

REFERENCES

- Allen, R.A., Keck, J.C., and Camm, J.C. (1962). *Phys. Fluids* 5, 284.
- Alpher, R.A., and White, D.R. (1959). *Phys. Fluids* 2, 162.
- Appleton, J.P. (1967). *J. Chem. Phys.* 47, 3231.
- Appleton, J.P., Steinberg, M., and Liquornik, D.J. (1968). *J. Chem. Phys.* 48, 599.
- Appleton, J.P., Steinberg, M., and Liquornik, D.J. (1970). *J. Chem. Phys.* 52, 2205.
- Baird, J.P. (1972). *Honours Thesis*, Australian National University, Canberra.
- Bauer, S.H., and Tsang, S.C. (1963). *Phys. Fluids* 6, 182.
- Becker, E. (1972). *Ann. Rev. Fluid Mech.* 4, 155.
- Belford, R.L., and Stehlow, R.A. (1969). *Ann. Rev. Phys. Chem.* 20, 247.
- Benson, S.W., and Fueno, T. (1962). *J. Chem. Phys.* 36, 1597.
- Benson, S.W., and Berend, G.C. (1966). *J. Chem. Phys.* 44, 470.
- Bethe, H.A., and Teller, E. (1941). U.S. Ballistic Res. Lab. Rep. X-117 (Referenced by Herzfeld and Litovitz 1959 and Sedney 1961).
- Bittker, D.A., and Scullin, V.J. (1972). *NASA TND-6586*.
- Blom, A.P., Bray, K.N.C., and Pratt, N.H. (1970). *Astronautica Acta* 15, 487.
- Borrell, P. (1972). *Faraday Discussion of the Chemical Society* 53, 63 and private communication.
- Bradley, J.N. (1962). "Shock Waves in Chemistry and Physics", (John Wiley and Sons).
- Brau, C.A., Keck, J.C., and Carrier, G.F. (1966). *Phys. Fluids* 9, 1885.
- Bray, K.N.C. (1959). *J. Fluid Mech.* 6, 1.
- _____ (1968). *J. Phys. B* 1, 705.
- _____ (1970a). *J. Phys. B* 3, 1515.
- _____ (1970b). "Gasdynamics Vol 1., Nonequilibrium Flows Part II", (Dekker, New York).

- Bray, K.N.C., and Pratt, N.H. (1967). *Eleventh Symposium (International) on Combustion*, 23.
- Bray, K.N.C., and Pratt, N.H. (1970). *J. Chem. Phys.* 53, 2987.
- Breen, J.E., Quy, R.B., and Glass, G.P. (1973a). *J. Chem. Phys.* 59, 556.
- Breen, J.E., Quy, R.B., and Glass, G.P. (1973b). *Ninth International Shock Tube Symposium, Stanford*, 375.
- Breshears, W.D., and Bird, P.F. (1968). *J. Chem. Phys.* 48, 1768.
- Breshears, W.D., and Bird, P.F. (1972). *J. Chem. Phys.* 56, 5347.
- Breshears, W.D., and Bird, P.F. (1973a). *Fourteenth Symposium (International) on Combustion*, 212.
- Breshears, W.D., and Bird, P.F. (1973b). *J. Chem. Phys.* 58, 5176.
- Breshears, W.D., Bird, P.F., and Kiefer, J.H. (1971). *J. Chem. Phys.* 55, 4017.
- Bull, D.C., and Edwards, D.H. (1968). *A.I.A.A. J.* 6, 1549.
- Byron, S. (1966). *J. Chem. Phys.* 44, 1378.
- Caledonia, G.E., and Center, R.E. (1971). *J. Chem. Phys.* 55, 552.
- Capiaux, R., and Washington, M. (1963). *A.I.A.A. J.* 1, 650.
- Carlson, L.A., and Rieper, R.G. (1972). *J. Chem. Phys.* 57, 760.
- Cary, B. (1965). *Phys. Fluids* 8, 26; (1966) 9, 1047.
- Center, R.E. (1973). *J. Chem. Phys.* 58, 5230.
- Center, R.E., and Caledonia, G.E. (1971). *Appl. Opt.* 10, 1795.
- Center, R.E., and Caledonia, G.E. (1972). *J. Chem. Phys.* 57, 3763.
- Chackerian Jr., C. (1971). *Eighth International Shock Tube Symposium, Imperial College (Chapman and Hall, London)*.
- Chackerian Jr., C., and Weisbach, M.F. (1973). *J. Chem. Phys.* 59, 807.
- Clarke, J.F., and McChesney, M. (1964). "The Dynamics of Real Gases", Butterworths.
- Cleaver, J.W., and Crow, I.G. (1973). *J. Chem. Phys.* 59, 1592.
- Copper, J.A. (1964). *A.I.A.A. J.* 2, 1669.
- Crane, K.C.A. (1975). *Ph.D. Thesis, Australian National University, Canberra*.

