

SECTION C

RESEARCH

C.1-C.203

C.1-C.33 CHEMISTRY PART II AND POSTGRADUATE

C.34-C.54 GERMANY

C.55-C.79 CAMBRIDGE

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C.110-C.203 BRISTOL

CHEMISTRY PART II AND POSTGRADUATE

- C.1 "Nitro Paraffins". Contents of a folder so labelled: manuscript notes on the literature, latest bibliographical reference 1927.
- C.2 "The molecular structure of phenyl-nitro-methane and its derivatives, studied with the aid of measurements of molecular electric moment". Thesis presented for part II of the examination in Chemistry and for the degree of Bachelor of Science. Lincoln College Oxford, May 1933. 64pp typescript.
- C.3 "Résumé of portions of the Chemistry part II & B.Sc. Thesis of F.C. Frank - Oxford, May, 1933". 12pp typescript.
- C.4 "Phenyl iso-nitromethane & subst. phenyl nitro-methanes". Contents of a folder so labelled: manuscript graphs, notes and diagrams, latest bibliographical reference 1933.
- C.5 "Oxidation of Aliphatics". Contents of a folder so labelled: manuscript notes on the literature abstracted 1933, 1934.
- C.6-C.18 "Dielectric Losses". Contents of a folder so labelled divided into 13 for ease of reference.
- C.6-C.15 Manuscript notes on the literature, calculations, graphs, 1933-37. 10 folders.
- C.16 "Loss in alcohol": manuscript drafts, graphs, data etc., found clipped together; latest bibliographical reference 1934.

- C.17 "Dielectric loss evidence on the molecular condition and properties of palmitic in solid solution" by W. Jackson (later Lord Jackson) and F.C. Frank, 21 June 1935. 6pp typescript.
- "Dielectric loss measurements of W. Jackson on polystyrene ("Trolitul") mouldings prepared by F.C.F." Graph dated 27 October 1936 and 3pp manuscript.
- C.18 "Statement and discussion of power-factor and conductivity measurements on a solution of stearanilide in paraffin wax. Also results of power factor measurements on palmitic acid and beeswax solutions". 3pp manuscript by Jackson, with Frank's manuscript additions.
- C.19-C.21 "Molecular rotation". Contents of a folder so labelled: manuscript notes on the literature abstracted 1934.
- 3 folders.
- C.22 Motion of molecules in crystals. Manuscript notes on the literature abstracted 1934.
- C.23-C.25 Contents of Frank's folder divided into three for ease of reference.
- C.23 Letter from Ronsheim & Moore sending list of chemicals, 3 November 1934; two manuscript drafts entitled "A new solvent effect in dipole moment measurements", typescript draft entitled "An additional solvent effect in dipole moment measurements", 3 May 1935, etc. See also C.27.
- C.24, C.25 Notes on the literature, data, calculations etc. 1935, 1936. 2 folders.
- C.26 "Polar effect". Contents of a folder so labelled: brief correspondence 13 April 1935 and nd. from P.A. Small; notes on the strength of acids etc., some with annotations by Small; graphs.

- C.27-C.29 Contents of Frank's folder divided into three for ease of reference.
- C.27 Typescript draft entitled "An additional solvent effect in dipole moment measurements" 3 May 1935, typescript draft entitled "A new solvent effect in dipole moment measurements" by Frank and L.E. Sutton, latest bibliographical reference 1936.
- C.28 Brief correspondence March 1936; letters to [G.I.] Taylor, 3 April 1936 and 11 May 1936 and "A further note on the theory of absences in crystalline solids" dated 9 March 1936 and enclosed in Frank's letter of 3 April.
- C.29 Manuscript notes, data, calculations, graphs. Some material dated 1936.
- C.30 Letter to the editor of *Nature* on computing the electric moments of solute molecules, by E.A. Guggenheim. 3pp typescript dated 5 March 1936 and 1p table of electric moments of solute molecules, with Frank's manuscript notes attached.
- C.31 "Wrinch proteins". Contents of an envelope so inscribed, including: manuscript and typescript notes on "Wrinch on proteins", typescript dated 21 May 1936; two draft letters to [D.M.] Wrinch, one dated 12 June 1936; letter from W.T. Astbury, 19 June 1936.
- C.32 "Dossier on minor solvent effects": manuscript notes relating to work of H.O. Jenkins 1936.
- C.33 "A research in the physical chemistry of dielectrics with special bearing on dielectric losses". Frank's D.Phil. thesis retained in original covers. The degree was awarded in 1937.

