p. 40 In the energy equation for spherical coordinates in Table 2-2,

\[ \frac{1}{r^2} \frac{\partial}{\partial r} \left( r^2 \frac{\partial T}{\partial r} \right) \quad \text{not} \quad \frac{1}{r^2} \frac{\partial}{\partial r} \left( \frac{\partial T}{\partial r} \right) . \]

p. 43 In last line of text, "b = p \hat{H}" should read "b = \rho \hat{H}.

p. 78 In Eq. (3.2-22), y should be Y.

p. 82 In Eq. (3.3-7), "Bi << 1" not "Bi >> 1."

p. 87 In Eq. (3.4-7), second equation, “\partial C/\partial x” not “\partial C/\partial X.”

p. 129 In Problem 3-22(b), Da = kT^2/D_A not kL^2/D_A.

p. 138 In Eq. (4.2-18), middle term of second line, change "\Theta_n" to "\Theta."

p. 162 In Eq. (4.5-73), \sin(n\pi y/b) should be \sin(m\pi y/b).

p. 163 In last line of Eq. (4.5-78), (n\pi)^2 should be (n\pi\alpha)^2.

p. 163 In Eq. (4.5-79), (m\pi)^2 should be (m\pi\beta)^2.

p. 163 Eq. (4.5-81) should read

\[ \frac{d^2 \Theta_{nm}}{dz^2} - \left[ \frac{n}{a} \right]^2 + \left[ \frac{m}{b} \right]^2 \pi^2 \Theta_{nm} = 0 . \]

p. 163 In Eq. (4.5-83), \Theta_n should be \Theta_{nm} (two places).

p. 164 Eq. (4.5-84) should read

\[ \Theta_{nm}(z) = \frac{2\sqrt{ab}}{nm\pi^2} \left[ 1 - (-1)^n \right] \frac{1 - (-1)^m}{\sinh \left\{ \left[ \frac{(n/a)^2 + (m/b)^2}{\pi c} \right]^{1/2} \right\}} \frac{\sinh \left\{ \left[ (n/a)^2 + (m/b)^2 \right]^{1/2} \pi c \right\}}{\sinh \left\{ \left[ (n/a)^2 + (m/b)^2 \right]^{1/2} \pi c \right\}} \]
p. 164  Eq. (4.5-85) should read

\[ \Theta(x,y,z) = \frac{16}{\pi^2} \sum_{n=1, n \text{ odd}}^{\infty} \sum_{m=1, m \text{ odd}}^{\infty} \frac{1}{nm} \sinh \left[ \left( \frac{n}{a} \right)^2 + \left( \frac{m}{b} \right)^2 \right]^{1/2} \pi \sin \left( \frac{n\pi x}{a} \right) \sin \left( \frac{m\pi y}{b} \right) \]

p. 185  In Eq. (4.8-59), bold “\( \nabla \).”

p. 188  In Eq. (4.9-17), add missing right-hand bracket in first exponential, so that it reads

\[ C(x,y,z,t) = \frac{m}{8(\pi D t)^{3/2}} \left[ e^{-\frac{\pi^2 z^2 + (2z-L)^2}{4Dt}} + e^{-\frac{\pi^2 z^2 + (2z+L)^2}{4Dt}} \right] \]

p. 222  In each equation of Table 5-1, the last term on the left-hand side should be of the form

\[ v_z \frac{\partial v}{\partial z}, \]  not \( v_z \frac{\partial v}{\partial t} \). There are several other errors in the last equation, which should read

\[ \rho \left[ \frac{\partial v_z}{\partial t} + v_x \frac{\partial v_z}{\partial x} + v_y \frac{\partial v_z}{\partial y} + v_z \frac{\partial v_z}{\partial z} \right] = \rho g_z - \frac{\partial P}{\partial z} + \left[ \frac{\partial \tau_{xz}}{\partial x} + \frac{\partial \tau_{yz}}{\partial y} + \frac{\partial \tau_{zz}}{\partial z} \right] . \]

p. 227  In Table 5-5 the expression for \( \tau_{\theta \theta} \) should read

\[ \tau_{\theta \theta} = \tau_{\theta \theta} = \mu \left[ r \frac{\partial}{\partial r} \left( \frac{v_\theta}{r} \right) + \frac{1}{r} \frac{\partial v_\theta}{\partial \theta} \right] . \]

p. 231  In Table 5-10, \( \Phi=(2\Gamma)^2 - (2/3)(\nabla \cdot \mathbf{v})^2 \), not \( \Phi=(2\Gamma)^2 \).

