

# VIT/IPR-02

INVENTION DISCLOSURE FORM

# Title of the project

EDEN-FIST

2.

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1. **Principal Investigator (PI):**Dr. Umamaheswari E.

1. Sponsor(s) / Source of funding of the project/consultancy – with or without prior Contractual agreement - NIL
2. **Is the work bound by any agreement/contract / MOU? - NO**

1. **Date of start of the project -01-02-23**

1. **Is the patent (to be filed) for a process or product? -Product**
2. **The general area of the patent - Smart device**

1. **Name of process/product invented/developed -**EDEN-FIST

1. **The information available in the published literature (prior art) about the problem tackled**

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1. Name: Industrial Impact Safety Glove

 Application No: D855896

Published on: August 6, 2019

Country: USA

1. Name: Athletic Hand Grip

Application No: D863464

Published on: October 15, 2019

Country: USA

1. Name: Textured Glove

Application No: D868386

Published on: November 26, 2019

Country: Malaysia

1. Name: Flex Force Smart Glove

Application No: 10890970

Published on: January 12, 2021

Country: USA

1. Limitations of the presently available technology/product

The following inventions had some limitations such as: -

1. High cost due to usage of several sensors which in our prototype is replaced by a single flex sensor thus making it affordable.

1. The presence of many copper plates makes them difficult and uncomfortable to wear due to their heavy weight.

1. It had embedded sensors or microcontrollers in all five fingers which could not be replaced if malfunctioned thus deteriorating the whole product which in our prototype is replaced by a single flex sensor that is not embedded and thus adjustable to the patient’s active finger.

1. **Description of the invention**

1. Communication is the only medium by which we can share our thoughts or convey the message but a person with a disability (paralyzed or dumb or just recovered from a coma) faces difficulty in Communication with a normal person.
2. The main aim of the proposed project is to develop a cost-effective system that can give voice to the voiceless person with the help of Smart Gloves.
3. Components used:
4. Glove:

Small Piezoelectric Buzzer - 5V Active Buzzer

Reusable anti static Silicon

9V Battery (Hi-Watt)

|  |
| --- |
| Jumper Wire Combo - Male to Male, Male to Female and Female to Female Breadboard Connecting |
| Wires |  |  |  |  |  |

10K ohm 2 Watt Resistor

|  |
| --- |
| Switch |
|  |

Flex Sensor 2.2 inch Bend Sensor for Hand

~~Rs. 333.00~~ Rs. 51.30 1 Rs. 285.00

1. Rs. 285.00

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Arduino Nano - Soldered (Without  Cable)  B. Oximeter:-  Arduino Pro Mini 5V  Arduino Pro Mini 5V  BC547 NPN Transistor  Photodiode - 5mm IR Receiver LED  5mm LED - Red Color  4.7 ohm, 1/4 Watt Resistor with 5% tolerance (Pack of 10)  9V Battery Snap Connector   1. Budget required to build the prototype: Rs2500 2. **STATISTICS:-**  1. It helps dumb, paralyzed and people in coma to create an alert for help. 2. It has an Oximeter attached to it which continuously reads oxygen level of the patient. 3. Target audience: paralyzed people, dumb people, coma recovered people. |  |  |  |  |  |

1. The invention namely the solution to the problem.

* The mentioned problem is resolved by the following parameters
* Tracking bending of patient’s finger.
* Movement is sensed or detected by flex sensor.
* Buzzer buzzes in sensitive situation creating an alarm.
* spo2 of the user and displays it in the OLED display.
* Rubber grip attached on the inside of the glove ensures proper gripping.
* Accuracy and precision in readings.

1. **Origin of the idea/ invention: by whom and when?**

Idea proposed by: Dr. UmamaheswariE

Date :15-01-23

# Any help received from others in conception of the idea? -NO

1. **First record of initial idea/invention (Oral/written/conceptualization)**
2. **EDEN FIST is a smart device based smart glove that assists or acts as a companion to disabled.**
3. **The buzzer helps notify the guardians in an emergency.**
4. **This invention helps physically challenged people to call their loved ones.**
5. **Spo2 is being measured and displayed in the OLED display.**
6. **The flex sensor attached in the glove is externally attached and not embedded thus making it comfortable adjustable to patient’s finger.**
7. **Has the work been displayed/reported/published /presented (oral or poster) anywhere? If yes, give a full description, including name, place and date of the event. –**NO
8. **Has any related patents been filed by the inventor? – NO**
9. **Unique features about the work done with respect to prior art**
10. Is the work a mere extension of common known knowledge? –YES
11. Has the work filled a major gap in prior art? If yes, a brief description of this gap:

Yes, a new feature “Oximeter” has been added to the invention that differentiates it from others.

1. Any environmental issues? –NO
2. What aspect(s) of the invention need(s) protection?
   1. Waterproof Glove material.
   2. Protection cover for internal machinery.

# Has the work been systematically and chronologically documented? –YES

1. **Commercial aspects of the product / process/ technology developed**

-The developed product can be used commercially.

# Has any costing of the product/ process/inventions been done? –NO

1. **Any industries / companies interested in licensing the work? –**
2. **Is the work**
3. Completed and results validated? –
4. At a basic conceptualization stage? – NO

# I agree to assign to VIT University my rights in this invention

Inventor`s Signature Dated:10-02-23

# I agree to assign to “Vellore Institute of Technology, Chennai” my rights in this invention

1. **I confirm that the details furnished in respect of this invention / Technology are correct and agree to the request for filling of an application patent with the names of the inventors as proposed above**



**Date:10-02-23 Signature of the Principal Investigator of the project**