GERMANY

- C.34 Notebook inscribed on front cover "P. Debye" and "Ausgewählte Kapitel der Technischen Mechanik Wintersem. 1905. A. Sommerfeld." The first page of notes is headed "Beanspruchung von Kugeln".
- C.35-C.37 Contents of Frank's folder divided into three for ease of reference. The folder was of German manufacture (F. Soennecken, Bonn).

Manuscript notes on the literature abstracted 1933-37. Include dielectric loss literature from 1923. There are many references to the work of Debye.
- C.38-C.40 Contents of Frank's folder divided into three for ease of reference. The folder was of German manufacture (F. Soennecken, Bonn).
- C.38, C.39 Manuscript notes on the literature, drafts, data, graphs etc. variously dated 1933-38 and nd. 2 folders.

Include "Recalcs of Jackson's appendix on voids, which is wrong", plan of a book on rotating molecules 16 September 1937 and diagram of "low temperature small thermostat, to supply a stream of cooled dried air at a regulated temperature" 14 December 1938.
- C.40 Printed material re scientific equipment etc.
- C.41 Contents of Frank's folder.

Manuscript notes and drafts including items in German, latest bibliographical reference 1937.
- C.42-C.47 Contents of Frank's folder. The folder contained five smaller folders, three with titles, subdividing the contents. In addition a few items were found loose.
- C.42 "Oscillographic Relaxation". Electrical circuit diagrams; manuscript draft "Oscillographische Demonstrationsversuch über Dipolrelaxation."

- C.43 Untitled. Material relating to work with E. Fischer: bibliography headed "Literatur über dielektrische Verluste und Dispersion" with manuscript note at end "zusammengestellt Fischer 29.4.38"; letters from Fischer 1938, 1939; reprint by Fischer "Einfluss der Molekelstruktur auf die dielektrische Relaxation" which acknowledges Frank as a co-experimenter.
- C.44 Untitled. Notes on the literature abstracted 1936; graphs.
- C.45 "Dielectrics & Plastics". Letter from B.W. Sillars sending "some selections from my results on paraffin wax solutions" 18 October 1937; manuscript draft dated April 1938, etc.
- C.46 "Dutta Sound Dispersion". Letter from A. Dutta, Bose Research Institute, Calcutta, 5 May 1938; manuscript drafts by Dutta and Frank on sound dispersion in liquids, etc.
- C.47 Loose items. Include small format notebook, latest bibliographical reference 1939 and draft letter to Professor Hassell nd.
- C.48-C.51 Contents of Frank's folder divided into four for ease of reference.
- C.48 19pp manuscript draft beginning "The foundations of the classical theory of solutions as laid by Van't Hoff, Arrhenius, and Ostwald are distinguished by their simplicity and the readiness with which they can be mathematically formulated". Note at end "Translation for Debye. Finished 6/5/37. F.C.F."
- C.49 Manuscript notes and calculations including "relaxation for non-rigid molecules", "energy of two touching rod-shaped molecules in dependence on the angle between them".
- C.50 Manuscript notes and calculations including "Debye script, notation"; "Debye-Ramm calculations".
- C.51 Printed matter re German scientific equipment.

