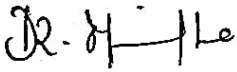


ANNA UNIVERSITY: CHENNAI 600 025

## BONAFIDE CERTIFICATE

Certified that this project report "WEARABLE NON-INVASIVE OPTICAL MONITORING FOR BLADDER DYSFUNCTION - INCONTINENCE AND ENURESIS" is the bonafide work of "JAYAKUMAR S (20112017), MIDHUN JACOB (20112023), MONICA DEEPTHI S (20112026), M SUSHMITHA (20112047) who carried out the project work under my supervision.



SIGNATURE OF THE SUPERVISOR  
Ms.Nivedha D R  
Assistant Professor  
Department of Biomedical Engineering  
Hindusthan College of Engineering  
& Technology  
Coimbatore-641032



HEAD OF THE DEPARTMENT  
Dr.S.SaravanaSundaram  
Professor & Head  
Department of Biomedical Engineering  
Hindusthan College of Engineering  
& Technology  
Coimbatore-641032

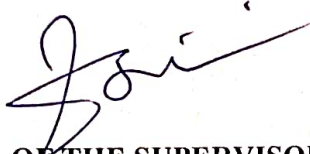
Submitted for the Project Viva Voice examination held on 22-05-2024.

M.S. 22/5/24  
Internal Examiner  
M. Deeparani  
AP/BME

R. Vetrivelan  
External Examiner  
P. Vetrivelan  
Asso. Prof/ECE  
PSG I Tech  
Coimbatore-641062

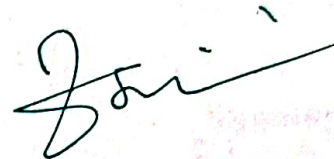
**BONAFIDE CERTIFICATE**

Certified that this project report titled "SURGICAL ASSISTIVE ROBOT" is the bonafide work of **BHARAT M (20112010), SARAN KARTHICK S (20112035), SRIRAM G (20112045), STEVEGLADWIN W (20112046)** who carried out the project work under my supervision.



**SIGNATURE OF THE SUPERVISOR**

Dr. S. Saravana Sundaram  
Professor and Head  
Department of Biomedical Engineering  
Hindusthan College of Engineering and  
Technology  
Coimbatore – 641032



**HEAD OF THE DEPARTMENT**

Dr. S. Saravana Sundaram  
Professor and Head  
Department of Biomedical Engineering  
Hindusthan College of Engineering and  
Technology  
Coimbatore – 641032

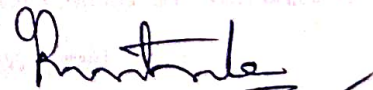
Submitted for the project viva-voce examination held on 22 / 05 / 2024

M.D  
22/5/24

**Internal Examiner**

M. Deeparani

AP/BME



**External Examiner**

P. VETRIVELAN

Asso. prof / ECE

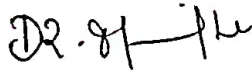
PSG iTECH

Coimbatore - 641062.

ANNA UNIVERSITY : CHENNAI 600 025

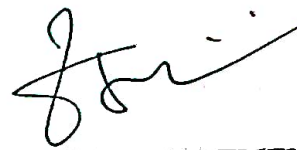
**BONAFIDE CERTIFICATE**

Certified that this project report titled "FABRICATION OF NANOFIBER MESHES AS BLOOD PURIFIER MEMBRANE IN ARTIFICIAL DIALYZER" is the bonafide work of KISHORE R (20112020), SATHYA T (20112037), SONALI S V (20112042), VIGNESHWARAN A (20112050) who carried out the project work under my supervision.



**SIGNATURE OF THE SUPERVISOR**

Ms. Nivedha D R  
Assistant Professor  
Bio Medical Engineering  
Hindusthan College of Engineering  
and Technology  
Coimbatore- 641032



**HEAD OF THE DEPARTMENT**

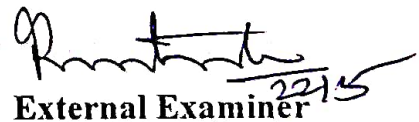
Dr. S. Saravana Sundaram  
Professor  
Bio Medical Engineering  
Hindusthan College of Engineering  
and Technology  
Coimbatore- 641032

Submitted for the project viva-voce examination held on 22/05/24



**Internal Examiner**

Mrs. M. Deeparani  
AP/BME



**External Examiner**

P. Vetivelan  
Associate professor  
ECE  
PSGITEch  
Coimbatore

## BONAFIDE CERTIFICATE

Certified that this project report titled "DIRECTION GUIDANCE SMART BLINDSTICK" is the bonafide work of A.ABDUL RAHMAN(20112001), A.B.KISHOR(20112019), J.MOHAMED IMRANKHAN(20112024), R.SOWMYA(20112043) who carried out the project work under my supervision.