p. 234  In the text immediately above Eq. (5.7-7), change “Eq. (A.8-30)” to “Eq. (A.8-29).”

p. 236  In the text immediately above Eq. (5.7-11), change “Eq. (5.7-11)” to “Eq. (5.7-9).”

p. 237  Line 5, "Eq. (A.8-24)" not "Eq. (A.8-25)."
p. 242  Equation (5.9-13d) should be

\[ E^2 \psi = -(r \sin \theta) \psi . \]

p. 249  In the first line of Problem 5-2, part (b), delete "or axisymmetric." That is, the equation in part (b) is valid only for planar flows.

p. 250  In the equation in Problem 5-7(b), "dr/dt" not "d/dr."

p. 276  Replace last period by hyphen in labels of Eqs. (6.6-35), (6.6-38), and (6.6-39).

p. 296  In Eq. (7.3-10), "d/dr" not "d/dr."

p. 301  Include a minus sign on the right-hand side of Eq. (7.4-18), such that

\[ v_\theta(\theta) = -\frac{U}{(\pi^2/4)-1}\left[\frac{\pi}{2}\left(\frac{\pi}{2} - \theta\right)\sin \theta - \theta \cos \theta\right] . \]

p. 308  In Eq. (7.5-1), change bold to italic delta, so that last term reads \( \delta(r)F \).

p. 334  In Eq. (8.2-4), insert \( v \) so that the left side reads \( v \cdot (v \cdot \nabla v) \).

p. 338  Three lines above Eq. (8.2-20), "\( \partial \tilde{P} / \partial \tilde{y} \)" not "\( \partial \tilde{P} \partial \tilde{y} \)."

p. 338  One line below Eq. (8.2-20), "\( O(\tilde{\delta^2}) \)" not "\( O(\tilde{\delta}) \)."

p. 354  Line 11 of text: "Eq. (8.4-33)" not "Eq. (8.3-33)."

p. 360  Line 2, "Eq. (8.5-21)" not Eq. (8.5-22)."

p. 361  Eq. (8.5-28), first symbol in numerator should be "\( p \)" not "\( \rho \)."

p. 361  Three lines from bottom, add prime to last term in text equation, so that it reads

"(ff') = ff'' + (f')^2."

p. 362  Two lines below Eq. (8.5-41), "Eq. (8.5-41)" not "Eq. (8.5-40)."

p. 365  Problem 8-4(d), line 2, "separation" not "stagnation."
p. 366 Problem 8-6(a), insert minus sign in first equation, such that

\[
\psi(r, z) = -v_z F(\eta) .
\]

p. 368 The last differential equation in Problem 8-9(b) should read

\[
G'' - 2FG - HG' = 0 .
\]

p. 427 Equation (10.4-12) should be

\[
\frac{1}{k_{NO}^{(O)}} = \frac{1}{k_{NO}^{(L)}} + \frac{K_{NO}}{k_{NO}^{(G)}} .
\]

The text immediately below the equation should read:

"where $K_{NO}$ is the liquid-to-gas concentration ratio at equilibrium (0.047 at 23˚C).
Because the Péclet number is large..."

p. 427 The text below Eq. (10.4-15) should read:

"Together with the small value of $K_{NO}$, this indicates that the mass transfer resistance in the gas is negligible. Thus, the overall mass transfer coefficient essentially equals that in the liquid."

