Portfolio

I am a Visionary, an Innovative thinker and have passion for Creativity.

Rajesh Ranjan
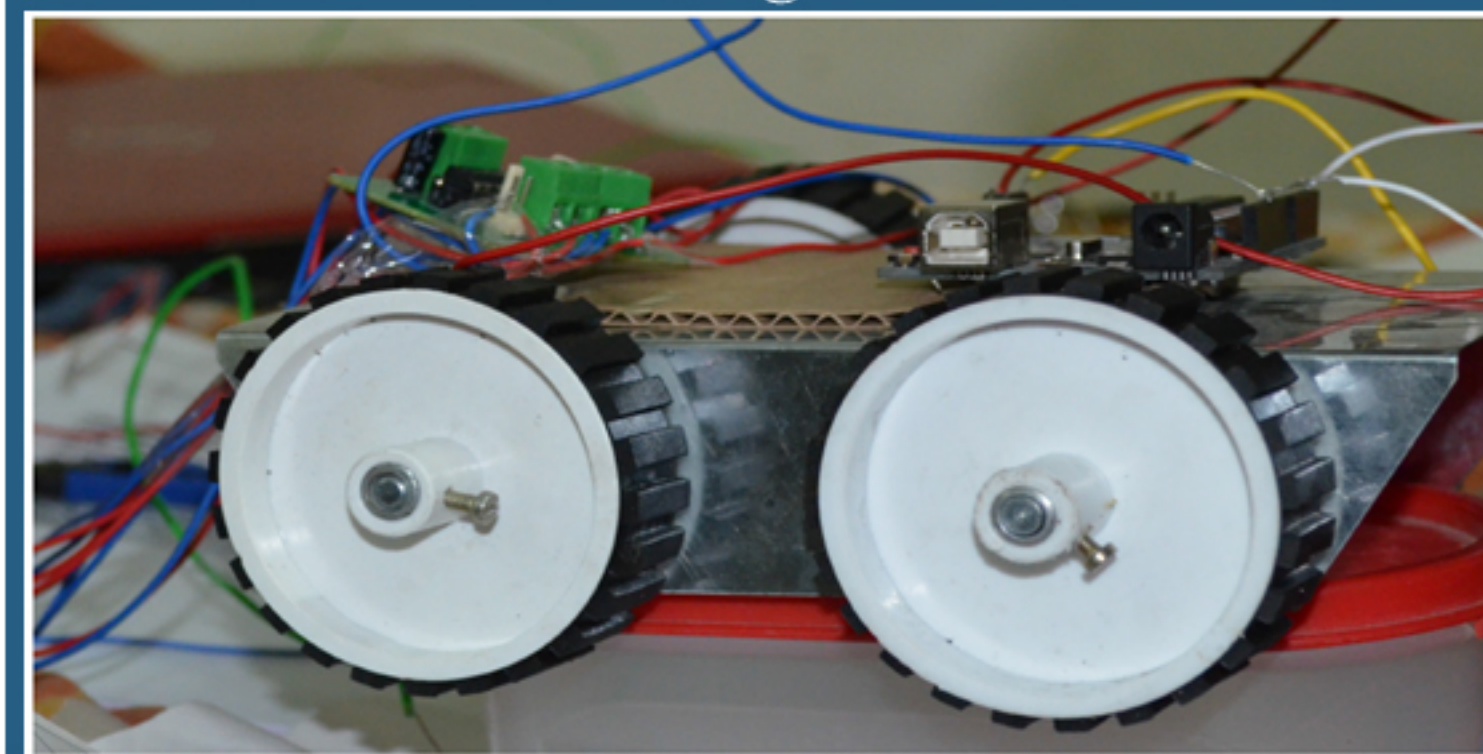
REMOTELY ACCESIBLE BOT

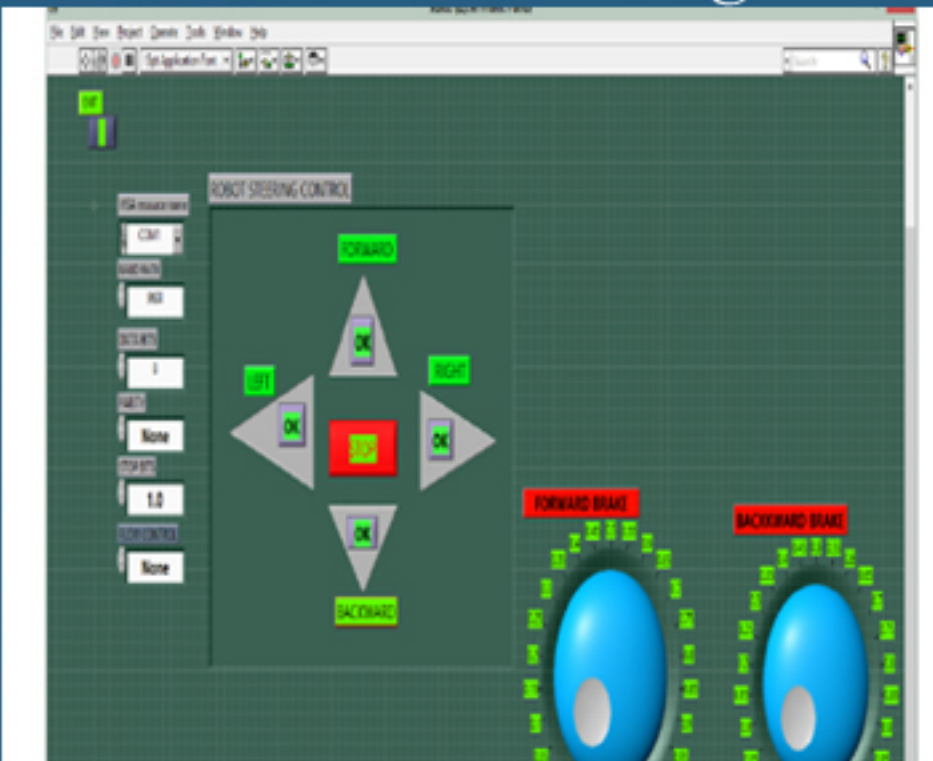*Design and Development Of Remotely Accessible Bot Using LabVIEW.*

Prominent Features:

--controlled by any client pc in a remote distance through internet.

-- an eye of the robotic system.

-- another dimension to security for scanning remote locations.

Robot Hardware Design

Interface Panel Design

Prototype of Remotely Acessible Robot

