Unit 13 - Week 11: Vapour - Liquid Equilibria of Multicomponent Non-ideal Systems

Assessment 11

Due on 2020-01-31, 23:59 GMT

1. Consider a system where you expect two liquid phases existing with equal molar fractions. The vapour phase mole fraction is represented by $x_v$. Evaluate the equilibrium equations for the two liquid phases existing in a temperature-controlled system by solving the following equations:

$$y_1 = x_v = x_1$$
$$y_2 = x_v = x_2$$

2. Solve the system of equations graphically or algebraically to determine the mole fractions of each phase.

3. Consider a system where you expect two liquid phases existing with equal molar fractions. The vapour phase mole fraction is represented by $x_v$. Evaluate the equilibrium equations for the two liquid phases existing in a temperature-controlled system by solving the following equations:

$$y_1 = x_v = x_1$$
$$y_2 = x_v = x_2$$

4. Solve the system of equations graphically or algebraically to determine the mole fractions of each phase.

5. Consider a system where you expect two liquid phases existing with equal molar fractions. The vapour phase mole fraction is represented by $x_v$. Evaluate the equilibrium equations for the two liquid phases existing in a temperature-controlled system by solving the following equations:

$$y_1 = x_v = x_1$$
$$y_2 = x_v = x_2$$

6. Solve the system of equations graphically or algebraically to determine the mole fractions of each phase.

7. Consider a system where you expect two liquid phases existing with equal molar fractions. The vapour phase mole fraction is represented by $x_v$. Evaluate the equilibrium equations for the two liquid phases existing in a temperature-controlled system by solving the following equations:

$$y_1 = x_v = x_1$$
$$y_2 = x_v = x_2$$

8. Solve the system of equations graphically or algebraically to determine the mole fractions of each phase.