- C.52 Graphs; diagrams; notes on the literature, latest bibliographical reference 1937; etc.
- C.53 Manuscript "notes on the evaluation of polarisation along axes for links", typescript draft "das Quadrupolmoment des Kerns".
- C.54 Manuscript draft beginning "Nach bekannte und gut begründete theoretische Gesichtspunkte ... gibt es beim Kristallwachstum eine besondere Hemmung in Anfang eines neuen Schichtes auf eine ausgefüllte dicht-gepackte Fläche."

CAMBRIDGE

- C.55 "The behaviour of dielectrics in alternating current fields". Three duplicated typescript "informative summaries" based on lectures by E.B. Moullin delivered at the Post Office Research Station, Dollis Hill, London, March 1938.
- C.56-C.60 Material re patenting of "A short wave generator" (British patent application no.29526/38).
- C.56-C.58 Correspondence with patent agency, industrial concerns (Marconi, General Electric Company, Metropolitan-Vickers) and colleagues (R.V. Jones, E.B. Moullin) re Frank's invention, 1938-39.
- C.56 1938 September, October. Includes provisional specification filed 12 October.
- C.57 1938 November, December.
- C.58 1939 January, March, April and nd.
- C.59 Manuscript notes and drafts.
- C.60 Printed material.
- C.61-C.65 "Relaxation Kinetics". Contents of a folder so labelled divided into five for ease of reference.
- C.61 Letter from Electrical Research Developments sending details of their products, 20 October 1938; carbon copy of letter to D.M. Wrinch, 13 December 1938; manuscript drafts of letter to Riley, 9 May 1939.
- C.62 "Frictional Electricity". 7pp typescript with manuscript additions and corrections.

- C.63 Manuscript draft headed "General principles" and beginning "Free charges and induced (or permanent) dipoles on suspended particles produce forces of attraction and repulsion between them, and between particles and the containing walls."
- C.64 Manuscript notes, drafts, graphs, calculations etc. including note of Frank's contribution to unidentified meeting and notes dated 22 March and 1 April 1940.
- C.65 Manuscript notes, drafts, calculations, data.
- C.66-C.72 Contents of Frank's "seven-in-one" folder.
- C.66 Manuscript notes headed "stat. mech", "equilibria", etc.
- C.67 Manuscript notes headed "gases", "improved argument", etc.
- C.68 Manuscript notes headed "Integrated intensity or integrated reflection", "plastic deformation", "conduction in ionic crystals", "photoconduction in alkali halides", etc.
- C.69 Letter from D.M. Wrinch, 14 December 1938; manuscript and typescript notes, diagrams re work of Wrinch.
- C.70 Manuscript notes headed "Particles" and "A model of the melting crystal", the latter dated 25 April 1939.
- C.71 Report on the work of the Cambridge branch of the Association of Scientific Workers, October 1938 - May 1939; programme for Easter term [1939].
- C.72 "Bull Moose Gap". Humorous piece explaining why Bull Moose Gap was one of the friendliest and most peaceful towns in North America. With scientific matter on verso.

C.73 Contents of Frank's folder.

Manuscript notes, drafts, diagrams, graphs etc. including rough drafts of letter to E.H. Neville re his "Vector maps as positive evidence in crystal analysis", *Nature* 142, December 3, 1938. The drafts of Frank's letter begin "I saw Dr. Wrinch the other day ... "

C.74-C.77 Contents of Frank's "five-in-one" file, one compartment found empty.

C.74 "Notes on the measurement of small differences of impedances" by W.R. Piggott, sent to Frank 17 May 1939; letter from Frank to [O.H.] Wansbrough-Jones appending "very brief notes supplementary to those Rideal sent", 8 June 1940; miscellaneous manuscript notes, calculations, diagrams.

C.75 Manuscript notes, data, graphs. A few items dated in February and March 1939.

Exercise book used for brief records of research March-August 1939 including experimental work on rubber.

Report on Frank's research July-August 1939. It notes that "from Sept. 3rd other work has been performed in the same laboratory, under Prof. Rideal's direction, which cannot be reported here. From Nov. 1st. onwards the work has been paid for by the Ministry of Supply ... "

C.76 Manuscript notes and drafts including "Concerning the conditions of applicability of the new Debye (inner field) theory of polar dielectrics", 18 November 1936 and note on the literature abstracted 8 May 1938.

