pute the compressibility at any pressure from 1 atm to P_m , the maximum pressure in the cell under _____ the conditions used. If compressibility data is desired over a wider pressure range, the applied pressure may simply be increased appropriately and another pressure profile determined experimentally.

Although considerably more work (particularly theoretical) must be done, pressure profiles appear to offer a unique and convenient method for the determination of compressibilities. In the latter regard, compressibilities can be determined over a wide pressure range (probably up to 200 kbar) and perhaps in a single experiment. A diamond-anvil high-pressure cell equipped with a temperature jacket would probably permit the determination of compressibilities as a function of temperature as well, with only perhaps a microgram of material in a single compression, providing care is taken to obtain equilibrium conditions.

REFERENCES

l C. E. Weir, A. VanValkenburg, E. R. Lippincott, "Optical Studies at High Pressures Using Diamond Anvils," Modern Very High Pressure Techniques, Butterworths, Inc., Washington, D. C., 1962, pp. 51-69.

2 C. E. Weir, E. R. Lippincott, A. Van Valkenburg, E. N. Bunting, "Infrared Studies in the 1 to 15 micron Region at 30,000 Atmospheres," Journal of Research, National Bureau of Standards, vol. 63A, 1959, pp. 55-62.

3 A. VanValkenburg, "High Pressure Microscopy," High Pressure Measurement, Butterworths, Inc., Washington, D. C., 1963, pp. 87-94.

4 A. VanValkenburg, "High Pressure Microscopy of the Silver and Cuprous Halides," Journal of Research, National Bureau of Standards, vol. 68A, 1964, pp. 97-103.

5 E. R. Lippincott and H. C. Duecker, "Measurement of Pressure Distribution in Fixed Anvil High Pressure Cells," Science, vol. 144, 1964, pp. 1119-1121.

6 P. W. Bridgman, "Shearing Phenomena at High Pressures, Particularly in Inorganic Compounds." Proceedings American Academy of Arts and Sciences, vol. 71, 1937, pp. 387-460.

7 M. B. Myers, F. Dachille, R. Roy, "Pressure Multiplication Effect in Opposed-Anvil Configurations," Review of Scientific Instruments, vol. 34, 1963, pp. 401-402.

8 E. B. Christiansen, S. S. Kistler, W. B. Gogarty, "Irreversible Compressibility of Silica Glass as a means of Determining the Distribution of Force in High Pressure Cells," Journal of American Ceramic Society, vol. 45, 1962, pp. 172-177.

9 B. C. Deaton and R. B. Graf, "Pressure Distribution and Hysteresis Effects in a Tetrahedral Anvil Device," Review of Scientific Instruments, vol. 34, 1963, pp. 45-47.

10 R. Hill, "Plasticity," Oxford Press, London, 1956, pp. 50-127.

11 J. C. Jamieson and A. W. Lawson, "X-Ray Diffraction Studies in the 100 Kilobar Pressure Range," Journal of Applied Physics, vol. 33, 1962 pp. 776-780.

12 J. W. Jackson and M. Waxman, "An Analysi of Pressure and Stress Distribution Under Rigid Bridgman-Type Anvils," High Pressure Measurement, Butterworths, Inc., Washington, D. C., 1963, pp. 39-58.

13 H. C. Duecker and E. R. Lippincott, "Assembly and Performance of a Double-Beam Microscop Spectrophotometer from Commercial Instruments," Review of Scientific Instruments, vol. 35, 1964, September issue.

14 R. P. Bauman, "Absorption Spectroscopy, Wiley & Sons, New York, 1962, pp. 84-87.

15 J. C. Zahner and H. G. Drickamer, "Pres sure Effects in Nickel Dimethylglyoxime and Related Chelates," Journal of Chem. Phys., vol. 3 1960, pp. 1625-1628.

16 J. C. Zahner and H. G. Drickamer, "The Effect of Pressure on the Absorption Edge in He Metal Halides," Phys. and Chem. Solids, vol. 11 1959, pp. 92-95.

17 F. D. Murnaghan, "Finite Deformation c an Elastic Solid," Wiley and Sons, New York, 19

18 P. W. Bridgman, "The Compression of 46 Substances to 50,000 Kg/cm²," Proceedings of th American Academy of Arts and Sciences, vol. 74 1940, pp. 21-51.

12