ODOR RECOGNITION SYSTEM

(SPONSORED BY K.S.C.S.T., BANGALORE)

A Project Report
submitted in partial fulfillment of the requirements
for the award of the Degree of
Engineering in Bio-Medical
of the Visvesvaraya Technological University, Belgaum

Submitted by

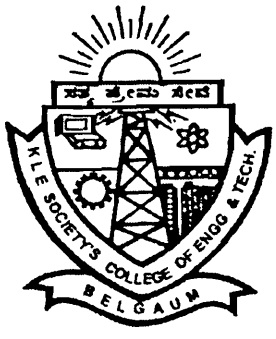
Nayana Chavan

Flavia Fernandes

Shweta Sansthanamath

Under The Guidance Of

Prof. Raviraj H. Hawaldar



Department of Bio-Medical Engineering

K.L.E SOCIETY'S

COLLEGE OF ENGINEERING AND TECHNOLOGY

UDYAMBAG, BELGAUM – 590 008

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELGAUM

2008-2009

ABSTRACT

Scientists, engineers, institutions and companies in many countries are working in the field of gas sensors and fire detectors. Investigations in this direction are dramatically extended and include now researches in the field of gas sensors on different physical principles. Different gas sensing polymer materials and multi-element arrays made of its (ORS arrays) proposed and are using today. Such and mass-spectroscopic arrays are very expensive and cannot be use for every-day human defense in their home, office, hotels, elevators, airplanes and in other ranges of human activity, in the continuous monitoring of emissions of small amounts of hazardous gases into the atmosphere and premises. The two main components of an odor recognition system are the sensing system and the automated pattern recognition system. The sensing system can be an array of several different sensing elements (e.g., chemical sensors), where each element measures a different property of the sensed chemical, or it can be a single sensing device (e.g., spectrometer) that produces an array of measurements for each chemical, or it can be a combination. Each chemical vapor presented to the sensor array produces a signature or pattern characteristic of the vapor. By presenting many different chemicals to the sensor array, a database of signatures is built up. This database of labeled signatures is used to train the pattern recognition system. The goal of this training process is to configure the recognition system to produce unique classifications of each chemical so that an automated identification can be implemented.

Smell, we use it to detect danger, such as a gas leak or food burning on the stove. Industries that develop products to help us either smell good or prevent aromatic offense testify to the aesthetic importance of odors, as well as to economic value. The primary goal of our present project is to resolve at least several problems and to detect different gases, smoke and fire using thin film sensors which operate at a remarkable low temp [25-100°C]. We expect to realize better sensitivity, stability and selectivity of different gas sensors as well as low consumed power, response and recovery times in comparison with gas sensors produced today by industry.