C.77 Receipts, price list, circuit diagram etc. Include items dated between December 1938 and July 1939.

- C.78 Manuscript notes on the literature, latest bibliographical reference 1939. Folder also includes letter from Lloyds Bank Oxford (found with the notes) re transferring Frank's account to their Cambridge branch 8 July 1939.
- C.79 Contents of Frank's folder.
- Manuscript notes, drafts, diagrams, data, nd.

SECOND WORLD WAR

- C.80 "A theory of evaporation in wind from surfaces of small downwind length" by Frank. 8pp typescript plus figures. The figures are dated 25 September and 9 October 1940 and stamped "Photographic Department CDES Porton".
- Folder also contains "Notes on paper by Dr. Frank". 2pp manuscript signed O.G. (later Sir Graham) Sutton 24 October 1940.
- C.81 "Misc. Maths". Contents of a folder so inscribed.
- Manuscript calculations, graph. Some calculations on back of leaves from 1940 calendar, 1943 University of Bristol examination script and postwar form letter re supply of reprints to German scientist, K. Wirtz.
- C.82-C.90 "Frank. Sundry theoretical studies". Contents of a folder so inscribed. This folder contained a number of smaller folders and many loose papers.
- C.82, C.83 Contents of Frank's folder divided into two for ease of reference.
- C.82 Manuscript draft "Heightfinding in RDF - General requirements"; manuscript calculations, data, graphs.
- C.83 Undated letter from Frank at the Air Ministry to O.G. Sutton requesting meteorological data for work on ultra-short radio-waves; letter from R.L. Smith-Rose re literature on ultra-short radio-waves, 16 August 1941; "Abnormal RF Ranges - Preliminary Survey" by D.J. Garrard, 12 September 1941 (7pp typescript); manuscript calculations, data, graphs.

- C.84 Contents of Frank's folder.
- Manuscript drafts headed "Reflection at inhomogeneities", "Non-abrupt discontinuities"; Department of Scientific and Industrial Research Radio Research Board paper "Study of field strength records obtained on the Post Office Ultra-Short-Wave Radio Telephone Link between Guernsey & England. (Wavelengths 5m. and 8m.) by R.L. Smith-Rose and A.C. Stickland, 1 September 1941; DSIR RRB paper "The dielectric constant and loss factor of water vapour at a wavelength of 9cms. (frequency = 3330 mc/s.)" by J.A. Saxton, 4 March 1942.
- C.85, C.86 "The theory of errors in continuous measurement". Contents of folder so inscribed divided into two for ease of reference.
- Manuscript drafts, calculations, nd. This theoretical work relates to the process of gunnery.
- C.87 "Continuous error theory". Contents of folder so inscribed.
- Manuscript draft, calculations.
- C.88 Manuscript notes, drafts, calculations, data. Includes 15pp manuscript draft headed "Polar diagrams of arrays".
- C.89 Miscellaneous manuscript notes, calculations, graphs etc; also letter from H.M. Nautical Almanac Office to E.M. Wright enclosing mathematical table, 17 January 1945.
- C.90 "A particular type of resultant distribution", 7pp manuscript not in Frank's hand.
- C.91 "Water launch rocketry". Contents of a folder so inscribed.
- Manuscript notes and calculations headed "water launch", "condensation from burnt material"; also letter from R.F. Tuckett re "dielectric manuscript", 14 December 1943.

- C.92, C.93 Contents of Frank's folder divided into two for ease of reference.

Notes, drafts, calculations re rockets, nd.
- C.94 "Statistics". Contents of a folder so inscribed.

Manuscript notes headed "Differential binomial", "Zero crossings for a rectangular frequency spectrum", "A collection of noise numbers", etc. One item dated in 1944.
- C.95 "Inductive effects: the internal electrostatic behaviour of molecules", 27 July 1945. 12pp typescript.

