DESIGN OF SINGLE PHASE LOW SPEED PERMANENT MAGNET GENERATOR EXTERNAL-INTERNAL ROTOR (N-S) RADIAL FLUX TYPE

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ABSTRACT

The need for electrical energy is very important in every aspect of human life. The continuous use of fossil fuels as a source of electricity generation causes depletion of petroleum reserves and pollutes the environment. To meet the increasing demand for electrical energy, alternative renewable and environmentally friendly power plants are needed. Generators with permanent magnets are an alternative because they do not cause pollution. This research discusses a radial flux type low-speed permanent magnet generator with an external-internal rotor (N-S). The magnets used are neodymium type N52 as many as 24 pieces with dimensions of 20 mm x 10 mm x 5 mm. Tests are carried out without load and load. Testing without load with a generator rotating speed of 250 RPM and 500 RPM produces a voltage of 12,6 Volts and 24,9 Volts. Testing with a 3 Watt load with a generator rotating speed of 250 RPM and 500 RPM produced a voltage of 13,1 Volts and 24,4 Volts. Testing with a 5 Watt load with a generator rotating speed of 250 RPM and 500 RPM produced a voltage of 12,5 Volts and 25 Volts. Testing with a 7 Watt load with a generator rotating speed of 250 RPM and 500 RPM produced a voltage of 12,7 Volts and 24,9 Volts.

Keywords: *Generator, Permanent Magnet, Low Speed, Radial Flux, Ekternal-Internal Rotor*