disordered Condensed Matter, Meeting of the British Radiofrequency Spectroscopy Group (BRSG), Canterbury, Kent, 4-6 September 1991 Correspondence, list of posters etc. Andrew presented a paper on 'The new U.S. National High Magnetic Field Laboratory'.	1991
PRA/10/23	Conference of the International Society of Magnetic Resonance (ISMAR), Sydney, Australia, 16-21 July 1995 Invitation.	1995
PRA/10/24	6th Beijing Conference and Exhibition on Instrumental Analysis (BCEIA'95), Beijing, China, 24-27 October 1995 Correspondence.	1995

PRA/10/25	28th Congress AMPÈRE, Canterbury, Kent, 1-7 September 1996 Correspondence.	1996
PRA/10/26	7th Beijing Conference and Exhibition on Instrumental Analysis (BCEIA'97), Shanghai [sic], China, 14-17 October 1997 Correspondence.	1996-1997
PRA/10/27	42nd Experimental Nuclear Magnetic Resonance Spectroscopy Conference (ENC), Orlando, Florida, US, 11-16 March 2001 Correspondence. Andrew was invited to give the Banquet After Dinner Speech.	2000

SERIES 11 **CORRESPONDENCE** **1950-2001**

In chronological order.

PRA/11/1	'FRENCH SCIENTISTS, 1950-1981'
PRA/11/2	'SCIENTISTS IN JAPAN, 1950-1982'
PRA/11/3	'BANGOR, 1958-1964'
PRA/11/4	'GENERAL, 1965-1983'
PRA/11/5	'PETER MANSFIELD, 1968-1976'
PRA/11/6	'BRITISH UNIVERSITIES, 1969-1983'
PRA/11/7	'WALDO HINSHAW, 1971-1977'
PRA/11/8	'DR ROLF SJÖBLOM, 1974-1978'
PRA/11/9	'L.J. CHALLIS, 1974-1978'
PRA/11/10	'GERMAN SCIENTISTS, 1974-1982'
PRA/11/11	'DUTCH SCIENTISTS, 1976-1982'
PRA/11/12	'GENERAL ELECTRIC COMPANY LTD, 1977-1983'
PRA/11/13	'PETER SCOTT, 1977-1980'
PRA/11/14	'DR GWILYN PARRY JONES, 1978-1981'
PRA/11/15	'PROF. HELION VARGAS, 1978-1981'
PRA/11/16	'PROF. MIKE HOCH, 1978-1982'
PRA/11/17	'NORTH AMERICAN SCIENTISTS, 1979-1990'
PRA/11/18	'GUO QUANZHONG, 1980-1981'

PRA/11/19 'CAMBRIDGE, 1982-2000'

PRA/11/20 'EAMONN CASHELL, 1982-1982'

PRA/11/21 'SCIENTISTS IN OTHER COUNTRIES, 1982-2000'

PRA/11/22 'UK & IRELAND, 1982-1989'

PRA/11/23 'NOTTINGHAM, 1983-2000'

PRA/11/24 'FORMER PHD STUDENTS, 1983-2000'

PRA/11/25 'EUROPE, 1984-2001'

PRA/11/26 'POLISH SCIENTISTS, 1984-2000'

PRA/11/27 'NORTH AMERICAN SCIENTISTS, 1990-2001'

PRA/11/28 'UK, 1990-2000'

95 items.

PRA/11/1 **'FRENCH SCIENTISTS, 1950-1981'** **1950-1981**

Includes correspondence with the future Nobel laureate A. Kastler *re* rotatory oscillations in aromatic monocrystals etc. Also includes notes and calculations in Andrew's hand.

PRA/11/2 **'SCIENTISTS IN JAPAN, 1950-1982'** **1950-1982**

Correspondence with Japanese solid state physicists based chiefly in Tokyo, including S. Fujiwara *re* a Japanese translation of Andrew's book *Nuclear Magnetic Resonance* (Cambridge, 1955). Also includes a letter of condolence for Andrew, signed by 22 delegates to the International Symposium on Nuclear Magnetic Resonance, Tokyo, 1-3 September 1965 (Andrew's wife Mary had just died of cancer). Further includes Andrew's notes on a visit from colleagues at Sanyo Electric Co. Ltd on 25 January 1982, *re* magnets for whole-body imaging.