Folder also includes manuscript draft of paper, letter from R.J.B. Marsden commenting on paper, 31 October 1945, manuscript calculations.
- C.96 "Map projection". Contents of a folder so inscribed.

Manuscript calculations.
- C.97-C.109 Contents of a parcel sent from the Air Ministry to Frank at Bristol, 15 August 1947.
- C.97 Correspondence 1940, 1944, 1945 and nd. Includes letter from E.C. (later Sir Edward) Bullard, 21 December 1944, thanking Frank for the report on rockets and letter from Sir Henry Tizard, 18 June 1945, thanking Frank for his contribution to an enquiry into the future of weapons.
- C.98 Contents of Frank's folder.

Typescript note "Suggested use of medium wave frequency to standardise ultra short wave measurements" 14 December 1940; letter from Frank to R.L. Smith-Rose 22 April 1941 commenting on DSIR Radio Research Board paper on "The absorption of Ultra-short wireless waves in water vapour of the earth's atmosphere" by J.A. Saxton, with a copy of the paper; manuscript drafts including "Non-reflecting windows for night fighters".

- C.99 Contents of Frank's folder.
- Manuscript drafts "size of a cocked hat in angular measure", "refraction of radio-waves", "atmospheric refraction"; Frank's comments on Operational Research Section report on "Theory of D/F Fixing" with copy of the report; Mathematical Group TRE Swanage report on "Atmospheric Refraction and Blind Bombing"; miscellaneous manuscript notes and calculations. 1941.
- C.100 Contents of Frank's folder.
- Manuscript drafts "Beam width and beam accuracy", "Combustion of hydrazine", data, graphs etc. One item dated 22 August 1944.
- C.101 Report on rockets by Frank. 31pp duplicated typescript plus figures.
- C.102 "Brock's benefit or The future of rockets". 8pp manuscript.
- C.103 "Elementary rocket formulae". Contents of a folder so inscribed.
- Manuscript drafts.
- C.104, C.105 Manuscript notes, calculations, graphs etc. including material on rockets. 2 folders.
- C.106 Government issue notebook. With record of "sites" in the Cherbourg region, St. Lo region, and the area south of Caen. Very few pages used.
- C.107 Miscellaneous items including poems "Der Geraeteraum (nach Christian Morgenstern)" beginning "Es war einmal ein Herr von Braun", "AFIA von Bimbo Morgenstern" (2 copies, one classified "most embarrassing", "trivial" and "top secret"), and "Middle East communique" referring to Rommel and the Auk [Field Marshal Auchinleck].
- "Bimbo" was the nickname of Frederick Norman, Professor of German at King's College London 1937-65. He was at Bletchley during the war and liaised with the Air Ministry's Assistant Directorate of Intelligence (Science).

- C.108 "Schottland und England (nördlicher Teil).
Militärgeographische Operationskarte mit Eintragung der
Kriegswichtigen Wirtschaftsgebiete". 1940.
- C.109 Miscellaneous printed matter, chiefly German wartime scientific
papers.

BRISTOL

- C.110 "Interpolation". Contents of a folder so inscribed.
Letter from the British Rubber Producers' Research Association to H. Fröhlich, 5 July 1946; manuscript graphs, calculations etc.
- C.111 Manuscript notes including "The boundary layer in stirred fluids", 13 June 1949, manuscript calculations.
- C.112 Miscellaneous notes, drafts, calculations late 1940s. Includes material on dislocations.
- C.113, C.114 Typescript copies of pre-war and wartime Russian scientific papers in German, found with Atomic Scientists Association material 1948-50 (F.4-F.7).
2 folders.
- C.115-C.118 Manuscript and typescript notes, graphs, diagrams etc. re crystals research. A few items dated in 1949, 1952 and 1953.
4 folders.
- C.119 Contents of Frank's folder.
Typescript drafts "Written discussion on the Schockley-Read paper - F.C. Frank" 22 May 1950, "The importance of near-screw dislocations in the generation of vacancies and interstitial atoms and in work-hardening" and; manuscript notes, calculations etc.
- C.120 "Comments by F.C.F." 8 January 1954. 4pp typescript re grain boundaries.

