Modeling in Transport Phenomena: A Conceptual Approach
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Errata for Second Edition

p. 3 - Comment of Example 1.1
"blow" should be replaced by "blow up"

p. 11 - Problem 1.8
The answer should be
\[ Q = \frac{4}{3} \pi b^3 |\Delta P| \]

p. 27 - Example 2.4
In the first line after Eq. (4) replace "Leibnitz" by "Leibniz".

p. 123 - Eq. (5.3-12)
Equation should be written as
\[ \varepsilon = \frac{n_{io}}{(-\alpha_i)} X_i \]

p. 170 - Eq. (7) of Example 7.3
Equation should be written as
\[ n_A = \frac{Q_{in} c_A}{k} \left[ 1 - \exp(-kt) \right] \]

p. 172 - Part (a) of Example 7.4
Time should be
\[ t = \frac{3}{32} \frac{(1145)(0.02)^2}{(128)(5.17 \times 10^{-4})(8.25 \times 10^{-6})} = 78,647 \text{ s} = 21.8 \text{ h} \]

p. 206 - Answer to part (a) of Problem 7.19
The answer should be 14 min.

p. 330 - Eq. (9.2-34a)
Equation should be written as
\[ -k \frac{dT}{dr} = q_1 \]

p. 344 - Eq. (9.3-28)
Equation should be written as
\[ \dot{Q} = (\pi DL)(h) \left[ \frac{(T_w - T_{b_in}) - (T_w - T_{b_out})}{\ln \left( \frac{T_w - T_{b_in}}{T_w - T_{b_out}} \right)} \right] \]
p. 367 - Figure 9.19
Figure caption should read, "Variation in the bulk concentration of species $A$ with the axial direction for a constant wall mass flux."

p. 385 - Eq. (3) of Example 9.14
Equation should be written as
$$-k \int_0^t dt = \int_{n_{A_0}}^{n_A} \frac{dn_A}{n_A}$$

p. 405 - Problem 9.33
In the second line from the bottom, replace "heterogeneous" by "homogeneous", i.e., "As $B$ leaves the surface it decomposes by an isothermal first-order homogeneous reaction, $B \rightarrow A"."

p. 406 - Problem 9.33
In Eq. (9), the definition of the dimensionless distance, $\xi$, is missing:
$$\xi = \frac{z}{\delta}$$

p. 446 - Figure 10.6
The concentration distribution for the case of $Bi_M > 40$ should be as follows:

p. 472 - Problem 10.7
The unit of $\hat{C}_p$ should be
$$\hat{C}_p = 840 \text{ J/kg.K}$$

p. 489 - Eqs. (11.1-56) and (11.1-57)
Equations should be written as
$$\langle v_z \rangle = \frac{(P_o - P_L)R^2}{8\mu L} \left[ 1 - \exp \left( - \frac{8\nu t}{R^2} \right) \right]$$  \hspace{1cm} (11.1-56)
\[ Q = \frac{\pi(P_o - P_L)R^4}{8\mu L} \left[ 1 - \exp(-8\tau) \right] \]  

(11.1-57)

**p. 526 - Title of Section A.4**
Replace "LEIBNITZ’S RULE" by "THE LEIBNIZ FORMULA".

**p. 532 - Eq. (A.6-10)**
The equation should be written as
\[
a = \frac{N (\Sigma_i x_i y_i) - (\Sigma_i x_i)(\Sigma_i y_i)}{N (\Sigma_i x_i^2) - (\Sigma_i x_i)^2}
\]

**p. 556 - References**
Replace "T.S. Sherwood" by "T.K. Sherwood".

**p. 587 - Eq. (B.3-71)**
Equation should be written as
\[
\eta = \frac{x}{2\sqrt{vt}}
\]