Health Monitoring and Control through I-PAD

Health monitoring and control using smart phones, I-pad, I-phone.

Prominent Features:

-- Data dashboards of Labview in I-pad.
Interface development on I-pad.

--Network variables sharing between host computer and remote I-pad.

--Remote control can be done from I-pad using control shared variables.

---Remote monitor and control from any place in the world using network VPN connection between host and client.
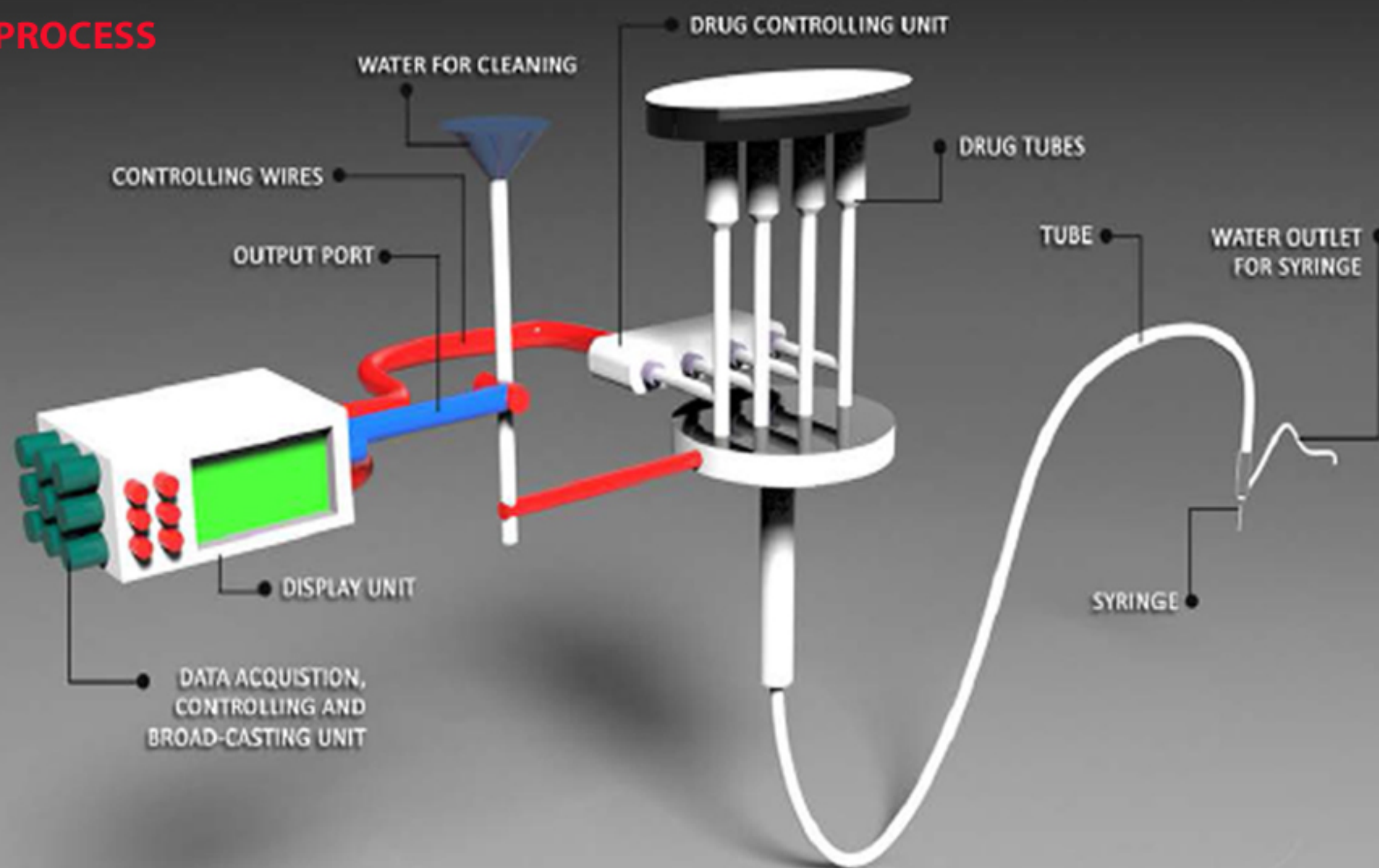
Fu-Smart (A Remote Health Monitoring and Control Unit)