p. 486 In Eq. (12.3-3), $\eta \equiv y/H$ not $\eta \equiv y/W$.

p. 530 In the third line of Example 13.4-1, "(13.3-22)" not "(13.2-22)."

p. 535 Brackets are mismatched in Eq. (13.4-39): there should be a large square (not curved) bracket immediately to the left of the equals sign.

p. 546 The complete list of authors in the Sureshkumar reference is:

"Sureshkumar, R., R. A. Handler, and A. N. Beris."
p. 554 In Eq. (A.2-6), "t - t' = ..." not "t = t' = ..."

p. 565 In Eqs. (A.5-4) and (A.5-5), "dS" not "ds."

p. 566 In Eq. (A.5-10), "dV" should be in italics (two places).

p. 574 One line below Eq. (A.7-30c), “Eq. (A.7-30)” not “Eq. (A.6-30).”

p. 577 Change the last derivative in Eq. (2) of Table A-4, such that

\[ \nabla \cdot \mathbf{v} = \frac{1}{r^2} \frac{\partial}{\partial r} (r^2 v_r) + \frac{1}{r \sin \theta} \frac{\partial}{\partial \theta} (v_\theta \sin \theta) + \frac{1}{r \sin \theta} \frac{\partial v_\phi}{\partial \phi} . \]

p. 578 Insert \(\mathbf{e}_z\) at the end of Eq. (A.8-5), so that it reads

\[ \mathbf{B} = \frac{\partial \mathbf{r}}{\partial y} = (0) \mathbf{e}_x + (1) \mathbf{e}_y + \frac{\partial F}{\partial y} \mathbf{e}_z . \]
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Errata for Third and Fourth Printings

p. 129 In Problem 3-22(b), \( Da = \frac{k \delta^2}{D_A} \) not \( k L^2/D_A \).

p. 162 In Eq. (4.5-73), \( \sin(n \pi y / b) \) should be \( \sin(m \pi y / b) \).

p. 163 In last line of Eq. (4.5-78), \( (n \pi)^2 \) should be \( (n \pi/a)^2 \).

p. 163 In Eq. (4.5-79), \( (m \pi)^2 \) should be \( (m \pi/b)^2 \).

p. 163 Eq. (4.5-81) should read

\[
\frac{d^2 \Theta_{nm}}{dz^2} - \left[ \left( \frac{n}{a} \right)^2 + \left( \frac{m}{b} \right)^2 \right] \pi^2 \Theta_{nm} = 0 .
\]

p. 164 Eq. (4.5-84) should read

\[
\Theta_{nm}(z) = \frac{2 \sqrt{ab}}{nm \pi^2} \left[ 1 - (-1)^n \right] \left[ 1 - (-1)^m \right] \frac{\sinh \left[ \left( \frac{n}{a} \right)^2 + \left( \frac{m}{b} \right)^2 \right] \pi c}{\sinh \left[ \left( \frac{n}{a} \right)^2 + \left( \frac{m}{b} \right)^2 \right] \pi c}.
\]

p. 164 Eq. (4.5-85) should read

\[
\Theta(x, y, z) = \frac{16}{\pi^2} \sum_{n=1}^{\infty} \sum_{m=1}^{\infty} \frac{1}{nm} \cdot \frac{\sinh \left[ \left( \frac{n}{a} \right)^2 + \left( \frac{m}{b} \right)^2 \right] \pi c}{\sinh \left[ \left( \frac{n}{a} \right)^2 + \left( \frac{m}{b} \right)^2 \right] \pi c} \sin \left( \frac{n \pi x}{a} \right) \sin \left( \frac{m \pi y}{b} \right) \sin \left( \frac{n \pi z}{c} \right) \sin \left( \frac{m \pi z}{c} \right) .
\]

p. 188 In Eq. (4.9-17), add missing right-hand bracket in first exponential, so that it reads

\[
C(x, y, z, t) = \frac{m}{8(\pi D t)^{3/2}} \left[ e^{-\left( x^2 + y^2 + (z-L)^2 / 4 D t \right)} + e^{-\left( x^2 + y^2 + (z+L)^2 / 4 D t \right)} \right] .
\]

p. 231 In Table 5-10, \( \Phi = (2 \Gamma)^2 - (2/3)(\nabla \cdot \mathbf{v})^2 \), not \( \Phi = (2 \Gamma)^2 \).

