MULTISIM SIMULATION AND IMPLEMENTATION OF CHAOTIC CIRCUIT

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CERTIFICATE

It is certified that **Mr. ARUN KUMAR SHARMA**, student of M.E, Control and Instrumentation, Department of Electrical Engineering, Delhi College of Engineering, has submitted the dissertation entitled **"Multisim simulation and implementation of chaotic circuit''** under our guidance towards partial fulfillment of the requirements for the award of the degree of Master of Engineering (Control & Instrumentation Engineering).

This dissertation is a bonafide record of project work carried out by him under our guidance and supervision. His work is found to be outstanding and has not been done earlier.

I wish him success in all his endeavors.

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ABSTRACT

The linear system gives the inadequate information about the characteristic of sustained oscillation. We will take the linear concepts and simple harmonic motion to nonlinear concept and chaos. In order to exhibit chaos, an autonomous circuit consisting of resistors, capacitors, and inductors must contain i) at least one nonlinear element ii) at least one locally active resistor and iii) at least three energy storage elements.

Chua circuit is the simplest electronic circuit that satisfies these boundations. In addition, this remarkable circuit is the only physical system for which the presence of chaos has been proved mathematically.

Here we are going to represent the chaotic circuit with different simulation of inductors i.e. inductor replaced by Op-amp, by GIC, by OTA. After it the different patterns are formed which represents chaos, in every circuit voltage Vs time characteristics, V_1 Vs V_2 characteristics and inductor characteristics in MULTISIM software are depicted.

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