- Daffey, M.D. (1973). *Honours Thesis*, Australian National University, Canberra.
- Dorrance, W.H. (1962). "Viscous Hypersonic Flow", McGraw-Hill.
- Dove, J.E., and Jones, D.G. (1971). *J. Chem. Phys.* 55, 1531.
- Dove, J.E., and Jones, D.G. (1972). *Chem. Phys. Lett.* 17, 134.
- Dove, J.E., Jones, D.G., and Teitelbaum, H. (1973). *Fourteenth Symposium (International) on Combustion*, 177.
- Duffy, R.E. (1965). *A.I.A.A. J.* 3, 237.
- Dunn, M.G. (1969). *A.I.A.A. J.* 7, 1553; 1717.
- Dunn, M.G., and Lordi, J.A. (1970). *A.I.A.A. J.* 8, 339.
- Ebrahim, N.A. (1975). *Ph.D. Thesis*, Australian National University, Canberra.
- Ebrahim, N.A., and Hornung, H.G. (1975). *A.I.A.A. J.* (to be published).
- Fisher, E.R., and Kummeler, R.R. (1968). *J. Chem. Phys.* 49, 1075.
- Garr, L.J., and Marrone, P.V. (1963). *CAL QM-1626-A-12 II*.
- Garr, L.J., Marrone, P.V., Joss, W.W., and Williams, M.J. (1966). *CAL QM-1626-A-12 III*.
- Gaydon, A.G., and Hurle, I.R. (1963). "The Shock Tube in High-Temperature Chemical Physics", (Chapman and Hall, London).
- Gear, C.W. (1971). *Comm. A.C.M.* 14, 176.
- _____. (1971). "Numerical Initial Value Problems in Ordinary Differential Equations", Prentice-Hall.
- Gordiets, B.F., Osipov, A.I., and Shelepin, L.A. (1971). *Sov. Phys. JETP* 32, 334.
- Gordon, S., and McBride, B. (1971). *NASA SP-273*.
- Hall, J.G. (1963). *Cal Report No. 128*.
- Hanson, R.K. (1971). *A.I.A.A. J.* 9, 1811.
- _____. (1973). *Ninth International Shock Tube Symposium, Stanford*, 365.
- Hanson, R.K., and Baganoff, D. (1970). *J. Chem. Phys.* 53, 4401.

- Hanson, R.K., and Baganoff, D. (1972). *A.I.A.A. J.* 10, 211.
- Hayes, W.D., and Probstein, R.F. (1965). "Hypersonic Flow Theory", Vol. 1. (Academic).
- Herzfeld, K.F., and Litovitz, T.A. (1959). "Absorption and Dispersion of Ultrasonic Waves", (Academic, New York).
- Hirschfelder, J.O., Curtiss, C.F., and Bird, R.B. (1954). "Molecular Theory of Gases and Liquids", (Wiley, New York).
- Hornung, H.G. (1971). *A.I.A.A. J.* 9, 1198.
- _____ (1972a). *J. Chem. Phys.* 56, 3172.
- _____ (1972b). *J. Fluid Mech.* 53, 149.
- Hornung, H.G., and Sandeman, R.J. (1974). *J. Phys. D* 7, 920.
- Hurle, I.R. (1964). *J. Chem. Phys.* 41, 3911.
- _____ (1971). *Eighth International Shock Tube Symposium*, Imperial College, (Chapman and Hall, London).
- Hurle, I.R., Russo, A.L., and Hall, J.G. (1964). *J. Chem. Phys.* 40, 2076.
- Hurle, I.R., Jones, A., and Rosenfeld, J.L.J. (1969). *Proc. Roy. Soc.* A310, 253.
- Hsu, C.T., and McMillen, L.D. (1970). *J. Chem. Phys.* 53, 4107.
- Hsu, C.T., and McMillen, L.D. (1972). *J. Chem. Phys.* 56, 5327.
- Jones, A., and Rosenfeld, J.L.J. (1973). *Proc. Roy. Soc. Lond.* A333, 419.
- Kamaratos, E., and Pritchard, H.O. (1971). *Can. J. Chem.* 49, 2617.
- Kamaratos, E., and Pritchard, H.O. (1973). *Can. J. Chem.* 51, 1923.
- Keck, J.C., and Carrier, G. (1965). *J. Chem. Phys.* 43, 2284.
- Kewley, D.J. (1971). *Honours Thesis*, Australian National University, Canberra.
- Kewley, D.J. (1973). *J. Chem. Phys.* 59, 549.
- _____ (1974). *ANU Physics of Fluids Report PF-14*.
- _____ (1975). *J. Phy. B.* (submitted).
- Kewley, D.J., and Hornung, H.G. (1974a). *Chem. Phys. Lett.* 25, 531.

