

***ANALYSIS AND DESIGN OF AUTOMATIC SOLAR WATER
HEATER FOR HOT WATER SUPPLY BASED ON
MICROCONTROLLER ARDUINO MEGA 2560***

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ABSTRACT

The more rapid technological progress, the industrial world is needed to make significant progress in all fields to support productivity itself, both in terms of human resources, equipment, production, and others. One of the supporting tools for productivity is a water heater that uses solar power. So the authors want to design a design and analysis tool for automatic solar water heater for hot water supply based on the Arduino Mega 2560 microcontroller. This control system uses the Arduino Mega 2560 microcontroller. When the start button is pressed, the incoming data will be read by Arduino as the control center. The signal given from Arduino is sent to the relay to give command to run the component. This control system can be run manually. In testing the solar panel, the greater the sun's rays on the solar cell, the greater the voltage on the solar cell. If the temperature on the water heater is high, the heat contained by the water is very large, and vice versa, if the temperature is low, the heat contained is little. From the results of testing and analysis carried out on the system, the accuracy rate of the equipment system is 95 %.

Keywords - *Arduino, relay, solar cell, water heater.*