

## **CHAPTER III**

### **RESEARCH METHODOLOGY**

This chapter explains the research methodology and the steps in conducting this research. This chapter consists of some sub chapters which are explain about object of research, problem formulation, research framework, data collection, product development, and product application. All sub chapters will be explained details as follows:

#### **3.1 Research Object**

This research conducted in PT. XYZ in Jakarta. The object of this research is a welding electrode for welding machine which is a part of Continuous Galvanizing Line Machine as explained above. The data and information conducted in PT XYZ during the research are:

1. The general information of PT XYZ
2. Continuous Galvanizing Line machine flow process
3. Limited Over-Lap Seam Welding machine flow process
4. Parameter and standard in Limited Over-Lap Seam Welding Machine
5. Welding electrode properties.

### **3.2 Identification and Problem Statement**

This process is being done to formulate the problem which is to develop a domestic welding electrode to replace import welding electrode that has some inefficiency which already being explained and stated in background of the problem.

### **3.3 Data Collection**

The data to support this research gathered in 5 ways:

1. Consultation with supervisor about research focus.
2. Field study by doing direct observation in Continuous Galvanizing Line machine and welding activity in Seam Welding machine.
3. Get statistical and primary data in the company by doing some testing and analysis in the company facility.
4. Interviews with the employees in the company about process and activity related to this research.
5. Data from Metal Industries Development Centre (MIDC) in Bandung about electrode properties and micro structure photograph.

### **3.4 Data Processing**

All data and information gathered in the research will be processed and analyzed in order to develop the domestic welding electrode to replace the import welding electrode in Seam Welding machine.

### 3.5 Research Result Analysis

The result from data processing will be discussed and analyzed in order to achieve the research objective.



### 3.6 Research Framework

The steps to conduct this research are as follow:

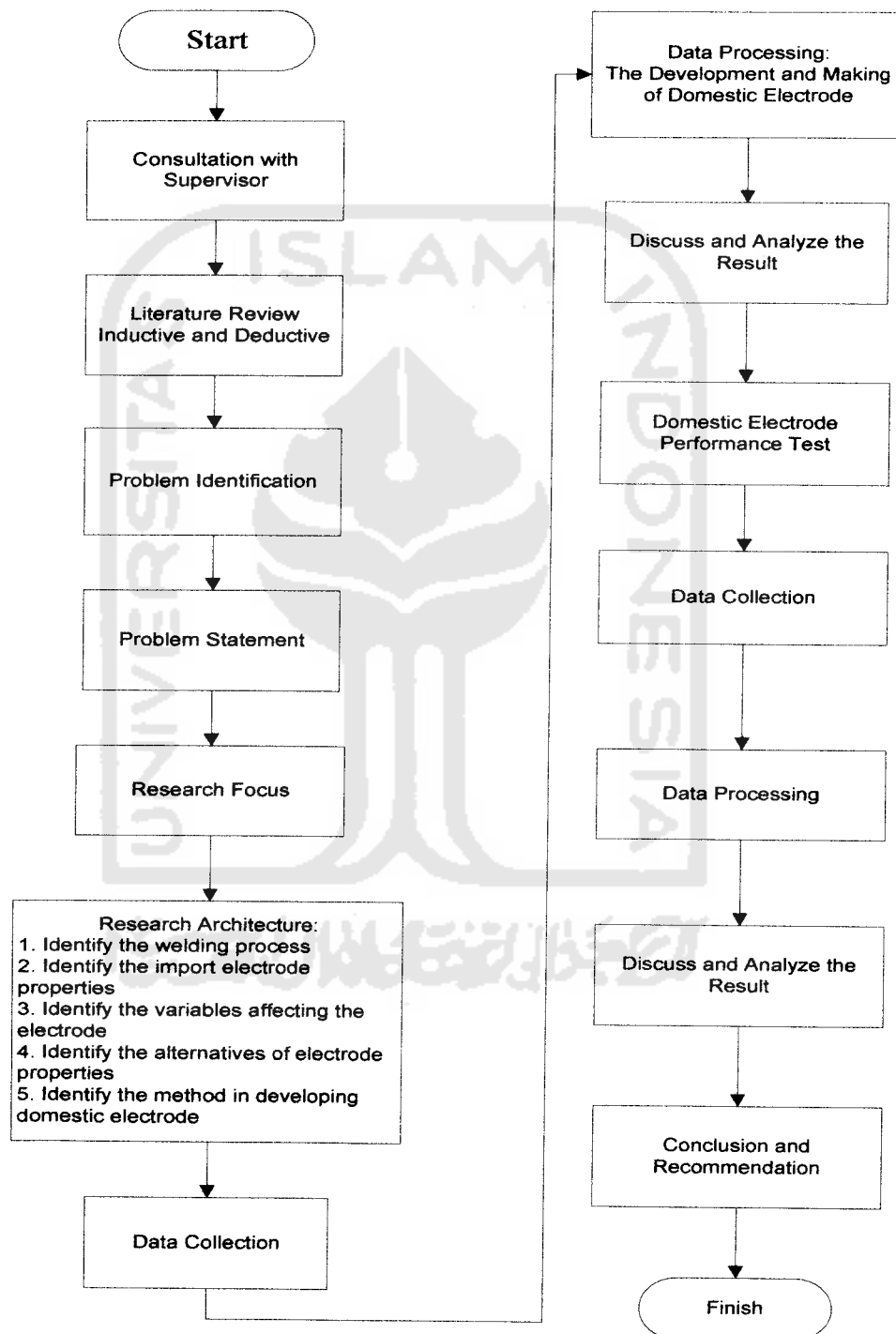


Figure 3.1 Research Framework