(*Continued from page 142*)

INFORMATION RETRIEVAL

Key Words: Thermodynamics-I, Compressibility-I, Predicting-I, Empirical-I, Correlations-I, Relationships-I, Properties (Characteristics)-I, Physical Properties-I, Polarity-H, Gases-H, Vapors-H, Fluids-H, Organic-H, Constants-H, Critical-, Dipole Moments-H.

Abstract: A semi-empirical procedure is proposed for predicting the effect of polarity on the thermodynamic properties of polar organic gases in the dilute phase. A correlation is presented for predicting compressibility factors and the change of enthalpy with pressure in the vapor phase. The correlation involves critical constants, generalized compressibility parameters, and residual dipole moments computed using the Stockmayer force constants.

Reference: Eubank, P. T., and J. M. Smith, **A.I.Ch.E. Journal, 8,** No. 1 p. 117 (March, 1962).

Key Words: Fluid Flow-I, Flow-I, Movement-I, Bubbles-I, Motion-I, Displacement-I, Shear-H, Drag-H, Soaking-H, Liquids-H, Fluids-H, Reynolds Number-H, Packings-H, Correlations-H, Air-A, Benzene-A, Hydrocarbons-A, Glycerin-E, Alcohols-E, Polyhydric Alcohols-E, Water-E, Heptane-E, Hydrocarbons-E, Beds-J, Packed-, Spheres-J, Glass-J, Beads-J, Packings-J.

Abstract: Experimental data have been obtained for drag coefficients on fluid bubbles rising in a saturated packed bed and in clear liquids. Air and benzene were used to form bubbles in glycerine solution, water, and normal heptane. One-inch diameter glass spheres in hexagonal, random, and cubic packings constituted the bed. The range in Reynolds numbers was from 0.1 to 1000. The results have been correlated using different diameters in the drag coefficient and in the Reynolds number.

Reference: Gorring, Robert L., and Donald L. Katz, **A.I.Ch.E. Journal, 8,** No. 1, p. 123 (March, 1962).

Key Words: Mixing-H, Flow-H, Fluid Flow-H, Fluids-I, Gases-I, Air-I, Carbon Dioxide-I, Oxides (Inorganic)-I, Ducts-J, Conduits-J, Orifice-J, Photography-J, Velocity-F, Position-F, Mixing-G, Parameters-, Diameter-F, Discharging-G, Coefficients-, Correlations-H, Orifice-1, Coefficients-.

Abstract: Instantaneous shadow photography is used to study the mixing of air flowing in a square duct with a secondary stream of carbon dioxide entering sidewise from an orifice. Mixing is described by four mixing parameters which are reported as functions of velocity and position parameters. Correlations for orifice discharge coefficients are also presented.

Reference: Miller, Eugene, and Kurt Wohl, **A.I.Ch.E. Journal, 8,** No. 1, p. 127 (March, 1962).

ERRATA

A factor of $\sqrt{2}$ was omitted from some of the constants in the velocity profile equations in "Turbulent Flow of Non-Newtonian Systems," by D. W. Dodge and A. B. Metzner, which appeared in the June, 1959, issue of the *A.I.Ch.E. Journal.* The corrected equations are as follows:

$$C_n = 0.4901\, A_n \left(1 + \frac{n}{2}\right) + \frac{B_n - P_n}{\sqrt{2}} \qquad (22)$$

$$u^+ = \frac{5.66}{(n')^{0.75}} \log y^+ - \frac{0.566}{(n')^{1.2}} + \frac{3.475}{(n')^{0.75}} \left[1.960 + 0.815n' - 1.628\, n' \log \left(3 + \frac{1}{n'}\right)\right] \qquad (48)$$

$$u^+ = 5.66 \log y^+ + 5.7 \qquad (49)$$

Figure 15 as published was based on the incorrect constants in Equation (48) and consequently is also in error.

In Equation (3) of "Multicomponent Diffusion Problems," by H. W. Hsu and R. B. Bird, which appeared in the September, 1960, issue of the *A.I.Ch.E. Journal,* ν_{AB} should be ν_{AC}. In the line after Equation (25), $\bar{x}_Q(\zeta)$ should not have an over bar. The fourth line of Equation (32) should be changed from $(s_e\, \nu_{PQ})^{-2}$ to $(s_e)^{-2}$. The equation after (34) should be numbered (35). In column 2, page 521, the second line of (ii) should read P, not xP; the second line of (iii) should read Q, not xQ. In Equations (56) and (59), Ξ_A should be $\Xi_A x_A$. In Equation (60), $(1 - \Xi_A x_{A0})/(1 - \Xi_A x_{A\delta})$ should be $(1 - \Xi_A x_{A\delta})/(1 - \Xi_A x_{A0})$. In Equation (66)

$$\left(1 - \frac{\beta}{x_{A0}(1 - p - q)}\right)$$

should be replaced by

$$\left(1 + \beta - \frac{\beta}{x_{A0}(1 - p - q)}\right).$$

The authors wish to thank Mr. Jer Ru Maa, Pennsylvania State University, State College, Pennsylvania, for pointing out these errors.

In the first line after Equation (2) of "Unsteady Multicomponent Diffusional Evaporation," by H. W. Hsu and R. B. Bird, which appeared in the December, 1960, issue of the *A.I.Ch.E. Journal,* flux^2 should be flux. The right-hand side of Equation (5) should read

$$= \mathcal{D}_{12} \frac{\partial^2 x_1}{\partial z^2} + \frac{\mathcal{D}_{12}}{1 - x_{10}} \frac{\partial x_1}{\partial z}\bigg|_{z=0} \frac{\partial x_1}{\partial z}.$$

$\mathcal{D}$ should be $\mathcal{D}_{12}$ in Equation (6). In the fourth line after Equation (7), (5) should be (4). In Equation (14), $\zeta \leqq 1$ should be $\zeta \geqq 1$.

The denominator on the left-hand side of Equation (5) of "Kinetics of Carbon Deposition in a Fluidized Bed," by Joseph H. Oxley, Arthur C. Secrest, Neil D. Veigel, and John M. Blocher, Jr., which appeared in the September, 1961, issue of the *A.I.Ch.E. Journal,* should be $n - 1$, and the second term on the right-hand side of Equation (8) should be $\frac{1}{2}\left(\frac{nx}{2}\right)^2$.

Computer Program Abstracts

Readers of the *A.I.Ch.E. Journal* who are interested in programming for machine computation of chemical engineering problems will find in each issue of *Chemical Engineering Progress* abstracts of programs submitted by companies in the chemical process industries. Collected by the Machine Computation Committee of the A.I.Ch.E., these programs will be published as manuals where sufficient interest is indicated. The following abstracts have appeared this year:

CEP (January, 1962) p. 90

Transient Heat Flow Program (089)
Time Series Components Analysis (092)

CEP (February, 1962) p. 96

Forecasting by Exponential Smoothing (088)
Computer Program for Enthalpy Tables (090)