

## VOLTAGE REGULATION CONTROL FOR PV SYSTEMS USING PI AND FUZZY LOGIC CONTROLLERS

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Solar energy maintains life on the earth and it is an infinite source of clean energy. There is an increasing trend for the use of solar cells in industry and domestic appliances because solar energy is expected to play significant role in future smart grids as a distributed renewable source. But the PV system is a highly non-linear source and its output characteristics depend on the solar insolation and cell temperature. The aim of this paper is to design for the DC/DC Buck converter a controller that ensures both stability of the system and guarantees an almost constant output voltage in spite of the perturbations in the input voltage and output load current. For the PV system voltage regulation, a PI and adaptive Fuzzy controllers have been implemented. The control law presented in the project show stabilized regulation of the output voltage thereby reducing the transients and tracking of the set point value.

