Development of Virtual Experiment on Transistors Characteristics Using Virtual Intelligent Soft lab for Virtual Learning Environment

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ABSTRACT

The scope of this paper includes development and implementation of virtual lab for Transistors Characteristics. The study of Transistors Characteristics is important in Electronics, Computer Science and Engineering. The Transistors Characteristics experiment can be performed by using the concept of virtual Intelligent SoftLab (VIS). The virtual experiment described here will help students to perform virtual experiments anywhere and anytime anywhere. The screen shows the Characteristics of Transistor and shows related outputs. VIS gives us a facility to change of Input values using virtual instruments and observed the outputs. In this paper we check the input output characteristics of Field Effect Transistor (FET), Bipolar Junction Transistor (BJT) and Uni-Junction Transistor (UJT). The effect of Transistors Characteristics is visible on the screen.

Keywords

SoftLab, Transistor Characteristics, UJT, BJT, FET, Virtual Lab etc.

1. Introduction

The basic concept of VIS (Virtual Intelligent SoftLab) Model is to provide a virtual platform for learners to perform the experiment with their own selection. The Virtual experiments are designed in such a manner as to give a real feel of performing the experiment. During the experiment, the learner can store and edit the desired data for his/her analysis. Apart from these the focus is aims to embed a maximum number of learning components in virtual experiments. Virtualizations of experiments could be broadly classified, based on the data used for performing the experiment. The Soft Lab philosophy provides us to link the physical laboratory experiment with its theoretical simulation model with interactive environment. The goal for each instance of a SoftLab laboratory is to create a software environment where experimental research and interact with each other. In SoftLab project, we have elaborated the various issues involved in the design and development of SoftLab model for Electronics, Computer science and engineering. VIS model describes how the SoftLab philosophy was used to design and implements. The VIS forces us to challenge of solving experiments. The SoftLab framework should provide the infrastructure that serves the needs for basic research.

SoftLab is such a flexible laboratory environment. Its goal is to simulate a laboratory space having a well-equipped instruments and a variety of materials. Using SoftLab students may be learned from an instructor to perform an experiment. The student may study, take out the instruments he needs, connect them together, make his