PRA/11/3 **'BANGOR, 1958-1964'** **1958-1964**

Correspondence dating from Andrew's time at the University College of North Wales at Bangor. Includes letters from a

/...

/... Polish colleague (H. Niedwodniczanski).

PRA/11/4	**'GENERAL, 1965-1983'**	**1965-1983**
	Chiefly correspondence with colleagues both at Nottingham and beyond, including behind the Iron Curtain. 6 folders.	
PRA/11/4/1	1965-1976	1965-1976
PRA/11/4/2	1977-1978	1977-1978
PRA/11/4/3	1979-1980 Includes correspondence with the future Nobel laureate P.C. Lauterbur *re* his application for an extension of his NATO grant for the project 'The development of NMR imaging techniques'. Both Andrew and his Nottingham colleague P. Mansfield were Principal Collaborators on this project. Further includes correspondence *re* the unexpected death of Andrew's friend and colleague T.A. Scott.	1979-1980
PRA/11/4/4	1981 Includes correspondence with Andrew's Nottingham colleague S. Clough *re* his work on methyl group hopping etc.	1981
PRA/11/4/5	January-May 1982 Includes correspondence with Andrew's colleague P.B. Moon *re* 'the process of discovery of the magic angle - whether it dropped out of very complicated mathematics or whether [Andrew] [was] able to see it physically and followed it up by the equation-work'. Also includes correspondence with J. Carolan or Nalorac Cryogenics outlining possible collaborations between the company and General Electric Company (GEC) to develop and produce human size imaging magnetics.	1982
PRA/11/4/6	June 1982-February 1983	1982-1983

PRA/11/5 **'PETER MANSFIELD, 1968-1976'** **1968-1976**

Correspondence (some in the form of extensive memoranda) with and *re* P. Mansfield.

PRA/11/6 **'BRITISH UNIVERSITIES, 1969-1983'** **1969-1983**

12 items in 3 folders.

PRA/11/6/1 I. M. Ward 1969

Correspondence with the Bristol physicist I. M. Ward *re* research carried out by Andrew in 1948-1949.

PRA/11/6/2 J. W. Emsley 1976-1979

Correspondence *re* an article on zeugmatography for *Progress in NMR Spectroscopy*.

Emsley was one of the editors of the journal.

PRA/11/6/3 D. Melville 1976

Correspondence with the physicist D. Melville *re* the biological effects of magnetic fields.

PRA/11/6/4 F.A. Rushworth 1976

Correspondence with fellow physicist F.A. Rushworth *re* his preprint of 'The NMR second moment of solid cyclohexane'.

PRA/11/6/5 T. Green 1978

Correspondence with T. Green *re* his research on lysozyme relaxation.

PRA/11/6/6 B. Bleaney 1978

Correspondence with the Oxford physicist B. Bleaney *re* the organisation of a protest about the trial of the Russian dissident Y.A. Orlov at the upcoming AMPÈRE conference in Tallinn, USSR.

PRA/11/6/7 C. Hall 1979

/...

/...

Correspondence with the Manchester physicist C. Hall *re* his team's research on NMR technique in porous media. Includes a typescript draft of a paper for joint publication.

PRA/11/6/8 — R.J.P. Williams — 1980

Correspondence with the Oxford chemist R.J.P. Williams *re* data on alpha-chymotrypsin used for Andrew's recent publication on proton magnetic relaxation of proteins in the solid state.

PRA/11/6/9 — J.A.S. Smith — 1980

Correspondence *re* the proposed statutes of the International Committee on NQR Spectroscopy, on which Smith asked Andrew to comment.

PRA/11/6/10 — R.K. Harris — 1981

Correspondence with *re* R.K. Harris *re* his work on rapid rotation for quadrupolar nuclei.

PRA/11/6/11 — K. J. Packer — 1982-1983

Correspondence *re* a manuscript submitted to *Molecular Physics*, of which K.J. Packer was associate editor.

PRA/11/6/12 — Miscellaneous — 1980-1983

Letters and notes from various correspondents.

5 pieces.

