

Study, Modelling, Simulation and Analysis of High Voltage Power Supply

Abstract

High-energy particle accelerators are modulated by High Voltages Power Supplies (HVPS). Certain devices like Neutral Beam, Radio Frequency require high power in range of megawatts through DC high Voltage. Typical example is a 5 MW Neutral Beam Injector system at IPR essentially require 55 kV HVDC source. The new age particle accelerators may require millions of volts for atomic particle acceleration. To meet the demand, modular high voltage power supplies are best suited based upon the facts that these are easy to maintain, well-controlled, regulated, can have sharp rise and fall time and possess better serviceability. Pulse step modulation (PSM) technique is used in HVPS. IPR has developed many such HVPS which are being used since long time.

This project is aimed for detailed study of HVPS. PSIM Modelling, simulation and analysis of results of a scaled model of HVPS.

Academic Project Requirements:

- 1) Required No. of student(s) for academic project: 1**
- 2) Name of course with branch/discipline: B.E./B.Tech. Electrical**
- 3) Academic Project duration:**
 - (a) Total academic project duration: 6 Weeks**
 - (b) Student's presence at IPR for academic project work: 5 Full working Days per week**

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