Abhijit V. Patil, Glottal pitch extractor**,** M. Tech. Thesis, Department of Electrical Engineering, Indian Institute of Technology Bombay, 2000.

Supervisor(s): P. C. Pandey

Abstract **-** Electroglottography (EGG) is a non-invasive technique for measuring impedance variation across the thyroid cartilage of the larynx. This impedance variation, sensed by a pair of electrodes, provides information about the dynamics of the closure of vocal folds. Signal related to the impedance variation, known as Lx waveform, is useful for estimation of voice pitch, diagnosis of voice disorders, and as a speech training aid for the hearing impaired. An instrument is designed in which a high frequency (400 kHz), low intensity (~1 mA) current is passed through the central discs (15 mm dia.) of a pair of electrodes held in contact with the skin on both the sides of the thyroid cartilages, and the Lx waveform is extracted. A glottal impedance simulator has been designed for testing the sensitivity and frequency response of the impedance sensor. The impedance sensor is interfaced to the PC based sound/multimedia card, for acquisition, analysis, and display of the Lx waveform. The analysis and display package provides the pitch measurement, pitch histogram, and spectrographic analysis.