FU-SMART: Design and development of a Networked Health monitoring and Control system.

FU-SMART

Novel Features:

--Wired/Wireless data acquisition from multiple sensing units.

--Networking: Remote control of drug delivery system through Smart devices (like tab, i-pad, i-phone, laptops etc).

---Design of Drug delivery unit.

PATENT PROCESS

DRUG CONTROLLING UNIT

WATER FOR CLEANING

CONTROLLING WIRES

OUTPUT PORT

DRUG TUBES

TUBE

WATER OUTLET FOR SYRINGE

DISPLAY UNIT

DATA ACQUISTION, CONTROLLING AND BROAD-CASTING UNIT

SYRINGE

X-MACT (A μC - Xbee communication based actuator)

*A microcontroller -Xbee communication based actuator design for controlling flow of drugs in multiple pipes.*
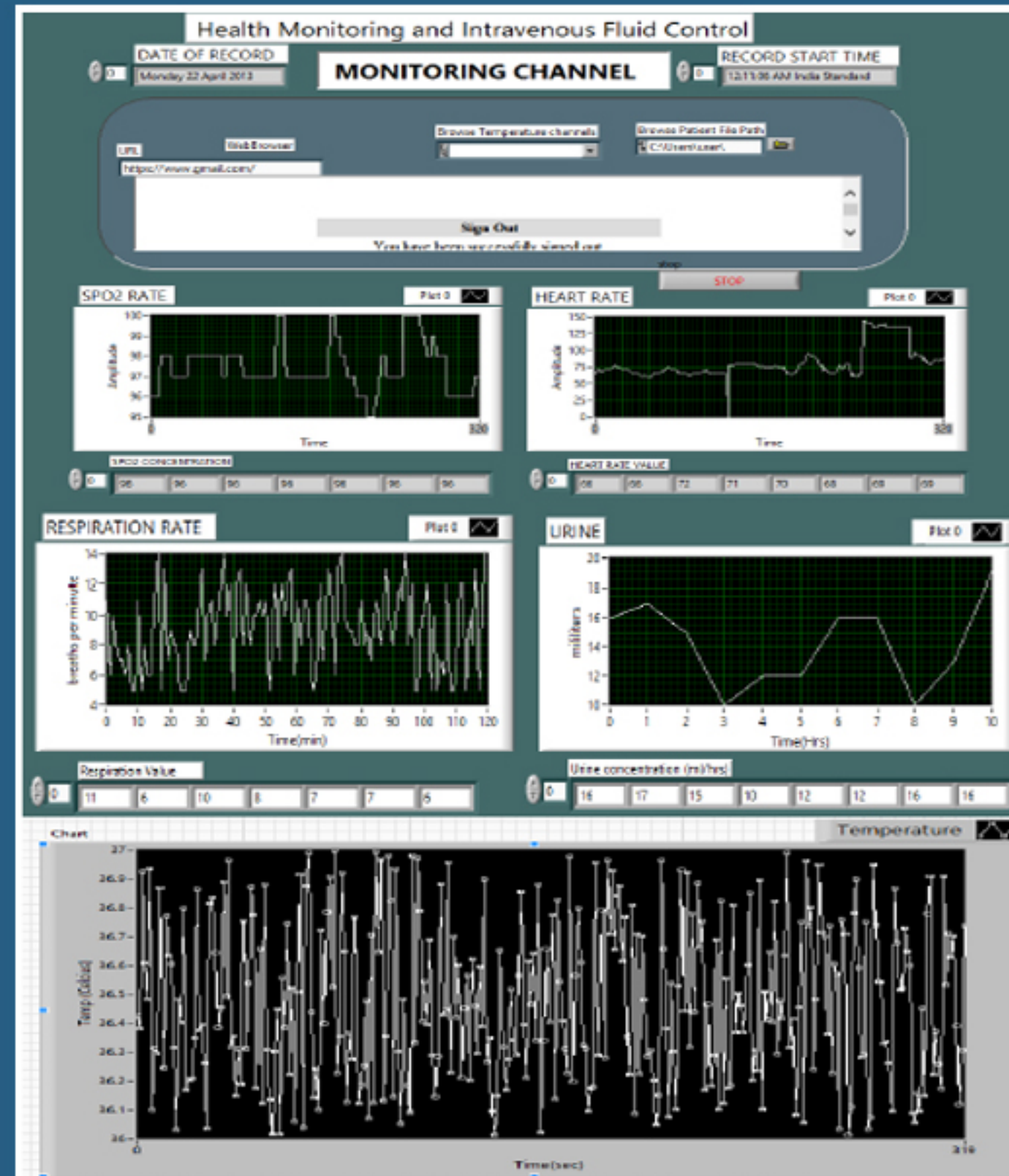
X-MACT

