

# ***DESIGN AND BUILD A SWITCHING MODE POWER SUPPLY WITH VARIATIONS IN THE SECONDARY WINDING OF THE TRANSFORMER FOR THE ELECTROPLATING PROCESS***

**Moh. Kholil**

*Study Program of Automotive Engineering  
Engineering Departement*

## **ABSTRACT**

*At this time the conventional or linear power supply is no longer relevant in electronic devices and recently a switching mode power supply (SMPS) has been developed. switching mode power supply (SMPS) is a power supply that uses MOSFET as a switch connected to a ferrite transformer. This study aims to determine the effect of wire diameter 0.40 and 0.45 mm with 4, 6, and 8 coils duplicated 5 simultaneously on the secondary part, as well as to determine the effect of voltage and current strength on the electroplating process. Testing the SMPS power supply by performing the electroplating process for 20 minutes with iron specimens and nickel plating materials. In this study obtained good results using a 0.40 mm diameter wire with 4, 6, and 8 coils. The results of the SMPS power supply research with 4, 6, and 8 coils on the voltage output did not experience a significant increase which ranged from 8.8 V. While the output current strength on the wire with 4, 6, and 8 coils. While the output current strength on the 0.40 mm diameter wire increased 0.759 A, 5.038 A and the highest 5.424 as the number of turns, but at 0.45 mm decreased 4.366 A, 1.396 A, and the lowest 1.069 A as the number of turns. For the results of electroplating, good results were obtained by adding weight to the specimen using a 0.40 mm diameter wire with 6 windings.*

**Keywords:** *Switching Mode Power Supply, Transformer, Electroplating.*