DESIGN OF BUCK-BOOST CONVERTER ON SOLAR PANELS USING CONTROL METHOD PI AND PID BASED MIKROCONTROLER ATMEGA 8535

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Abstract
Solar energy is an alternative source of renewable energy for power generation, solar energy can concatenated into electrical energy using photovoltaic photovoltaic. Electrical energy generated by depending on temperature and radiation from the sun so Photovoltaic has an average maximum level of energy during the day. There are many methods how to maximize the use of solar panels, but there is an electronic circuit that is most important in maximizing the solar panel namely Converter is a Buck - Boost Converter. Buck - Boost Converter is an electronic circuit that can raise and lower the value of the output voltage, the control method used is the Proportional Integral Derivative (PID) which aims to improve the performance of a system, including the control system voltage, speed response and steady state error is measured parameter to assess the performance of a system control with using trial and error methods of control constants Kp, Ti, Td respectively for Kp = 5, Ki = 0.56, Td = 0.03 with a steady state error of 1 volt. Efficiency obtained from the buck-boost with the PI control is 9.5%. Buck-boost efficiency is gained from this PID control system is 8.7

Keyword: error steady state, PC, PID, Trial and error
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