



ವಿಶ್ವೇಶ್ವರಯ್ಯ ತಾಂತ್ರಿಕ ವಿಶ್ವವಿದ್ಯಾಲಯ - ಬೆಳಗಾವಿ
VISVESVARAYA TECHNOLOGICAL UNIVERSITY - Belgaum



B.L.D.E.A's
V. P. DR. P. G. HALAKATTI COLLEGE OF ENGG. & TECH.
BIJAPUR-586103



DEPARTMENT OF MECHANICAL ENGINEERING



PROJECT REPORT ON

**"EXPERIMENTAL ANALYSIS OF COOLING PERFORMANCE
OF MICROPROCESSOR CHIP USING SYNTHETIC JET"
(SPONSERED BY KSCST)**

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

**BACHELOR OF ENGINEERING
IN
MECHANICAL ENGINEERING**

Under the guidance of

Dr. V.V.KATTI

Submitted by

RAVINDRA KONDAGULI

2BL07ME055

NAGARAJ SATTIGERI

2BL07ME039

SHIVARAJ ARAKERI

2BL07ME071

PANDURANG CHAVAN

2BL07ME043

2010-11

ABSTRACT

Synthetic jet is a novel flow technique which synthesizes stagnant air to form a jet, and is potentially useful for cooling applications. The impingement heat transfer characteristics of a synthetic jet are studied in this work. Towards the end, the behavior of the average heat transfer coefficient of the impinged heated surface with variation in the axial distance between the jet and the heated surface is measured. The experiment are conducted by varying the input parameters like frequency of diaphragm and the ratio of axial distance between the heated surface and the jet orifice diameter. We have conducted experiment on cooling of copper plate using natural convection, heat sink of Pentium3 microprocessor and synthetic jet we concluded from graphs that cooling performance of synthetic jet is better than that of heat sink. The heat transfer coefficient is found to be maximum at the resonance frequency of the cavity (300 Hz).