PRA/11/7 — **'WALDO HINSHAW, 1971-1977'** — **1971-1977**

Chiefly documents Hinshaw's appointment to a fellowship at the University of Nottingham (from September 1971). The collaboration between Andrew and Hinshaw continued for many years.

PRA/11/8 — **'DR ROLF SJÖBLOM, 1974-1978'** — **1971, 1974-1978**

Correspondence with the Swedish chemist R. Sjöblom, who had spent the academic year 1973-1974 in the Physics Laboratory of the University of Nottingham. Topics covered include joint publications, ongoing research projects, arrangements *re* Sjöblom's doctoral examination at the University of Uppsala, Sweden, on 21 November 1975

/...

/...

(Andrew acted as external examiner), etc. Includes a draft of the seminar Andrew gave during his visit to Sweden.

See also PRA/5/4.

2 folders.

PRA/11/9 **'L.J. CHALLIS, 1974-1978'** **1974-1978**

Correspondence with Andrew's Nottingham colleague L.J. Challis, *re* who should next act as head of the Department of Physics, Challis's activities and responsibilities, the true story of how NMR imaging came to be, etc.

PRA/11/10 **'GERMAN SCIENTISTS, 1974-1982'** **1974-1982**

Includes press coverage from a visit of Andrew to Giessen, Germany, in May 1982 (in German, with handwritten translations, not in Andrew's hand).

PRA/11/11 **'DUTCH SCIENTISTS, 1976-1982'** **1976-1982**

Includes correspondence re atherosclerosis in rabbits.

PRA/11/12 **'GENERAL ELECTRIC COMPANY LTD, 1977-1983'** **1978-1983**

Correspondence and notes on exchanges with colleagues at the Hirst Research Centre of the General Electric Company Ltd (GEC), Wembley. From February 1982 Andrews officially acted as a consultant for GEC, among others evaluating patents relating to MRI imagine machines.

See also PRA/7/4.

PRA/11/13 **'PETER SCOTT, 1977-1980'** **1977-1980**

Correspondence with P. Scott and other representatives of the US healthcare giant Johnson and Johnson Ltd. Scott acted as a consultant to Johnson and Johnson.

PRA/11/14 **'DR GWILYN PARRY JONES, 1978-1981'** **1978-1981**

Covers research and personal life. G.P. Jones was a former student of Andrew's (PhD 1963) who took up an appointment at the University of Petroleum and Minerals, Dhahran, Saudi Arabia.

PRA/11/15 **'PROF. HELION VARGAS, 1978-1981'** **1978-1981**

Correspondence re Vargas' one-year visit (1979-1980) at Andrew's laboratory in Nottingham under the Royal Society exchange agreement with the Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq).

CNPq was the National Council for Technological and Scientific Development, Brazil.

PRA/11/16 **'PROF. MIKE HOCH, 1978-1982'** **1978-1982**

Correspondence with M.J.R. Hoch of the University of Witwatersrand, Johannesburg, South Africa, re Hoch's work on the DNA bases, the biological effects of magnetic fields, etc.

PRA/11/17 **'NORTH AMERICAN SCIENTISTS, 1979-1990'** **1979-1990**

7 folders.

PRA/11/17/1 North American Correspondence, 1979-1982 1979-1982

Includes correspondence with Andrew's former postdoc W.S. Hinshaw *re* his work on NMR imaging systems for the Technicare Corporation.

PRA/11/17/2 North American Correspondence, 1983 1983

Re Andrew's relocation, invitations to conferences, etc.

PRA/11/17/3 North American Correspondence, 1984 1984

Includes correspondence *re* Andrew's John Albert Southern Lecture at Furman University, South Carolina, US, on 10 April 1984, and other invitations.

PRA/11/17/4 North American Correspondence, 1985-1986 1985-1986

Topics covered include invitations and career advice to younger colleagues.

PRA/11/17/5 North American Correspondence, 1987 1986-1987

Chiefly *re* an invitation to a NATO Advanced Study Institute to be held in Il Ciocco, Italy, 14-26 June 1987. Also Includes material *re* a speaking engagement at the University of

/...

/...

Virginia, Charlottesville, US.

