KSCST

Karnataka State Council for Science and Technology

Indian Institute of Science Campus, Bengaluru - 560 012

Telephone: 080-2334 1652, 2334 8848, 2334 8849 ♦ Telefax: 080-2334 8840
Email: office@kscst.iisc.ernet.in, office@kscst.org.in ♦ Website: www.kscst.iisc.ernet.in, www.kscst.org.in

Dr. S. G. Sreekanteswara Swamy
Executive Secretary

27th March 2017

Ref: 7.1.03/SPP/1112

The Principal
Alva's Institute of Engineering and Technology
Shobavana Campus,
Mijar, Moodbidri - 574 225.
Mangaluru.

Dear Sir,

Sub : Sanction of Student Project - 40th Series: Year 2016-2017
Your Project Proposal Reference No. : 40S_BE_0855

Ref : Your Project Proposal entitled " **BRAIN CONTROLLED WHEELCHAIR**

I am happy to inform that your project proposal referred above, has been approved by the Secretary, KSCST for "Student Project Programme - 40th Series" and has been sanctioned with a budgetary break-up as detailed below:

Student / s	Mr. Ullas U and others	**Budget**	**Amount (Rs)**
		Materials/Consumables	5,000.00
Guide/s	Mr. Sudhakar H M	Labor	-
		Travel	-
Department	Electronics And Communication Engineering	Miscellaneous	-
		Report	500.00
		TOTAL	5,500.00
	Rupees Five Thousand Five Hundred		

The following are the guidelines to carryout the project work :

a) The project should be performed based on the objectives of the proposal sent by you.

b) The project should be completed in all respects and one copy of the hardbound report along with softcopy of the full report in a CD (.pdf format) should be submitted to KSCST.

c) Any change in the project title and objectives, etc., or students is liable to rejection of the project and the amount sanctioned needs to be returned to KSCST.

d) Please quote your **project sanction reference number printed above** in all your future correspondences.

e) **Important:** After completing the project, 2 to 3 page write-up (synopsis) needs to be sent by e-mail [spp@kscst.iisc.ernet.in] and should include following :

1) Title of the project
2) Name of the College & Department
3) Name of the students & Guide(s)
4) Keywords

5) Introduction / background **40S_BE_0855**
(with specific reference to the project, work done earlier, etc) - about 20 lines
6) Objectives (about 10 lines)
7) Methodology (about 20 lines)
(materials, methods, details of work carried out, including drawings, diagrams etc)
8) Results and Conclusions
(about 20 lines with specific reference to work carried out)
9) Scope for future work (about 20 lines).
(Note: The write-up (Synopsis) should be sent with the approval of project guide. The softcopy of the write-up, in MS Word format, should be sent by e-mail (spp@kscst.iisc.ernet.in). In your e-mail, please also include project proposal reference number and title of the project.)

e) Projects selected for Seminar / Exhibition will be awarded.

The sanctioned amount will be sent separately by our Accounts Department.

The sponsored projects evaluation will be held in the Nodal Centre and the details of the nodal centre will be intimated shortly.

Please visit our website for further announcements / information and for any clarifications please email to spp@kscst.iisc.ernet.in

Thanking you and with best regards,

Yours sincerely,

(SGS Swamy)

Copy to:
1) The Head of the Department of
Electronics And Communication Engineering
Alva'S Institute Of Engineering And Technology
Shobavana Campus,
Mijar, Moodbidri - 574 225.
Mangaluru.

2) Mr. Sudhakar H M
Department of Electronics And Communication Engineering
Alva'S Institute Of Engineering And Technology
Shobavana Campus,
Mijar, Moodbidri - 574 225.
Mangaluru.

3) The Finance Officer, KSCST, Bangalore

VISVESVARAYA TECHNOLOGICAL UNIVERSITY

"Jnana Sangama" Belagavi – 590 010

PROJECT REPORT ON

"BRAIN CONTROLLED WHEELCHAIR"

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

BACHELOR OF ENGINEERING
IN
ELECTRONICS & COMMUNICATION ENGINEERING

Submitted By

Name	USN
ULLAS U	4AL13EC103
VIGNESH	4AL13EC106
VISHNU T V	4AL13EC110
VISHWAS V	4AL13EC111

Under the Guidance of
Mr. Sudhakara H M
Sr.Assistant Professor
Department of E&C Engineering

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING
ALVA'S INSTITUTE OF ENGINEERING & TECHNOLOGY
MOODBIDRI – 574 225.

2016-2017

ALVA'S INSTITUTE OF ENGINEERING & TECHNOLOGY

MOODBIDRI – 574 225

(Affiliated to VTU, BELAGAVI)

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

CERTIFICATE

*Certified that the project work entitled "***BRAIN CONTROLLED WHEELCHAIR***" is a bonafide work carried out by*

ULLAS U	**4AL13EC103**
VIGNESH	**4AL13EC106**
VISHNU TV	**4AL13EC110**
VISHWAS V	**4AL13EC111**

in partial fulfillment for the award of BACHELOR OF ENGINEERING in **ELECTRONICS & COMMUNICATION ENGINEERING** of the **VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI** during the year 2016–2017. It is certified that all corrections/suggestions indicated for Internal Assessment have been incorporated in the report deposited in the departmental library. The project report has been approved as it satisfies the academic requirements in respect of Project work prescribed for the Bachelor of Engineering Degree.

13/5/17	D.V.M 13/05/17	
Signature of the Guide	**Signature of the H.O.D**	**Signature of the Principal**
Mr. Sudhakara H.M	**Dr. D V Manjunatha** **H. O. D.** **Dept. Of Electronics & Communication** **Alva's Institute of Engg. & Technology** **Mijar, MOODBIDRI - 574 225**	**Dr. Peter Fernandes** PRINCIPAL Alva's Institute of Engg. & Technology, Mijar, MOODBIDRI - 574 225, D.K.

EXTERNAL VIVA

Name of the Examiners — Signature with date

1..... .....

2..... .....

ABSTRACT

Millions of people around the globe suffer from mobility impairments due to paralysis, where the person is not able to control their muscles. There are different types in paralysis such as Quadriplegia, Hemiplegia and Monoplegia. Quadriplegia is the condition where the person completely lost their control on muscles. Electroencephalogram (EEG) is an advanced technique which can be brought into the common man's life and provides permanent solution for these kinds of mobility impairments. The present system is costly and non portable due to more number of electrode cap. Only patients are provided with this for their comfortable environment yet they must depend on others to operate it.

The proposed system is going to monitor the pattern of interaction between neurons. These are represented as thoughts and emotion states through EEG sensor related to Brain Computer Interface (BCI). Human brain has different frequencies due to neuron firing at the timing of any thought arising. In the proposed work a wheelchair is developed, which is controlled by EEG signals that can assist paralyzed people in their daily life to do some work independently. Here different patterns of brain activity are converted into commands in real time. This project is cost effective, portable and is implemented with open source software and hardware to ensure the safety of paralyzed person during movement.

An EEG signal with BCI is developed to control a wheel chair. The starting and termination of left, right and forward direction is done with the help of eye blink values and movement is completely depends on attention values. The ultrasonic sensors and camera ensures the safety during the movement. This project satisfies all the design objectives that we are considered before the design implementation.