

VISVESVARAYA TECHNOLOGICAL UNIVERSITY
BELGAUM-590010



A REPORT ON PROJECT WORK

**“DEVELOPMENT OF ELECTRONIC NOSE FOR DIAGNOSIS
OF LUNG CANCER AT EARLY STAGE”
(SPONSORED BY K.S.C.S.T)**

Submitted in partial fulfillment of the requirements for the award of the degree of

**BACHELOR OF ENGINEERING
IN
BIOMEDICAL ENGINEERING**

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ABSTRACT

Developed a novel non-invasive electronic nose for detection and diagnosis of lung cancer based on an electronic nose instrument which includes a gas extraction and capillary column to concentrate, desorbs and separate volatile organic compounds (VOCs) in patients' breath, respectively. Surface Acoustic Wave (SAW) gas sensors will be used to detect chemical compounds. The specific VOCs exhaled by lung cancer cells in the microenvironment are proven the source biomarkers of lung cancer. The clinical experimental results show that this kind of novel electronic nose is effective for recognition of lung cancer patients and healthy persons and it's a non-invasive method to diagnose the lung cancer at early stage and it is based on the principle of Electronic nose.