ANIMATION AND SIMULATION IN POWER ELECTRONICS ENGINEERING

MUKUND G. WANI AND VIJAY N. GOHOKAR

Abstract

Multimedia and Simulation/Animation technologies in the classroom make studying more attractive to students. It also makes teaching much easier. Especially in engineering classes, complex technical problems should be presented in a way that is easy to follow and understand. Animation during simulation opens up new possibilities for teachers and students. It enables students to actively participate in the learning process. Here, interactive animation might help a lot - its utilization in simulation enables to create an interactive training environment because the user can see the level of the node-voltages, the level of the branch currents and most important he can see the current flowing through the circuit and can under stood the actual working of the circuit. Use of Simulation and Animation software's in Projects also plays an important role for complicated circuits. Complicated circuits can be tested first then actual circuit fabrication can be done which saves a lot of time for the students. In this paper a more emphasize on new efforts in the modernization of the basic undergraduate courses and a graduate curriculum in various streams of engineering e.g. Power Electronics, Mechanical Engineering, Computer Engineering, Civil Engineering etc. is highlighted. The main focus of the paper is the modernization of the way power engineering is portrayed to students. The motivation is the recognition of the new deregulated and restructured environment in power engineering and the broadening of the area in general. At the undergraduate level, a multimedia approach is described in which renovation of the curriculum is done in such a way as to allow broadening of the subject material. Important demands for education are visualization of the simulation results as well as an open interface to exchange data from one simulation package to another simulation package. Examples of power electronic and electrical drive animations are given, which show the advantage of animation.

Keywords: power electronics; energy conversion**;** simulation, modeling, animation, visualization,