PRA/11/17/6 North American Correspondence, 1988 1988

PRA/11/17/7 North American Correspondence, 1989-1990 1988-1990

Includes an exchange with P. Beckmann *re* D.E. Woessner's classic paper on 'Spin relaxation processes in a two-proton system undergoing anisotropic reorientation', Journal of Chemical Physics 36 (1962).

PRA/11/18 **'GUO QUANZHONG, 1980-1981'** **1980-1981**

Re Guo's research on delayed Fourier transformation of the NMR free induction delay.

See also PRA/5/6.

PRA/11/19 **'CAMBRIDGE, 1980-2000'** **1980-2000**

Correspondence with colleagues and institutions at the University of Cambridge, English. Also includes Andrew's own correspondence while visiting.

5 folders.

PRA/11/19/1 Cambridge Correspondence, 1980-1983 1980-1983

Chiefly *re* Andrew's retirement at Nottingham and subsequent relocation to the University of Florida.

PRA/11/19/2 Cambridge Correspondence, 1984 1984

Re Andrew's election FRS, President of the International Society of Magnetic Resonance (ISMAR), etc. Includes a letter detailing Andrew's take on the story of NMR imaging and the extent to which it can be argued that NMR was a British invention (to J.M. Thomas, 6 February 1984)

PRA/11/19/3 Cambridge Correspondence, 1986-1991 1986-1991

Re Andrew's upcoming research visit (at the invitation of L.D. Hall in the School of Clinical Medicine) in the summer and autumn 1989. For the duration of his stay Andrew was elected to a Fellowship at his old College, Christ's, and also Visiting Scholar at Pembroke College.

/...

Also includes a commentary (for the Citation Classics section of Current Contents) on Andrew's 1978 publication with his research student P.A. Bottomley on 'RF magnetic field penetration, phase shift and power dissipation in biological tissue: implications for NMR imaging', *Physics in Medicine and Biology* 23 (1978). By 1989 this publication emerged as one of the most heavily cited papers in its field.

PRA/11/19/4 Cambridge Correspondence, 1992-2000 1992-2000

Re the Cavendish Laboratory's centenary celebration of P. Kapitza's birth on 8 July 1894. Andrew attended the workshop organised to mark the occasion.

PRA/11/19/5 Visiting Fellowship, Clare Hall, 1996 1995-1997

Documents Andrew's election to a Visiting Fellowship (in 1996) and subsequently to Life Membership at Clare Hall, Cambridge. In 1996 Andrew paid another research visit to Cambridge, again at the invitation of L.D. Hall in the School of Clinical Medicine.

PRA/11/20 'EAMONN CASHELL, 1981-1982' 1981-1982

Correspondence with Andrew's former Nottingham colleague E.M. Cashell, who had moved to the Cork Regional Technical College in Ireland.

PRA/11/21 'SCIENTISTS IN OTHER COUNTRIES, 1982-2000' 1982-2000

4 items in 5 folders.

PRA/11/21/1 China 1982-2000

Correspondence with Meng Quin-An and others. Meng had spent nearly two years (1979-1981) in Andrew's Nottingham laboratory. See also PRA/5/6.

Covers research, laboratory life and personal matters. Includes correspondence *re* the 7th Beijing Conference and Exhibition on Instrumental Analysis (BCEIA'97), Shanghai, 14-17 October 1997.

2 folders.

PRA/11/21/2 India, Brazil, Japan 1983-2000

Includes correspondence with G. Gorvil, C.R.K. Murty and H. Vargas.

PRA/11/21/3	Thailand, Israel, South Africa Christmas letters from the Thai physicist S. Ketudat and his wife Emilie, and correspondence with J. Genossar of the Technion, Haifa, Israel and with M.J.R. Hoch in South Africa.	1989-1996
PRA/11/21/4	Australia, New Zealand Includes Christmas letters from old colleagues and correspondence *re* Andrew's visit to the region on the occasion of the Conference of the International Society of Magnetic Resonance (ISMAR), Sydney, 16-21 July 1995.	1992-1998
PRA/11/22	**'UK & IRELAND, 1982-1989'** 4 folders.	**1982-1989**
PRA/11/22/1	Correspondence July 1982-February 1983 Chiefly *re* Andrew's relocation to Florida.	1982-1983
PRA/11/22/2	Correspondence March-July 1983 As before. Also includes correspondence *re* an invitation for Andrew to write a review article on NMR body scanners for *Reports on Progress in Physics*, etc.	1983
PRA/11/22/3	Correspondence August 1983-December 1984	1983-1984
PRA/11/22/4	Correspondence October 1986-October 1989 Includes correspondence *re* Andrew's Royal Institution Lecture, 'Magnetic resonance imaging: seeing safely inside the human body', London, 24 October 1986.	1986-1989
PRA/11/23	**'NOTTINGHAM, 1983-2000'** Starts off just before Andrew left Nottingham but then turns into correspondence with colleagues back in Andrew's old department. 4 folders.	**1983-2000**