- Kewley, D.J., and Hornung, H.G. (1974b). *J. Fluid Mech.* 64, 725.
- Kiefer, J.H., and Lutz, R.W. (1966a). *J. Chem. Phys.* 44, 658.
- _____. (1966b). *J. Chem. Phys.* 44, 668.
- _____. (1967). *Eleventh Symposium (International) on Combustion*, 67.
- Kiefer, J.H. (1972). *J. Chem. Phys.* 57, 1938.
- _____. (1974). *Chem. Phys. Lett.* 24, 191.
- Labib, N.I., McElwain, D.L.S., and Pritchard, H.O. (1972). *Can. J. Chem.* 50, 3832.
- Labib, N.I., and Pritchard, H.O. (1974). *Can. J. Chem.* 52, 939.
- Landau, L., and Teller, E. (1936). *Phys. Z. Sowjetunion*, 10, 34.
- Lee, G. (1974). *Phys. Fluids* 17, 644.
- Lordi, J.A., Mates, R.E., and Moselle, J.R. (1966). *NASA CR-472*.
- Lutz, R.W., and Kiefer, J.H. (1966). *Phys. Fluids* 9, 1638.
- MacDonald, J.R. (1972). *J. Chem. Phys.* 57, 1016.
- Marrone, P.V. (1963). *CAL QM-1626-A-12(I)*.
- Marrone, P.V., and Treanor, C.E. (1963). *Phys. Fluids* 6, 1215.
- Meier, P. (1973). *Ph.D. Thesis, Australian National University, Canberra*.
- Millikan, R.C., and White, D.R. (1963a). *J. Chem. Phys.* 39, 98.
- _____. (1963b). *J. Chem. Phys.* 39, 3209.
- Myerson, A.L., and Watt, W.S. (1968). *J. Chem. Phys.* 49, 425.
- McElwain, D.L.S., and Pritchard, H.O. (1970). *J. Am. Chem. Soc.* 92, 5027.
- McElwain, D.L.S., and Pritchard, H.O. (1971). *Thirteenth Symposium (International) on Combustion*, 37.
- McIntosh, M.K. (1970). *WRE Tech. Note CPD 169, Australian Defence Scientific Service*.
- McIntosh, M.K. (1971). *Phys. Fluids* 14, 1100.
- McKenzie, R.L. (1972). *Phys. Fluids* 15, 2163.

McLaren, T.I., and Appleton, J.P. (1970). *J. Chem. Phys.* 53, 2850.

Nagamatsu, H.T., and Sheer Jr., R.E. (1965). *A.I.A.A. J.* 3, 1386.

Nikitin, E.E., and Umanski, S. Ya. (1972). *Faraday Discussion of the Chemical Society* 53, 7.

Nikitin, E.E., and Umanski, S. Ya. (1972). *Comments on Atomic and Molecular Physics III*, 195.

Parkinson, W.H., and Reeves, E.M. (1964). *Proc. Roy. Soc. A282*, 265.

Phinney, R. (1963). *A.I.A.A. J.* 1, 496.

_____ (1964). *A.I.A.A. J.* 2, 240.

Pritchard, H.O. (1973). *Can. J. Chem.* 51, 3152.

Pratt, N.H., and Kewley, D.J. (1974). *Joint ANU-SOUTHAMPTON University project (Unpublished)*.

Rapp, D. (1965). *J. Chem. Phys.* 43, 316.

Rapp, D. and Englander-Golden, P. (1964). *J. Chem. Phys.* 40, 573 and 3120.

Reinhardt, W.A. (1969). *NASA TR R-324*.

