

## CHAPTER III

### EXPERIMENTAL AND METHODOLOGY

#### 3.1 Materials

##### Software:

1. Process simulation software for industrial application (Pro/II)
2. General Algebraic Modeling System (GAMS)
3. Microsoft Excel 2007

#### 3.2 Experimental Procedures

##### 3.2.1 Simulating Data of Heat Exchanger Systems

This task involves simulating measured data with errors for a hot-oil heat exchanger and utility heat exchanger network by using Microsoft Excel 2007.

##### 3.2.2 Data Reconciliation and Gross Error Detection Technique

1. Studying data reconciliation and gross error detection concept.
2. Developing data reconciliation model and gross error detection technique by using GAMS program.
3. Simulating data reconciliation and gross error detection by using GAMS program and Microsoft Excel 2007.