PRA/11/23/1	Nottingham correspondence, 1983-1985 Chiefly with Andrew's secretary in Nottingham.	1983-1985
PRA/11/23/2	Nottingham correspondence, 1986-1990	1986-1990
PRA/11/23/3	Nottingham correspondence, 1992-1995	1992-1995
PRA/11/23/4	Nottingham correspondence, 1996-2000	1996-2000
PRA/11/24	**'FORMER PHD STUDENTS, 1983-2000'** Correspondence with former PhD students *re* their research activities, life, etc. 5 items in 5 folders.	**1983-2000**
PRA/11/24/1	Gwilyn Parry Jones Includes correspondence *re* the closure of the Physics Department at Bangor. Jones worked at the University of Petroleum and Minerals, Dhahran, Saudi Arabia.	1983-1992
PRA/11/24/2	Goska Jaroszkiewicz Chiefly *re* E. M. Jaroszkiewicz's research for PhD and subsequent activities. Also includes correspondence *re* other Polish researchers in Andrew's group at the University of Florida. Jaroszkiewicz started her PhD with Andrew at Nottingham but did not complete it before he relocated to the US.	1983-1994
PRA/11/24/3	Chunpen Simaroj Thomas C.S. Thomas and her husband Ian had relocated to Khon Kaen University, Thailand.	1983-1999
PRA/11/24/4	Tasneem Zahra Rizvi Includes correspondence *re* Rizvi's experiments for her doctoral research and her subsequent activities at the Pakistan Council of Scientific & Industrial Research	1983-1995

/...

/...

Laboratories, Lahore, and other research institutes all over the world.

Rizvi started her PhD with Andrew at Nottingham. Following her successful viva (1985) she relocated to her country of origin, Pakistan.

PRA/11/24/5 — Lei Yang — 1997-2000

Chiefly comments on Lei Yang's thesis at various stages.

Lei Yang was Andrew's last PhD student. Andrew continued to supervise him after Yang relocated to Canada. Yang defended his thesis in May 1999

PRA/11/25 — **'EUROPE, 1984-2001'** — **1984-2001**

Correspondence with colleagues on the European Continent.

6 folders.

PRA/11/25/1 — European correspondence, 1984-1988 — 1984-1988

PRA/11/25/2 — Ioan Ursu — 1988-1994

Correspondence with and *re* the Rumanian physicist I. Ursu, who was detained for several months in 1990 following the collapse of the Rumanian government. Andrew knew Ursu from their collaborations on the councils of the Groupement AMPÈRE and ISMAR.

PRA/11/25/3 — European correspondence, 1989-1991 — 1989-1991

PRA/11/25/4 — European correspondence, 1992 — 1992

PRA/11/25/5 — European correspondence, 1993-1997 — 1993-1997

PRA/11/25/6 — European correspondence, 1998-2001 — 1998-2001

PRA/11/26 — **'POLISH SCIENTISTS, 1984-2000'** — **1984-2000**

/...

/...

15 items.

PRA/11/26/1 — Jacek Hennel — 1984-2000

Covers research, news about colleagues, personal life, the political situation in Poland. Hennel was a close friend of Andrew's since he worked with him in Bangor, 1959-1960. Among other occasions, they met again when Hennel came to the University of Nottingham, 1974-1975, and the University of Florida, January-March 1988, both times as a Visiting Professor. Hennel also attended the Andrew 75th Anniversary Symposium at the University of Florida in January 1997.

3 folders.

