

- Palyvos, J. A., "Drag Reduction and Associated Phenomena in Internal and External Liquid Flows," Rept. No. 741, Thermodynamics and Transport Phenomena Lab., Natl. Tech. Univ., Athens, Greece (1974).
- Patterson, G. K., J. L. Zakin, and J. M. Rodriguez, "Drag Reduction on Polymer Solutions, Soap Solutions and Solid Particle Suspensions in Pipe Flow," *Ind. Eng. Chem.*, **61**, 22 (1969).
- Seyer, F. A., and A. B. Metzner, "Turbulent Flow Properties of Viscoelastic Fluids," *Can. J. Chem. Eng.*, **45**, 121 (1967).
- Seyer, F. A., and A. B. Metzner, "Turbulence Phenomena in Drag Reducing Systems," *AIChE J.*, **15**, 426 (1969a).
- , "Drag Reduction in Large Tubes and the Behaviour of Annular Films of Drag Reducing Fluids," *Can. J. Chem. Eng.*, **47**, 525 (1969b).
- Shenoy, A. V., "Turbulent Flow Drag Reduction at Elevated Temperatures," M.Sc. Thesis, Univ. of Salford (1976).
- , "A Review of Drag Reduction with Special Reference to Micellar Systems," **262**, 319 (1984).
- Shenoy, A. V., and D. R. Saini, "A New Velocity Profile Model for Turbulent Pipe Flow of Power Law Fluids," *Can. J. Chem. Eng.*, **60**, 694 (1982).
- Stein, M. A., D. P. Kessler, and R. A. Greenkorn, "An Empirical Model for Velocity Profiles for Turbulent Flow in Smooth Pipes," *AIChE J.*, **26**, 308 (1980).
- Ting, R. Y., "Some Molecular Effects in Drag Reduction: A Summary," *Chem. Eng. Commun.*, **15**, 331 (1982).
- Virk, P. S., "Drag Reduction Fundamentals, Journal Review," *AIChE J.*, **21**, 625 (1975).
- Virk, P. S., E. W. Merrill, H. S. Mickley, and K. A. Smith, "The Toms Phenomenon: Turbulent Pipe Flow of Dilute Polymer Solutions," *J. Fluid. Mech.*, **30**, 305 (1982).

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ERRATA

• For the R&D note entitled "Analysis of Pressure Fluctuations in a Gas-Solid Fluidized Bed" (March, 1984) by L. T. Fan, S. Hiraoaka, and S. H. Shin, the following corrections are needed:

p. 347, col. 2, line 17 should read: " $\sqrt{(P_B)^2}$."

p. 347, col. 2, line 21 should read:

$$\sqrt{(P_B)^2} = \left(\frac{M_s}{2A} \right) (\bar{U}_0 - U_{mf}) \frac{1}{\sqrt{2\pi}}.$$

p. 347, col. 2, line 34 should read: " $\theta = s\bar{T}$."

p. 348, col. 1, lines 1 and 2 should read:

$$-\omega^2(1 - \cos\omega\bar{T}) + \left(\frac{2\bar{P}_c A^2}{v_c M_s} \right) = 0 \quad (27)$$

$$-\omega \sin\omega\bar{T} + \left(\frac{2n\bar{U}_0^{n-1} K_{DA}}{M_s} \right) = 0 \quad (28)$$

p. 348, col. 2, line 6 should read: "fluidized-bed fluctuations, the dimensionless parameters, θ' and."

p. 348, col. 2, lines 8 and 9, should read:

$$\theta' = \omega\bar{T} = 2\pi f \frac{L_{mf}}{\bar{U}_{br}}$$

$$\xi^2 = \frac{2\bar{P}_c A^2}{v_c M_s} \bar{T}^2 = \frac{2\bar{P}_c L_{mf}}{(v_c/A)\rho_{mf}\bar{U}_{br}^2} \quad (35)$$

p. 348, col. 2, lines 11 and 12 should read:

$$\theta'^2(1 - \cos\theta') - \xi^2 = 0 \quad (36)$$

$$2m\pi < \theta' < (2m+1)\pi, m = 0, 1, 2, \dots \quad (37)$$

p. 348, col. 2, line 30 should read: " $\theta' < \pi$ while small particles do in the range of $2\pi < \theta' < 3\pi$. Figure."

p. 349, col. 2, line 25 should read: "' = fluctuating component."

• For the "Optimum Pore Size for the Catalytic Conversion of Large Molecules" by E. Ruckenstein and M. C. Tsai (May, 1981): "The effective diffusion coefficient D_{eff} which includes the partition coefficient K_p " should be replaced in Eq. 6 by "the diffusion coefficient D_{eff}/K_p ." This changes Eq. 15 to $\lambda_{opt} = 0.46$.