p. 234 In the text immediately above Eq. (5.7-7), change “Eq. (A.8-30)” to “Eq. (A.8-29).”
p. 250 In the equation in Problem 5-7(b), “\(dr/dt\)” not “\(d\mathbf{r}/d\mathbf{r}.\)”

p. 276 Replace last period by hyphen in labels of Eqs. (6.6-35), (6.6-38), and (6.6-39).

p. 308 In Eq. (7.5-1), change bold to italic delta, so that last term reads \(\delta(\mathbf{r})\mathbf{F}\).

p. 334 In Eq. (8.2-4), insert \(\mathbf{v}\) so that the left side reads \(\mathbf{v} \cdot (\mathbf{v} \cdot \nabla \mathbf{v})\).

p. 338 Three lines above Eq. (8.2-20), “\(\partial \tilde{\mathbf{P}} / \partial \tilde{\mathbf{y}}\)” not “\(\partial \tilde{\mathbf{P}} \partial \tilde{\mathbf{y}}\).”

p. 338 One line below Eq. (8.2-20), “\(O(\tilde{\delta}^2)\)” not “\(O(\tilde{\delta})\).”

p. 360 Line 2, “Eq. (8.5-21)” not Eq. (8.5-22).”

p. 361 Eq. (8.5-28), first symbol in numerator should be “\(p\)” not “\(\rho\).”

p. 361 Three lines from bottom, add prime to last term in text equation, so that it reads

\[
\text{“}(f f')' = ff'' + (f'')^2.\]

p. 362 Two lines below Eq. (8.5-41), “Eq. (8.5-41)” not “Eq. (8.5-40).”

p. 365 Problem 8-4(d), line 2, “separation” not “stagnation.”

p. 366 Problem 8-6(a), insert minus sign in first equation, such that

\[
\psi(r, z) = -v_z p F(\eta).
\]

p. 530 In the third line of Example 13.4-1, “(13.3-22)” not “(13.2-22).”

p. 535 Brackets are mismatched in Eq. (13.4-39): there should be a large square (not curved) bracket immediately to the left of the equals sign.

p. 566 In Eq. (A.5-10), “dV” should be in italics (two places).

p. 574 One line below Eq. (A.7-30c), “Eq. (A.7-30)” not “Eq. (A.6-30).”

p. 578 The last term in Eq. (A.8-5) should read

\[
\frac{\partial F}{\partial y} \mathbf{e}_z \quad \text{not} \quad \frac{\partial F}{\partial y} \mathbf{e}_z. 
\]
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Errata for Fifth Printing

p. 129 In Problem 3-22(b), Da = kδ^2/D_A not kL^2/D_A.

p. 188 In Eq. (4.9-17), add missing right-hand bracket in first exponential, so that it reads

\[ C(x, y, z, t) = \frac{m}{8(\piDt)^{3/2}} \left[ e^{-\frac{(x^2 + y^2 + (z-L)^2)}{4Dt}} + e^{-\frac{(x^2 + y^2 + (z+L)^2)}{4Dt}} \right] \]

p. 231 In Table 5-10, Φ = (2Γ)^2 - (2/3)(∇·v)^2, not Φ = (2Γ)^2.

p. 234 In the text immediately above Eq. (5.7-7), change “Eq. (A.8-30)” to “Eq. (A.8-29).”

p. 308 In Eq. (7.5-1), change bold to italic delta, so that last term reads δ(r)F.

p. 334 In Eq. (8.2-4), insert v so that the left side reads v · (∇v).

p. 366 Problem 8-6(a), insert minus sign in first equation, such that

\[ ψ(r, z) = -νv^p F(η) \]