PRA/11/26/1/1 — Hennel correspondence, 1984-1989 — 1984-1989

PRA/11/26/1/2 — Hennel correspondence, 1990-1995 — 1990-1995

PRA/11/26/1/3 — Hennel correspondence, 1996-2000 — 1996-2000

PRA/11/26/2 — Joanna Kapturczak — 1985-1987

Scientific correspondence. Includes a typescript draft of a joint paper entitled 'NMR study of noncrystalline cellulose'. Further includes notes by Andrew on the chronology of their collaboration.

PRA/11/26/3 — Lidia Latanowicz — 1985-2000

Covers research, colleagues, personal life, the situation in Polish universities. Latanowicz spent two years in 1983-1985 at the University of Florida as a visiting research scientist.

PRA/11/26/4 — Kasimierz Jurga — 1985-1991

Chiefly *re* joint research. Jurga spent 9 months (starting in September 1985) in Andrew's laboratory at the University of Florida as a visiting research scientist. Their collaboration continued after that.

PRA/11/26/5 — Eugeniusz Szcześniak — 1986-2000

Covers joint research, personal life, conditions in Szcześniak's Poznan laboratory, etc. Szcześniak spent 18

/...

/...

months as a visiting research scientist at the University of Florida, 1986-1988, and another 16 or so months in 1993-1995. His collaboration with Andrew continued until 2000, when their last joint paper (on pregnenolone) appeared.

PRA/11/26/6 — Barbara Peplinska — 1987-2000

Peplinska spent 21 months (starting in October 1987) in Andrew's laboratory at the University of Florida as a visiting research scientist. She returned for another extended research visit 1995-1996.

PRA/11/26/7 — Stefan Jurga — 1987-1999

Correspondence *re* invitations for Jurga to give seminars at the University of Florida, etc.

PRA/11/26/8 — Andrzej Jasinski — 1988-1998

Chiefly scientific correspondence. Jasinski also gave a seminar at the University of Florida in December 1994 and visited again in January 1998. The collaboration between him and Andrew went back to 1970, possibly even before then.

PRA/11/26/9 — Marek Kempka — 1988-1998

Chiefly *re* research. Kempka was a visiting research scientist at the University of Florida, 1988-1989 and 1993-1994, and continued to work with Andrew, notably on solid cortisone.

PRA/11/26/10 — Stanislaw Sagnowski — 1988-1998

Correspondence *re* arrangements for Sagnowski's visiting research fellowships at the University of Florida, 1988-1989 and 1991-1992. Also includes correspondence with Sagnowski's son Piotr, who hoped to follow his father into the field of NMR.

PRA/11/26/11 — Jacek Radomski — 1989-2000

Chiefly *re* arrangements for Radomski's research visits and his activities back in Poland, where he worked as a physicist at Adam Mickiewicz University, but in 1992-1993 also acted as advisor to the then Deputy Prime Minister, Pawel Laczkowski.

Radomski was a visiting research scientist at the University of Florida in 1990 and again 1991-1992 and 1997-1998. He had also been at UF in 1982-1983. He and Andrew

/...

/...

continued to publish together until 2000.

PRA/11/26/12	Marian Buszko Buzko was a visiting scientific researcher at the University of Florida from October 1990. Subsequently he returned to UF on a permanent basis.	1989-1999
PRA/11/26/13	Stanislaw Głowinkowski Covers arrangements *re* Głowinkowski's fellowship at the University of Florida, May 1997 to March 1998, etc.	1995-2000
PRA/11/27	**'NORTH AMERICAN SCIENTISTS, 1990-2001'** 4 items.	**1990-2001**
PRA/11/27/1	North American correspondence, 1990-1994 Includes correspondence with R.G. Shulman *re* a report for the National Academy of Science, US, illustrating how basic research paved the way for the discovery and development of MRI.	1990-1994
PRA/11/27/2	North American correspondence, 1995-June 1997 Includes correspondence *re* the golden jubilee of NMR Harvard and *re* Andrew's obituary of E.M. Purcell for the journal *Magnetic Resonance in Medicine* (including drafts and an offprint of it).	1995-June 1997
PRA/11/27/3	North American correspondence, June-December 1997 Includes correspondence *re* a workshop on fundamental aspects of diffusion in NMR, to be held in September 1997 at the University of New Mexico; Andrew was invited to chair the opening session. Also includes correspondence *re* a symposium in honour of E.M. Purcell at Harvard University.	June-December 1997
PRA/11/27/4	North American correspondence, 1998-2001 Includes an invitation to join the North American Board of the *Journal of Physics: Condensed Matter.*	1998-2001