- C.121 Contents of Frank's folder.
- Manuscript draft "On grain boundary migration in a material containing pores or inclusions", notes headed "Diffusion of large vacancy aggregates", letter from Frank to G. Matsumara 10 April 1954.
- C.122-C.127 Contents of Frank's folder divided into six for ease of reference.
- Miscellaneous manuscript notes, drafts, calculations, diagrams, correspondence, photographs etc. Include manuscript draft "On the forces due to surface tension with reference to small animals", manuscript draft on martensitic transformations and manuscript draft on the problem of the growth of diamonds. A few items are dated in 1954 and 1955.
- C.128 Contents of Frank's folder.
- Typescript copy of paper by J.D. Eshelby on "The elastic interaction of point defects", manuscript notes headed "Eshelby", elastic constants data. Latest bibliographical reference 1955.
- C.129, C.130 Contents of an envelope divided into two for ease of reference.
- Manuscript notes, drafts, calculations including "A note on the crystallization of polymers", a note addressed "Dear Nevill [Mott]" beginning "I take up the discussion of Mrs. Tipper's fracture in glass which you sent me some weeks ago", and "A note on transformation stresses"; also Courtaulds research report dated March 1956.
- C.131 "X-ray diffuse scattering due to defects in diamond", 8 May 1956. 5pp manuscript draft.
- C.132 Application for patent in respect of "Process for improving the mechanical properties of diamonds" 14 May 1956, with related correspondence 1956, 1957. See also C.140.
- C.133 General Electric Research Laboratory report on "Polygonization" by W.R. Hibbard and C.G. Dunn November 1956, with Frank's manuscript notes and calculations.

- C.134 "On Schrödinger's cat, states and statements", 7 April 1957.
4pp manuscript draft.
- C.135, C.136 Manuscript and typescript notes and drafts, diagrams etc; also letter from N.F. Mott requesting information on work of students of Frank on the "Peierls-Nabarro force", 18 July 1958.

2 folders.
- C.137 "Draft application" for research on the mechanisms that operate when a metal breaks under fatigue conditions, August 1958. 4pp typescript.
- C.138, C.139 Contents of Frank's folder divided into two for ease of reference.

Manuscript and typescript notes and drafts, photographs, correspondence re crystal growth, liquid structures. The correspondence (with J.D. Bernal and others) is dated in 1958 and 1959.
- C.140 "On the melting of carbon", latest bibliographical reference 1959. 7pp manuscript draft.

Folder also contains a little earlier (1956) correspondence re patent for improving the mechanical properties of diamonds, found with the draft. See also C.132.
- C.141-C.143 Miscellaneous manuscript and typescript notes and drafts, etc. 1950s.

3 folders.
- C.144 Contents of Frank's folder.

Manuscript notes, drafts, calculations etc. re superconductors including 2pp manuscript "On the interactions between magnetic flux and dislocations in superconductors". Latest bibliographical reference 1962.

- C.145-C.148 Manuscript and typescript drafts, notes, calculations re superconductors and superconductivity.
4 folders.
- C.145 Untitled 12pp manuscript beginning "Much practical and theoretical interest now attaches to high field superconductors ... ". Latest bibliographical reference 1962.
- C.146 Miscellaneous manuscript notes and calculations found with the preceding.
- C.147 "On superconductive dynamo geometries", 5pp typescript and 1p figures. Latest bibliographical reference 1963.
- C.148 Untitled 25pp manuscript beginning "There should not be much doubt regarding the substantial correctness of Abrikosov's theory of type II superconductors.
- C.149 Contents of Frank's folder.
Manuscript notes, calculations etc. re superconductivity, nd.
- C.150 Manuscript notes, calculations re superconductivity, nd.
- C.151-C.154 Contents of Frank's folder divided into four for ease of reference.
Manuscript notes, drafts, calculations etc., latest bibliographical reference 1963. Includes material on dislocations.
- C.155 Correspondence and papers re patent for a dynamic-electric machine, 1963-66, 1972. Includes complete specification and assignment and agreement between Frank and the National Research Development Corporation.