Patent Process

COUPLING • DC MOTOR

ROLLER CLAMP •

IV LINE •

BOTTOM SUPPORT •

SLOT FOR MOVING ROLLER CLAMP •
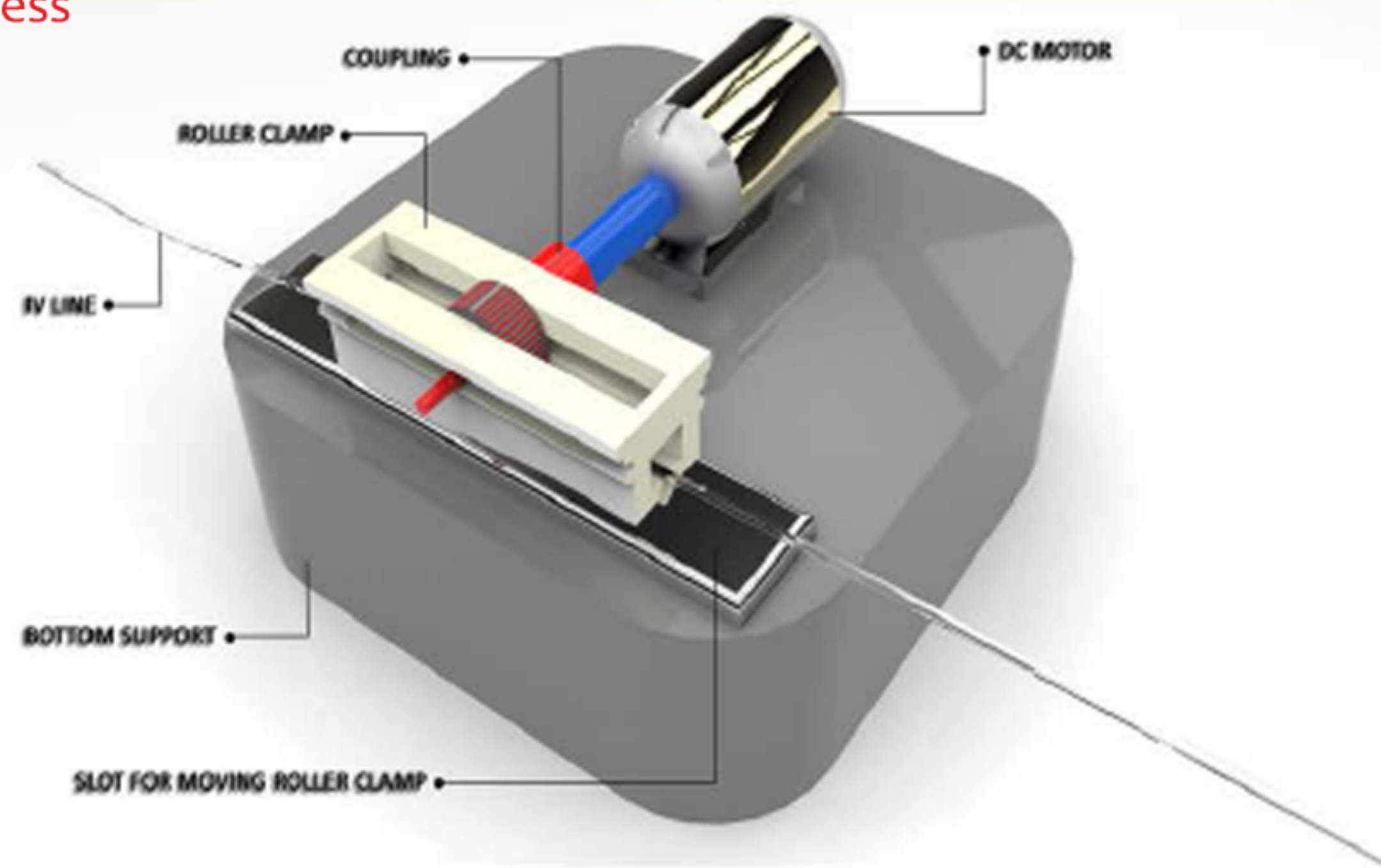
Biomedical Instrumentation & Automation and Control

