

- (b) Neutron diffraction (elastic scattering) and electrical resistivity studies on alloys (e.g. Au_2Mn) under pressure.
C.D. Bradley
- (c) Division of Molecular Science, National Physical Laboratory, Teddington, Middx.
Tel. TEDdington Lock 3222 ext. 264
Design and application of machinery for organo-chemical synthesis (primarily liquid phase studies).
H.S. Turner
S.L. Thomas
- (d) National Physical Laboratory, Teddington, Middx.
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Hypersonic flow research.
L. Pennelegion
L. Davies
- (e) Standards Division, National Physical Laboratory, Teddington, Middx.
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Pressure standards and the accurate measurement of high pressures; determination of fixed points on the pressure scale.
R.S. Dadson
R.G.P. Greig
- N3.(a) School of Chemistry, The University of Newcastle upon Tyne, Newcastle upon Tyne.
Tel. Newcastle 28511.
Electrochemical studies of systems involving aqueous solutions at elevated temperatures and pressures.
Lord W.F.K. Wynne-Jones (Prof.)
D.A. Lown
- (b) School of Physics, The University of Newcastle upon Tyne, Newcastle upon Tyne.
Tel. Newcastle 28511.
High pressure optical properties of natural and synthetic olivines, diopsides (minerals thought to exist in earth's mantle). etc. in UV and near IR.
G.D. Pitt
D.C. Tozer
- Piston cylinder, 0 - 10 kb, $77^{\circ}K - 400^{\circ}K$.
Working volume - 0.2 - 0.4 c.c.
Hydrostatic media.
- (i) Piston/cylinder, 25 ml. hydrostatic 10-12 kb. 200-300 C. Status :- operational.
(ii) Piston/cylinder, 25 ml. hydrostatic 20+25 kb. 200-300 C. Status :- operational.
(iii) Reinforced cylinder, 30-40 kb. hydrostatic. Status :- projected.
- All machinery to operate with automatic control over long periods.
- Equipment: 8" internal diameter hypersonic shock-tunnel. Working data: Driver gases = He and N_2 at up to 700 b, at room temperature. Reservoir gas = N_2 at up to 500 b at $700^{\circ}K$ to $1700^{\circ}K$.
- Wide variety of pressure measurement equipment; present range to about 15 kb and extensions projected.
- At present : hydraulic system, working volume 350 ml., $25^{\circ} - 230^{\circ}C$, up to 3kb.
Commencing : Gas pressurised system, working up to $500^{\circ}C$ 3 kb approximately.
- Drickamer high pressure optical bombs to 50 kb and 150 kb, in conjunction with an Optica double beam recording spectrophotometer (after modifications to the optics). Spectral range $240 m\mu$ to 2.8μ working at room temperature.

<u>Organisation</u>	<u>Field(s)</u>	<u>Equipment</u>
O1. Inorganic Chemistry Laboratory, University of Oxford, South Parks Road, Oxford. Tel. Oxford 57387.	Stoichiometry and physical properties of oxides at high oxygen pressures. C.M. Quinn	Internally heated autoclave operating 0 - 1 kb gas pressure, 0 - 1200°C.
P1. Pilkington Brothers Ltd., Prescott Road, St. Helens, Lancashire. Tel. St. Helens 28882.		Glass for vision windows in high pressure equipment.
P2. G.V. Planer Ltd., Windmill Road, Sunbury-on-Thames, Middx. Tel. Sunbury 2266 and 4284/5.	(1) Development of pressure transducers for use up to 1.4 kb in corrosive atmospheres up to 600°C. (2) Hot-pressing of ceramics, metals and alloys. Pressures up to 3 kb and temperatures up to 1400°C. (3) Investigation of piezo-electric characteristics of materials under pressures of up to 1.4 kb. G.V. Planer P.J. Evison	Those required to carry out fabrication and testing over the range of pressures and temperatures quoted.
P3. Pressure Products Incorporated (U.K.) Ltd., Shaw Lane, Glossop, Derbyshire. Tel. Glossop 2210.	P.P.I. (U.K.) is engaged on the design and development of high pressure equipment on laboratory and pilot plant scale. A very high pressure test facility is also being developed. K. Ashcroft.	A wide range of equipment is being developed for use above 7 kb and 540°C: hydrothermal apparatus, intensifiers, isostatic pressing systems, very high pressure valves, etc.
R1. Dept. of Geology, University of Reading, Reading, Berks. Tel. Reading 82448 ext. 22.	Hydrothermal mineral synthesis and phase equilibria studies of geological interest. Stability relations of natural minerals and rocks. Main research directed at alkaline igneous rocks and carbonate assemblages, to date. D.K. Bailey	Cold-seal hydrothermal to 2 kb and 900°C.