

ABSTRACT

This research is devoted to study the design, fabrication and characterization of linear tubular generator 3 phase. This research began by created the design and simulation to find output voltage of the 3-phase Tubular linear Generator. The Divais consist of stator and rotor parts. Stator consists of 3 coil that are wrapped by 380 coil with the diameter of coil 0.3 mm. The Rotor consists of slider, core and 5 magnets. The result of the simulation with a frequency of 13,7 Hz produced 3.6 Vpp of output voltage while at a frequency of 17.2 Hz produced 4 Vpp of voltage. After the simulation, the 3 phase tubular linear generator device was fabricated and characterized. Characterization of the device carried out in two ways, it was characterization without cantilever and with cantilever. Characterization without cantilever has 17,2 Hz of resonance frequency. At resonance frequency coil 1 produced output voltage was 0.625 Vrms, coil 2 produced 0.633 Vrms and coil 3 produced 0.412 Vrms. Characterization with cantilever has 13.7 Hz of resonance frequency and the output voltage was 1.44 Vrms on coil 1, coil 2 produced 1.45 Vrms and coil 3 produced 1.25 Vms.

Keywords: *Tubular linear generators, resonance frequency*