A Biomedical application of online remote control system .

Screenshot of Front panel Interfce of Health Monitoring Parameters and control channels
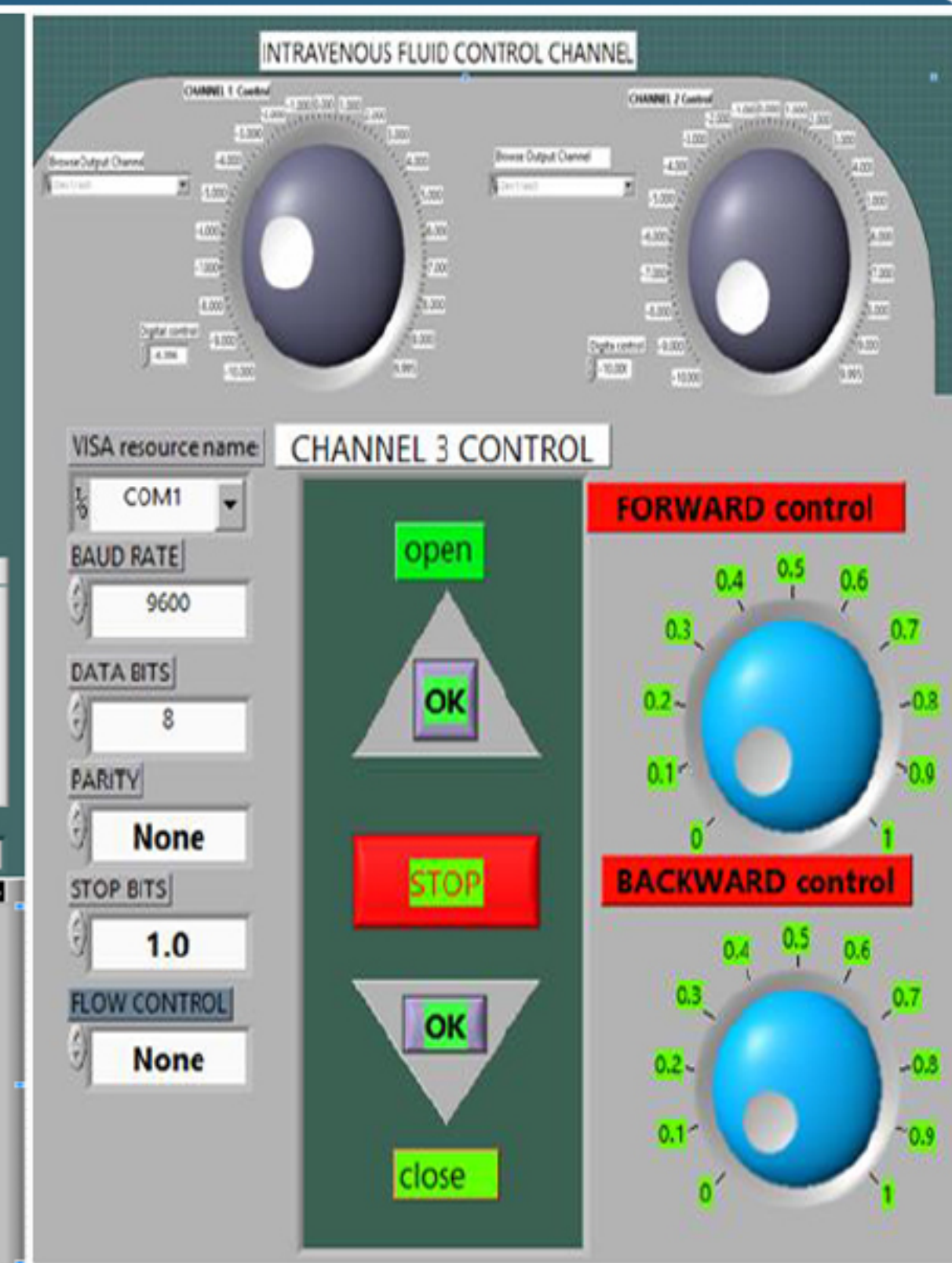
Prominent Features:

