

## **ABSTRACT**

**Syahrir Abdussamad**, *An Automatic Electricity Bill Estimation System for Home Application* (supervised by **Salama Manjang** and **Rhiza S. Sadjad**).

This is a design project to develop an automatic system to estimate the monthly electricity bill of a small home (450 Watt) application. The system includes a digital kWh-meter in the design.

The experimental test has shown that the measurement of the current by a current sensor should be multiplied by a factor of 0.35 to minimize the error. A standard conventional analog kWh-meter has been used as the reference. For resistive load such as regular (carbon) light bulbs, the error of the digital kWh-meter is 0.3229% in average resulting the error of the cost estimation as low as 0.0008%. In the case of inductive loads such as TL fluorescence lamps, water pumps, etc, the error is even smaller, only 0.0944% for the digital kWh-meter and 0.0005% for the cost estimation. The insignificantly small error of the system has proven that the electricity bill estimation using this system is highly accurate.