PRA/11/28	**'UK, 1990-2000'**	**1989-2000**
	7 items.	
PRA/11/28/1	British correspondence, 1989-1990 Includes correspondence with Pergamon Press *re* their proposed *Encyclopaedia of NMR Spectroscopy*.	1989-1990
PRA/11/28/2	British correspondence, 1991-1992	1991-1992
PRA/11/28/3	British correspondence, 1993-1995	1993-1995
PRA/11/28/4	British correspondence, 1996	1996
PRA/11/28/5	British correspondence, 1997	1997
PRA/11/28/6	British correspondence, 1998 Includes correspondence with John Wiley & Sons Ltd *re* Andrew's contribution to the Medical Spin-off volume of their *Encyclopaedia of Nuclear Magnetic Resonance*.	1998
PRA/11/28/7	British correspondence, 1999-2000	1999-2000

SERIES 12 **NON-TEXTUAL MEDIA** **n.d.**

PRA/12/1 SLIDES

PRA/12/2 TRANSPARENCIES

PRA/12/3 PHOTOGRAPHS

9 items.

PRA/12/1 **SLIDES** **n.d.**

4 items.

PRA/12/1/1 Slide Album 1 n.d.

Black plastic cover. Eight sheets with slides (some gaps).

Includes dividers labelled 'Lecture', 'Amino Acids', 'Dipeptides, Tripeptides, Homopolypeptides', 'Proteins, Ribonuclease, Insulin', 'Lysozyme, Chymotrypsin, DNA', 'General'.

PRA/12/1/2 Slide Album 2 n.d.

Red cardboard cover. Ten sheets with slides (some gaps).

Top sheet labelled 'SOLID STATE SLIDES and invited lectures in 1995'.

PRA/12/1/3 Slide Album[?] 3 n.d.

Cover missing. Ten sheets with slides (few gaps).

Some sheets labelled ('Magnets in Nottingham', 'Magnets in UF', 'NHMFL', 'Technicare scanners/3T MRI', 'Other Magnets', 'Instruction NMR', 'Instruction MRI').

NHMFL is the National High Magnetic Field Laboratory in Tallahassee, Florida, US.

PRA/12/1/4 Slide Album[?] 4 n.d.

/...

/...

Cover missing. Eleven sheets with slides (some gaps).

Some sheets labelled as followed: 'The above 8 slides were shown in New Orleans', 'My head-saggital senes-Technicore imager 1986', etc.

An additional note (not Andrew's handwriting) reads 'Slides for New Orleans and Banff lectures' and 'Slides of mag. res. images of ERA's anatomy'.

See also PRA/1/1/201, PRA/9/2/31, PRA/10/10.

PRA/12/2 **TRANSPARENCIES** **n.d.**

3 items.

PRA/12/2/1 'Diffusion of water [etc]' n.d.

4 sheets.

PRA/12/2/2 'Shielding factor [etc]' n.d.

16 sheets.

PRA/12/2/3 'NMR [etc]' n.d.

5 sheets.

PRA/12/3 **PHOTOGRAPHS** **n.d**

2 items.

PRA/12/3/1 Folder 1 n.d.

9 monochrome photographic reproductions of MRI scans. Chiefly of Andrew himself.

9 pieces.

PRA/12/3/2 Folder 2 n.d.

4 monochrome photographic reproductions of MRI scans. Chiefly of Andrew himself.

/...

/...

An additional note (not Andrew's handwriting) reads 'These scans were in a year 2000 file'.

4 pieces.

INDEX OF CORRESPONDENTS

Index of correspondents

Index of correspondents

Index of correspondents

Index of correspondents

Index of correspondents

Index of correspondents

Index of correspondents

Index of correspondents

Index of correspondents

Index of correspondents

Index of correspondents

Index of correspondents

Index of correspondents

Index of correspondents

Index of correspondents

Index of correspondents

Index of correspondents

Index of correspondents

Index of correspondents

Index of correspondents