--Remote Health Monitoring System.
--Health Paramaeters.
P02,Hemoglobin,PC02,PH of blood.
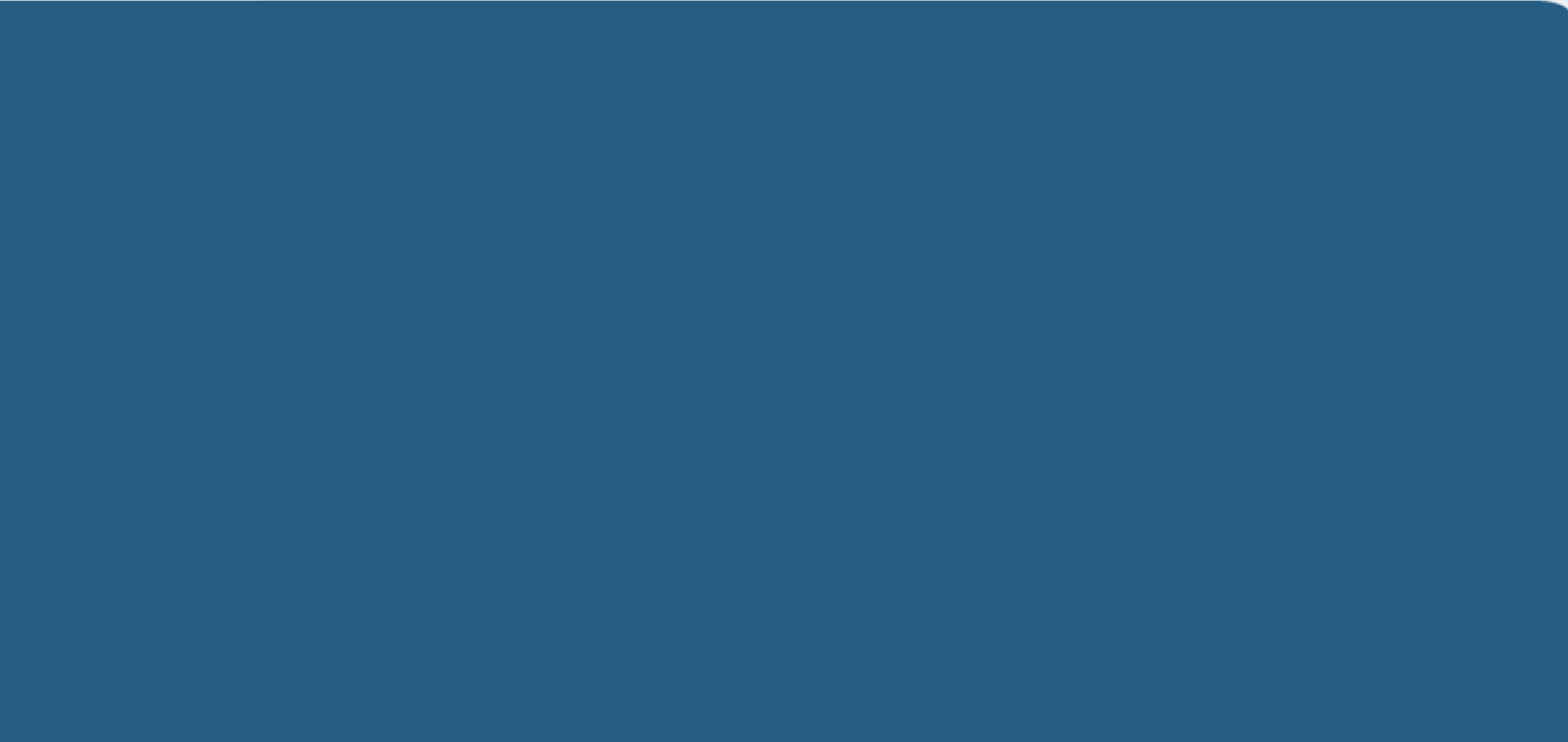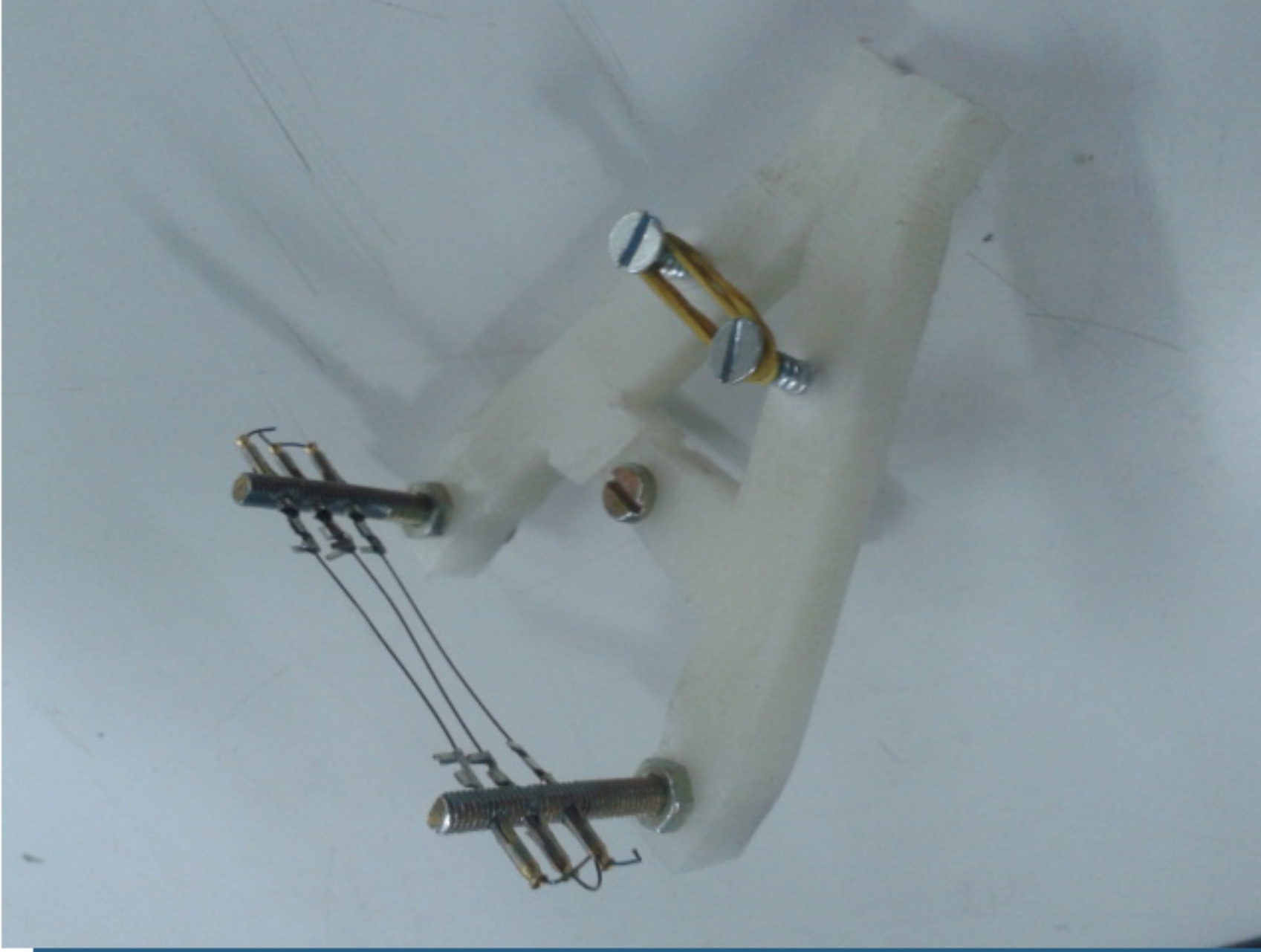-- Design