Rich, J.W. (1971). *J. Appl. Phys.* 42, 2719.

Rich, J.W., and Rehm, R.G. (1967). *Eleventh Symposium (International) on Combustion*, 37 (Berkeley).

Rich, J.W., and Treanor, C.E. (1970). *Ann. Rev. Fluid Mech.* 2, 355.

Russo, A.L., Hall, J.G., and Lordi, J.A. (1966). *A.I.A.A. J.* 4, 741.

Sandeman, R.J., and Allen, G.H. (1971). *Eighth International Shock Tube Symposium*, Imperial College, (Chapman and Hall, London).

Sedney, R. (1961). *J. Aero. Sci.* 28, 189.

_____ (1970). "Gasdynamics Vol. 1 Nonequilibrium Flows Part II", (Dekker, New York).

Sedney, R., South, J.C., and Gerber, N. (1962). "High Temperature Aspects of Hypersonic Flows", 89, (Pergamon Press, Oxford).

Shui, V.H., Appleton, J.P., and Keck, J.C. (1970). *J. Chem. Phys.* 53, 2547.

- Shui, V.H., Appleton, J.P., and Keck, J.C. (1971). *Thirteenth Symposium (International) on Combustion*, 21.
- Shui, V.H., and Appleton, J.P. (1971). *J. Chem. Phys.* 55, 3126.
- Simpson, C.J.S.M. (1973). *J. Chem. Phys.* 58, 5844.
- Smith, C.E. (1966). *J. Fluid Mech.* 24, 625.
- Spurk, J.H. (1970). *A.I.A.A. J.* 8, 1039.
- Spurk, J.H., and Bartos, J.M. (1966). *Phys. Fluids* 9, 1278.
- Spurk, J.H., Gerber, N., and Sedney, R. (1966). *A.I.A.A. J.* 4, 30.
- Stalker, R.J. (1966). *Aeron. J.* 17, 351.
- _____ (1967). *A.I.A.A. J.* 5, 2160.
- _____ (1972). *Aeron. J.* 76, 374.
- _____ (1974). *Proc. I.R.E.E. April*, 90.
- Stalker, R.J., and McIntosh, M.K. (1973). *J. Fluid Mech.* 58, 749.
- Stupochenko, Ye. V., Losev, S.A., and Osipov, A.I. (1967). "Relaxation in Shock Waves", (Springer-Verlag, New York).
- Sutton, E.A. (1962). *J. Chem. Phys.* 36, 2923.
- Teare, J.D., Taylor, R.L., and von Rosenberg Jr., C.W. (1970). *Nature* 225, 240.
- Tirumalesa, D. (1967). *A.I.A.A. J.* 5, 254.
- Treanor, C.E. (1966). *Math. Comp.* 20, 39.
- Treanor, C.E., and Marrone, P.V. (1962). *Phys. Fluids* 5, 1022.
- Treanor, C.E., Rich, J.W., and Rehm, R.G. (1968). *J. Chem. Phys.* 48, 1798.
- Tregay, G.W., Valance, W.G., and MacLean, D.I. (1973). *J. Chem. Phys.* 59, 1634.
- Vincenti, W.G., and Kruger, C.H. (1965). "Introduction to Physical Gasdynamics", (Wiley).
- von Rosenberg Jr., C.W., Taylor, R.L., and Teare, J.D. (1968). *J. Chem. Phys.* 48, 5731.
- von Rosenberg Jr., C.W., Taylor, R.L., and Teare, J.D. (1971). *J. Chem. Phys.* 54, 1974.
- Watt, W.S. (1971). *Appl. Phys. Lett.* 18, 487.

- Watt, W.S., and Myerson, A.L. (1969). *J. Chem. Phys.* 51, 1638.
- Watt, W.S., and Rich, J.W. (1971). *CAL RM-2731-A-1*.
- Wengle, A. (1973). *Ninth International Shock Tube Symposium*, Stanford, 206.
- Wettlaufer, D.E. (1972). *UTIAS Tech. Note No.* 175.
- Wray, K.L. (1962). *J. Chem. Phys.* 37, 1254.
- _____ (1966). *J. Chem. Phys.* 44, 623.
- Zel'dovich, I.B., and Raizer, Yu. P. (1966). "Physics of Shock Waves and High Temperature Hydrodynamic Phenomena", Vols. 1 and 2, (Academic Press).
- Zonars, D. (1967). *A.I.A.A. J.* 5, 57.