HEAD OF THE DEPARTMENT

Dr.S.Saravana Sundaram

Professor And Head

Department Of Biomedical Engineering

Hindusthan College Of Engineering And Technology

Coimbatore-641032



SIGNATURE OF SUPERVISOR

Mrs.S.Shobha Christila

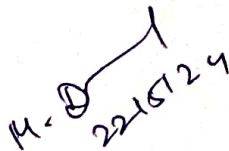
Assistant Professor

Department of Biomedical Engineering

Hindusthan College Of Engineering And Technology

Coimbatore-641032

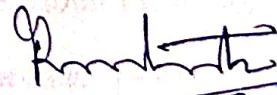
Submitted for the project viva-voce examination held on 22-05-2024



Internal Examiner

M. Deeparami

AP/BME



External Examiner

P. Vetrivelan

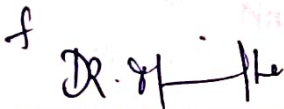
Assoc. Prof | ECE

PSG i Tech

Coimbatore - 641062

**BONAFIDE CERTIFICATE**

Certified that this project report titled “ENHANCING HOME REHABILITATION FOR STROKE PATIENTS AND CEREBRAL PALSY THROUGH EMG CONTROLLED GAME BASED THERAPY” is the bonafide work of ADAIKKALARAJ.P(20112002),GINOLENEPACKIASHINIFFA P (20112013),LADEEDA SHAHSADI VM(20112021),MOKESH S(20112025) who carried out the project work under my supervision.



**SIGNATURE OF THE SUPERVISOR**

Ms.S.Patricia Nancy

Assistant Professor

Department of Bio Medical Engineering

Hindusthan College of Engineering and Technology

Coimbatore – 641032



**HEAD OF THE DEPARTMENT**

Dr.S.Saravana Sundaram

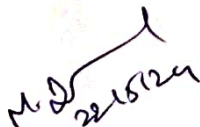
Professor and Head

Department of Bio Medical Engineering

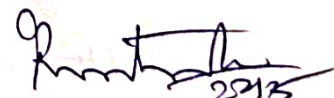
Hindusthan College of Engineering and Technology

Coimbatore - 641032

Submitted for the project Viva-Voce Examination held on 22-05-2024



**Internal Examiner**



**External Examiner**

P. Vetrivelan

Asst Prof IECE

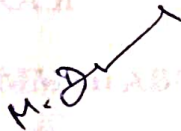
PSGS Tech

Coimbatore - 641062

**ANNA UNIVERSITY: CHENNAI 600 025**

**BONAFIDE CERTIFICATE**

Certified that this project report “COMBINATIONAL THERAPEUTIC GLOVES FOR PEOPLE WITH ARTHRITIS” is the bonafide work of “GOPINATH R (20112014), JASHIKA K (20112016), MUHAMMED ABUTHAHIR K (20112027), SARMILA (20112036)” who carried out the project work under my supervision.



**SIGNATURE OF THE SUPERVISOR**

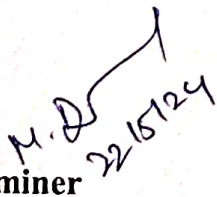
Mrs. M. Deeparani  
Supervisor  
Department of Biomedical Engineering  
Hindusthan College of Engineering and  
Technology, Coimbatore – 641032



**SIGNATURE OF THE HEAD OF THE DEPARTMENT**

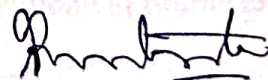
Dr. S. Saravana Sundaram  
Professor & Head of The Department  
Department of Biomedical Engineering  
Hindusthan College of Engineering and  
Technology, Coimbatore - 641032