of Networking interface for monitoring data from remote places.
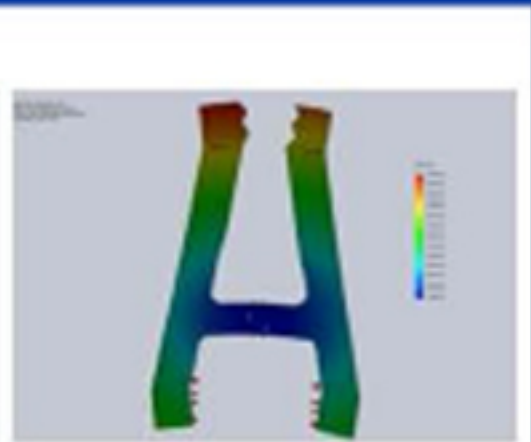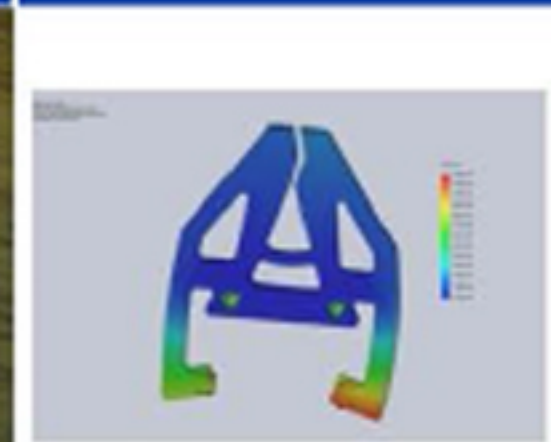
SMACT (A Smart Actuator)

