Updates

The following are typographical errors that have been found after the book was printed, but before the CD-ROM was manufactured. Please check the following website for additional typographical errors.

http://www.engin.umich.edu/~cre

TABLE OF CONTENTS
1) page xi: 8.5.3 Operating Conditions should read 8.5.4 Operating Conditions

CHAPTER 2
1) page 52: \( F_{A0} \) is missing in the equation just above Eqn. (E2-6.2)

Should read: \( V_2 = F_{A0} \int_{0}^{0.8} \frac{dX}{-r_A} \)

CHAPTER 4
1) page 128: Figure 4-2. There are four typos:
   a) Half way down the figure the subzeros are miss placed on \( P \) and \( T \).

   Should read: \( \nu = v_0 (1 + \epsilon X) \frac{P_0}{P} \frac{T}{T_0} \) and \( V = V_0 (1 + \epsilon X) \frac{P_0}{P} \frac{T}{T_0} \)

   b) Change 3 to 4, i.e. 3. COMBINE Should read: 4. COMBINE

   c) Equal sign missing. Should read: \( y = \frac{P}{P_0} \)

   d) Last equation in the figure, there is an unwanted \( X \) before the \( [\ln(\cdot) \) term.

   Should read: \( V = \frac{v_0}{k} \left[ \frac{P}{P_0} \right] (1 + \epsilon X) \ln \left[ \frac{1}{1 - X} \right] - \epsilon X \right] \)

2) page 177:
   a) Eqn. (2-20). Delete minum signs on \( c \) and \( d \)

   Should read: \( \frac{r_A}{-a} = \frac{r_B}{-b} = \frac{r_C}{c} = \frac{r_D}{d} \)

   b) Table 4-5
      1) Batch reactor balance on B
         \( C_A \) should be \( C_B \), i.e. should read
         \( \frac{dC_B}{dt} = \frac{a}{b} r_A \)
      2) The left hand side of the PFR and PBR mole balances should be multiplied by \( v_0 \), e.g. should read
         PFR \( \quad v_0 \frac{dC_A}{dV} = r_A \) and \( v_0 \frac{dC_B}{dV} = \frac{b}{a} r_A \)
         PBR \( \quad v_0 \frac{dC_A}{dW} = r_A \) and \( v_0 \frac{dC_B}{dW} = \frac{b}{a} r_A \)
3) page 195: Delete the V on the left hand side of Eqn. (4-65).

\[ -r_A = k \left( C_A C_B - \frac{C_C C_D}{K_C} \right) \]

4) page 219: Problem P4-31, change parameter values for \( K_C \) and \( k_{CB} \). Should read:

\[ K_C = 0.01 \text{ mol}^2/\text{dm}^6 \]
\[ k_{CB} = 40 \text{ min}^{-1} \]

CHAPTER 6

1) page 327: Problem 6-13, part (b), Answers should read:

\[ (\text{Ans.}: C_A = 0.61, C_B = 0.79, C_F = 0.25, C_D = 0.45) \]

CHAPTER 13

1) page 838: The last line just above Figure 13-13 the words early and late are reversed. It should read “The extremes of late and early mixing are referred to as complete segregation and maximum mixedness respectively.”

2) page 852: Eqn. (13-71) “−” missing on right hand side. Should read \( \frac{dX}{dt} = -\frac{r_A}{C_{A0}} \)

3) page 853: Eqn. (E13-8.4) replace the second term for \( E_2 \), \(+ 1.180 \text{ e}^{-6} \lambda^2\) with \(+ 1.3618 \text{ e}^{-6} \lambda^2\) The POLYMATH program is correct!

CHAPTER 14

1) page 888: Eqn. (14-36) Change “+” to “−” in the term \( + \frac{kC_A}{U} \)

\[ \text{Should read: } \frac{Da}{U} \frac{d^2C_A}{dz^2} - \frac{dC_A}{dz} - \frac{kC_A}{U} = 0 \]

2) page 910: Problem 14-2(e), \( s = 0.01 \text{ cm}^2/\text{s} \) should read:: \( \mu = 0.01 \text{ cm}^2/\text{s} \)