

## X-ray Technological Simulator

J.-Y. Chang<sup>1</sup>, Y.-L. Chiu<sup>2</sup>, & K.-S. Chang<sup>2</sup>

1. Department of Medicine, National Cheng Kung University, Tainan, Taiwan, R.O.C.
2. Institute of Biomedical Engineering, National Cheng Kung University, Tainan, Taiwan, R.O.C.

### ABSTRACT

In this paper, the principle and technology of vacuum tube was employed for design and implement an X-ray technological simulator. The controlling circuit of this simulator is similar to that used in conventional X-ray machine. Therefore, it is very helpful and useful in the training of areas such as radiological technique, radiological techniques, radiological equipments, radiological physics in medicine, and radiological monitoring.

In addition, with the appropriate software and hardware design of micro-computer, it also could be easily modified to be a radiological monitoring system for detecting the amount of X-ray pre-exposure of patients so as to prevent patients from X-ray over-exposure against to the rule of ARALA proposed by I.C.R.P. committee.

Finally, all the suggestions and comments are indeed welcome and appreciated for improving this system. And we sincere hope that the cooperation between the medical and engineering researchers will make a great progress of the biomedical engineering, and promote the health care industry in our country.