

## **HARDWARE IMPLEMENTATION OF MULTIPLE FAN BEAM PROJECTION TECHNIQUE IN OPTICAL FIBRE PROCESS TOMOGRAPHY**

### **Abstract:**

The main objective of this project is to implement the multiple fan beam projection technique using optical fibre sensors with the aim to achieve a high data acquisition rate. Multiple fan beam projection technique here is defined as allowing more than one emitter to transmit light at the same time using the switch-mode fan beam method. For the thirty-two pairs of sensors used, the 2-projection technique and 4-projection technique are being investigated. Sixteen sets of projections will complete one frame of light emission for the 2-projection technique while eight sets of projection will complete one frame of light emission for the 4-projection technique. In order to facilitate data acquisition process, PIC microcontroller and the sample and hold circuit are being used. This paper summarizes the hardware configuration and design for this project.