

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

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Abstract

Electrical energy is an important component in human life and the need for electrical energy continues to increase with technological advances. This research will design and manufacture a single-phase low-speed permanent magnet generator external-internal rotor (N-N) radial flux type as an alternative source of electrical energy that is environmentally friendly that can meet the electrical energy needs of remote areas that have not yet been electrified and can reduce fuel use. fossils as a source of electrical energy. This generator is a permanent magnet radial flux type using 21 N52 neodymium magnets with dimensions of 20 mm x 10 mm x 5 mm, designed at a low speed of ≤ 500 RPM with a generated voltage of 33 V. Measurement results for generator 2 with a generator rotating speed of 500 RPM produces a voltage of 35 V without load, while a load of 3 watts produces a voltage of 32 V, a current of 26 mA and a power of 0.832 watts, then a load of 5 watts produces a voltage of 35.1 V, a current of 0.2 mA and a power of 0.01 watts, when load of 7 watts produces a voltage of 34.5 V, a current of 0.2 mA, and a power of 0.007 watts. The generator can work well because at low speed it can produce a voltage of 35 V, so that it can be used as a component of a power plant.

Keywords: *Permanent magnet generator, radial flux, external-internal (N-N) type.*