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Date of Joining: 19-09-2020

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Laboratory: Communication Engineering Lab, Basic Electronics Engineering Lab

Area of Research: Semiconductor Devices, Nonlinear electronic circuits

Summary: Nonlinear electronic circuits are modeled using the nonlinear and chaotic dynamics of physical, biological systems. All naturally occurring systems in nature are nonlinear systems; for example motion of planets, growth of population etc. I have been designing nonlinear electronic circuits which emulate the dynamics of these systems because they show interesting dynamical behavior like saddle node bifurcation, mixed mode oscillations and chaos. These dynamics can be used for encoding of data and even design communication systems which are not based on sinusoidal signals.

Experimental setup: For testing the dynamical behavior of nonlinear circuits following laboratory equipments are required:

1. 3 MHZ Function Generator for providing driving fields
2. 100 MHZ Digital Storage oscilloscopes for viewing the dynamics of the system.