

## **ABSTRACT**

Indonesia is one of country that famous for their food products, both agricultural and plantation sector. With such a large natural resources, we should be able to maximize the potential to become the biggest exporter of food production. In 2015 we will face the Asia free market, which bring us the disadvantage side. We should be able to find a way to bring our products can be accepted in the Asian market. And the potential market is food processing included dried food products.

This final project is talk about solar tunnel dryer. With solar cell as a primary supply. By utilizing abundant sunlight and free, this solar tunnel dryer can be good alternative for farmers to increase value of their products. The solar cell converts solar energy into electrical energy, which will be stored in the battery. And we use microcontroller as a data processing center and also fuzzy logic. Where the fuzzy control design methodology which consist of understanding the plant system to be controlled, the identification of input/output, the determination of membership functions and fuzzy if-then rules. With using fuzzy logic we expected the output more better and fit with parameters temperature and humidity sensors SHT11 and will be actualized by the heater / fan.

The expectation of this machine is the output will be able to meet the initial parameters, to get a good quality of dry food with 50°C of temperature and 20% of humidity.

**Keywords : solar cell, battery, fuzzy logic, if then rules**