- C.156-C.159 Manuscript notes and drafts etc. re geophysics research during extended visit to Institute of Geophysics and Planetary Physics, University of California, La Jolla, San Diego, 1964-65. Includes correspondence with E. Orowan September 1964, March 1965 and manuscript draft "Orowan's argument for earthquake energies and displacements". See also H.50-H.52.
4 folders.
- C.160 "A hypothesis for the form of island arcs and the arcuate mountain ranges", latest bibliographical reference 1964. Manuscript and typescript drafts.
- C.161 Research report for period September 1966 - March 1967, "written 26 May 1967".
- C.162-C.164 Miscellaneous manuscript notes, calculations, diagrams, 1960s.
3 folders.
- C.165 Manuscript calculations found with paper on "Reptation of a polymer chain in the presence of fixed obstacles" by P.G. de Gennes. Latest bibliographical reference 1970.
- C.166 Manuscript notes and drafts "Temperature changes associated with adiabatic decompression in geological processes", "temperature variation in upward flow through a pipe" (not in Frank's hand), etc; also printed matter, letter dated 14 August 1971.
- C.167-C.169 Contents of Frank's folder divided into three for ease of reference.
- C.167 "Functions, mathematical and physical", 17pp manuscript draft.
- C.168 "Unravelling double helices", 3pp manuscript draft and untitled 9pp draft, manuscript notes and calculations. One item dated February 1973.
- C.169 Miscellaneous manuscript notes, calculations.

- C.170 "Alternative rotation centres and the third dimension", 14pp manuscript draft plus tables. 1974.
- C.171 "A note on the systematics of rotation-coincidence lattices", 16pp manuscript draft, tables. 1974.
- C.172, C.173 Contents of Frank's folder divided into two for ease of reference.
Manuscript notes, calculations etc. including 3pp manuscript "Some RC ladder calculations", 28 May 1974.
- C.174 Manuscript notes, calculations including "Gear ratio calculations for Michael [Zarins] - Christmas 1976".
- C.175 Manuscript notes, drafts, calculations etc. including 8pp manuscript re "two-dimensional disclinations" and "two-dimensional analysis of three-dimensional disclinations". One item dated 3 May [1977] when Frank was on an extended visit to Université de Paris-Sud (H.109).
- C.176 Manuscript notes, calculations etc. Includes draft letters 1977.
- C.177 "The effect of mobile boundaries", latest bibliographical reference 1978. 4pp manuscript, etc.
- C.178, C.179 Contents of Frank's folder divided into two for ease of reference.
- C.178 Manuscript calculations found with draft paper by C.P. Buckley on "Theory of crystallisation rates and melting rates for polymer crystals, allowing for finite M.W." For some of his calculations Frank used the back of a Bristol University memo dated 2 October 1979.
- C.179 Manuscript notes, calculations, etc. including 2pp manuscript "Caustics of helicoid" from M. Berry 7 September 1979; also letter from A.H. Windle 3 October 1979.

- C.180 "On the distribution of gauche configurations in a layer of aliphatic chains", 5pp manuscript plus calculations on notepaper of International Liquid Crystals Conference, Bangalore, 3-8 December 1979.
- C.181-C.185 Miscellaneous manuscript notes, drafts, calculations etc., 1970s. 5 folders.
- C.186-C.195 Miscellaneous manuscript notes, drafts, calculations, etc., 1980s. 10 folders. As far as possible this material has been arranged chronologically.
- C.196-C.203 Miscellaneous notes, drafts, calculations, etc., nd. 8 folders.