

VISVESVARAYA TECHNOLOGICAL UNIVERSITY
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A REPORT ON PROJECT WORK
**“CORRECTION OF HEMIPLEGIC DROP FOOT BY USING
VERSATILE DROP FOOT STIMULATOR”**
(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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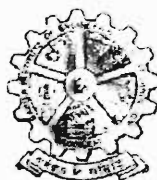
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ABSTRACT

Drop Foot Stimulators are used to correct hemiplegic drop foot by synchronising the application of Functional Electrical Stimulation (FES) of the Common Peroneal Nerve (CPN) to the swing phase of the gait cycle. This study was concerned with individuals who were unable to effectively dorsiflex their ankle when walking, as a result of a lesion of the central nervous system (CNS). A research Drop Foot Stimulator (DFS) has been developed with a very flexible architecture to enable the investigation of a variety of gait-correction strategies. The portable unit has been carefully designed to optimize functionality while keeping its size and power consumption to a minimum. The device has two channels of stimulation, with all parameters of stimulation for each channel independently programmable. A microcontroller core is utilized to enable the implementation of different control algorithms. A PC-based user interface enables easy programming of the system configuration.