Submitted for the project viva-voce examination held on **08.05.2024**



**Internal Examiner**

Mrs. M. Deeparani  
AP/BME



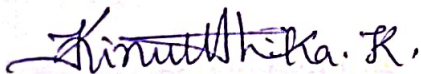
**External Examiner**

P. Veeravelan  
Associate Professor ECE  
PSG: I Tech  
Coimbatore. 641032

**ANNA UNIVERSITY: CHENNAI 600 025**

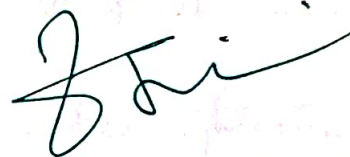
**- BONAFIDE CERTIFICATE**

Certified that this project report “**LOW COST EMG BASED BIONIC ARM USING SERVO MOTOR AND ARDUINO** ” is the bonafide work of “**AHAMED NASITH (20112003), AVANTHKA CM (20112008), REYANA SREE KM(20112033), SHANOFER J (20112038)** ” who carried out the project work under my supervision.



**SIGNATURE OF SUPERVISOR**

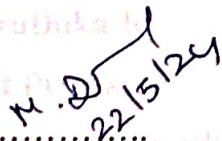
**Mrs. Kiruthika K**  
**Assistant Professor**  
Biomedical Engineering,  
Hindusthan College Of Engineering  
And Technology,  
Coimbatore - 641032



**HEAD OF THE DEPARTMENT**

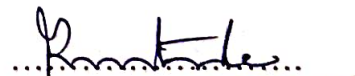
**Dr. S. Saravana Sundaram**  
**Professor**  
Biomedical Engineering,  
Hindusthan College Of Engineering  
And Technology,  
Coimbatore - 641032

Submitted for the project viva - voce examination held on ... **22.5.2024**...

  
M. Deeparam  
22/5/24

Internal examiner

M. Deeparam  
Asst Prof / DMF



External examiner

**P. VETRIVELAN**

ASSO. PROF / ECE

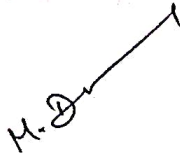
PSG i Tech

Coimbatore - 641062

ANNA UNIVERSITY: CHENNAI 600 025

**BONAFIDE CERTIFICATE**

Certified that this project report titled "BONE ANCHORED HEARING AID" is the bonafide work of AMAL S (20112005), BAVITHRA M(20112009), SMINJU ELZA SAJI(20112040), SOBIKA R(20112041) who carried out the project work under my supervision.



**SIGNATURE OF THE SUPERVISOR**

Mrs.M.Deeparani  
Assistant Professor  
Department of Bio Medical Engineering  
Hindusthan College of Engineering and  
Technology  
Coimbatore – 641032




**HEAD OF THE DEPARTMENT**

Dr.S.Saravana Sundaram  
Professor and Head  
Department of Bio Medical Engineering  
Hindusthan College of Engineering and  
Technology  
Coimbatore - 641032

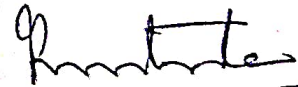
Submitted for the project viva-voce examination held on

22.05.2024



**Internal Examiner**

M. Deeparani  
Ap/BME



**External Examiner**

P. Veerichelvan  
Asso. prof/ECE  
Psn. itech  
Coimbatore - 641062.

# ANNA UNIVERSITY : CHENNAI 600 025

## BONAFIDE CERTIFICATE

Certified that this project report titled “DESIGN AND DEVELOPMENT OF A SMART WIRELESS INSOLE FOR GAIT ANALYSIS ” is the IV PROJECT bonafide work of “PRIYADHARSHINI S (20112031), THEJAN R (20112048), VARSHINI T (20112049), VIJAYARAJ M (20112803)”who carried out the project work under my supervision.



SIGNATURE OF THE SUPERVISOR


Dr. M. Ganga,  
Associate professor  
Department of biomedical engineering,  
Hindusthan college of Engineering and  
Technology,  
Coimbatore-641032



HEAD OF THE DEPARTMENT

Dr. S. Saravana Sundaram,  
Professor & Head  
Department of biomedical engineering,  
Hindusthan college of engineering and  
Technology,  
Coimbatore-641032

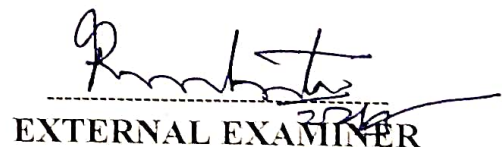
Submitted for the Project Viva-Voce exam held on ...2.2..05...2024..



