

***DESIGN AND CONSTRUCTION OF SPOT WELDING 12 VOLT DC
(WITH MILITARY SECOND CONTROL)
BASED ON ARDUINO***

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ABSTRACT

Lithium batteries are a type of battery that is widely used today for electronic needs. During the welding process the place creates excessive temperatures. Therefore, this final project will be aimed at optimizing spot welding press time which is controlled using an Arduino Uno and controlling pressure using a spring, using time and thickness variations of 0.1mm/25ms, 0.15mm/45ms, and 0.2mm. /85ms to determine the effect of increasing welding ability. The method used in this research is the design method. The design and construction of this research was carried out sequentially starting from planning, modeling, assembling and testing the tool through tensile testing and microphotographs of the specimen. The highest UTS (Ultimate Tensile Strength) was obtained from a 0.15mm plate with a time of 45ms, namely 202.66 N/mm² first repetition, 142.2 N/mm² second repetition, 166.71 N/mm² third repetition. and the plate tested did not tear, whereas the 0.1 mm plate obtained results with an average of 187.95 N/mm² and resulted in the plate tearing during the tensile test. The greater the time given, the greater the tensile strength of the welding joint, resulting in a wider welding area and HAZ area.

Keywords: Lithium battery, spot welding, Arduino, tensile test, micro photo