

PROJECT REPORT
ON
**IMMOBLISATION OF GLUCOSE OXIDASE ON SILK FIBROIN MEMBRANE AND ITS
APPLICATION IN THE DEVELOPMENT OF BIOSENSORS.**

Submitted in partial fulfillment of the requirements for the award of degree of
BACHELOR OF ENGINEERING
IN
BIOTECHNOLOGY



VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELGAUM

SUBMITTED BY:

Swathi N

1BM09BT017

Manasa Krishnappa

1BM09BT013

Under the Guidance of,

Dr Savithri Bhat, Ph.D

Associate Professor

Department of Biotechnology

Mr.Pradeep.S

Assistant Professor

Department of Biotechnology



Department of Biotechnology

B.M.S COLLEGE OF ENGINEERING

(Autonomous College Affiliated to Visvesvaraya Technological University, Belgaum)

Bull Temple Road, Basavanagudi, Bangalore-560019

ABSTRACT

Fibroin from the silkworms and spiders are well known for their mechanical properties like toughness, inertness, extensibility and tensile strength . These features make the protein potentially useful in the field of biomedical engineering. In the present study, specific physical and biological parameters such as pH, temperature, protein estimation, porosity, stabilizing agents and antimicrobial activities were optimized to produce a membrane for enzyme immobilization. In the later steps, Glucose Oxidase was immobilized onto silk fibroin membrane. The second generation of glucose sensor based on the immobilized enzyme is fabricated as it has variety of advantages including easy maintenance of enzyme, simplicity of construction, faster response time and stability.

Keywords: fibroin, glucose oxidase, glucose sensor, immobilization, PEG-fibroin, silk fibroin.