M. Deeparani  
22/5/24

INTERNAL EXAMINER

M. Deeparani<sup>P</sup>  
AP /BME



P. Vetivelan  
22/5/24

EXTERNAL EXAMINER

P. Vetivelan  
Asst. Prof ECE  
PSG P-Tech  
Coimbatore 641062

## BONAFIDE CERTIFICATE

Certified that this project report "AUGMENT REALITY IN THE FIELD OF VIRTUAL MEDICAL" is the bonafide work of "AJEETH KUMAR V(201120004),AMAL RAJ M(201120006),ARIHARASUDHAN K(20112007)"who carried in the work under my supervision.



SIGNATURE OF THE SUPERVISOR



HEAD OF THE DEPARTMENT

Ms.C.Sella Dharshini

Dr. S. Saravana Sundaram

Assistant Professor

Professor & Head

Department of Biomedical Engineering

Department of Biomedical Engineering

Hindusthan College of Engineering  
and Technology  
Coimbatore-641032

Hindusthan College of Engineering  
and Technology  
Coimbatore-641032

I certify that the declaration made by the above candidate is true.

Submitted for the Project Viva Voice examination held on 22.05.2024

Assistant Professor

Department of Biomedical Engineering

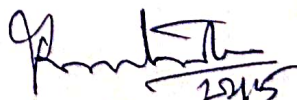
Hindusthan College of Engineering & Technology, Coimbatore-641032

M.D  
22/05/24

Internal Examiner

M. Deeparani  
AP/BME

II

  
20/5

External Examiner

P. Vetrivelan  
ASSO-PROF ECE  
PSG i tech  
Coimbatore 641062

ANNA UNIVERSITY: CHENNAI 600 025

**BONAFIDE CERTIFICATE**

Certified that this project report titled "WEARABLE PATIENT MONITORING DEVICE USING ESP 32 MICRO CONTROLLER" is the bonafide work of DEEPARATCHAGAN G (20112011),MADHANRAJAN R (20112022),VISHNU V(20112051), VISHVA V(20112052), DHANISH D(20112801) who carried out the project work under my supervision.



**SIGNATURE OF THE SUPERVISOR**

Dr.T.Murugeswari

Associate Professor

Department of Bio Medical Engineering

Hindusthan College of Engineering and Technology

Coimbatore – 641032



**HEAD OF THE DEPARTMENT**

Dr.S.Saravana Sundaram

Professor and Head

Department of Bio Medical Engineering

Hindusthan College of Engineering and Technology

Coimbatore - 641032

Submitted for the project viva-voce examination held on

22/05/24



**Internal Examiner**

Mrs. M. Deeparatchagan

AP/BME



**External Examiner**

P. Vetivelan

Associate professor

ECE

RSGITech

Coimbatore

ANNA UNIVERSITY: CHENNAI600025

**BONAFIDE CERTIFICATE**

Certified that this project report titled "INTEGRATED PATIENT MONITORING WITH DUAL-MODE VENTILATION SYSTEM" is the bonafide work of JEEVANPJ (20112018), MUHAMMED SHAFREED K A (20112029), NANDU HARIKUMAR (20112030),SAMUEL SABU(20112034) who carried out the project work under my supervision.



**SIGNATURE OF THE SUPERVISOR**

Dr.S.Saravana Sundaram

Professor and Head

Department of BioMedical Engineering

Hindusthan College of Engineering and Technology

Coimbatore -641032



**HEAD OF THE DEPARTMENT**

Dr.S.Saravana Sundaram

Professor and Head

Department of BioMedical Engineering

Hindusthan College of Engineering and Technology

Coimbatore- 641032

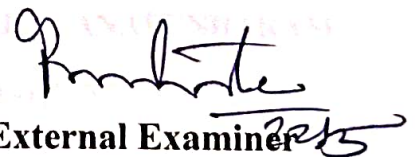
Submitted for the project Viva-Voce examination held on 22-05-2024



**Internal Examiner**

M. Deeparani

AP/BME



**External Examiner**

P. Velivelan,  
ASSO. prof /ECE

PSG i tech,  
coimbatore 641062.