A Shape memory alloy based actuator is designed and tested for controlling the flow of drug through the pipes.

SMACT

Patent Process

PROTOTYPE

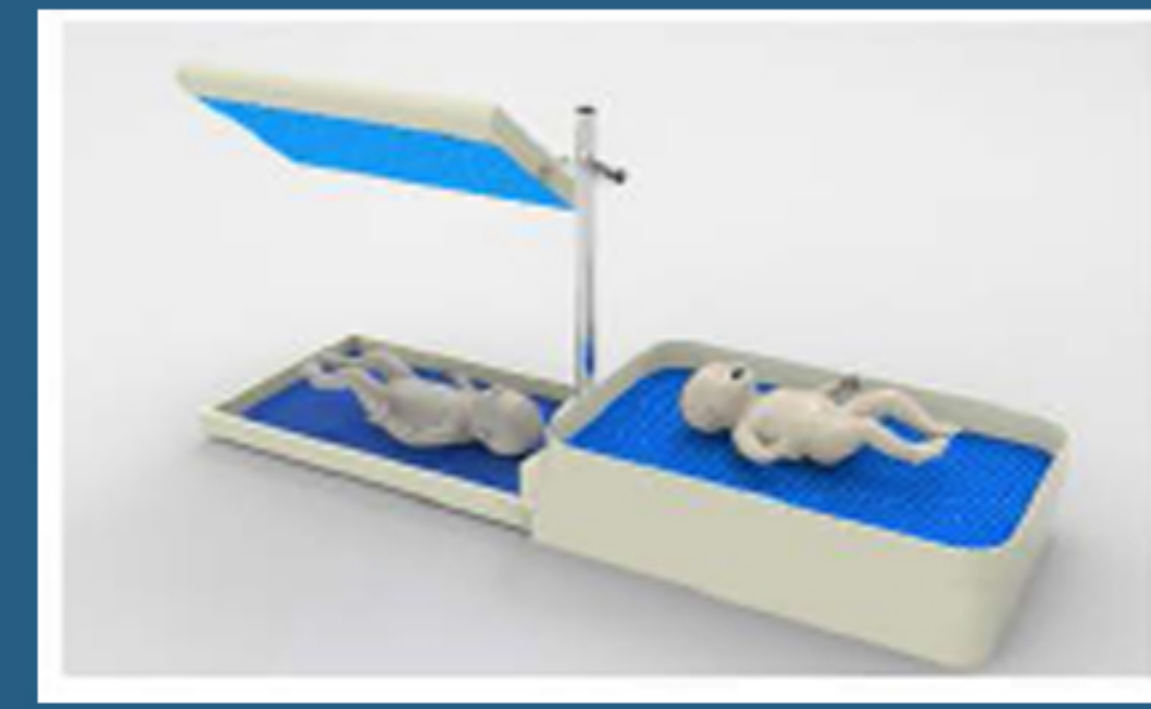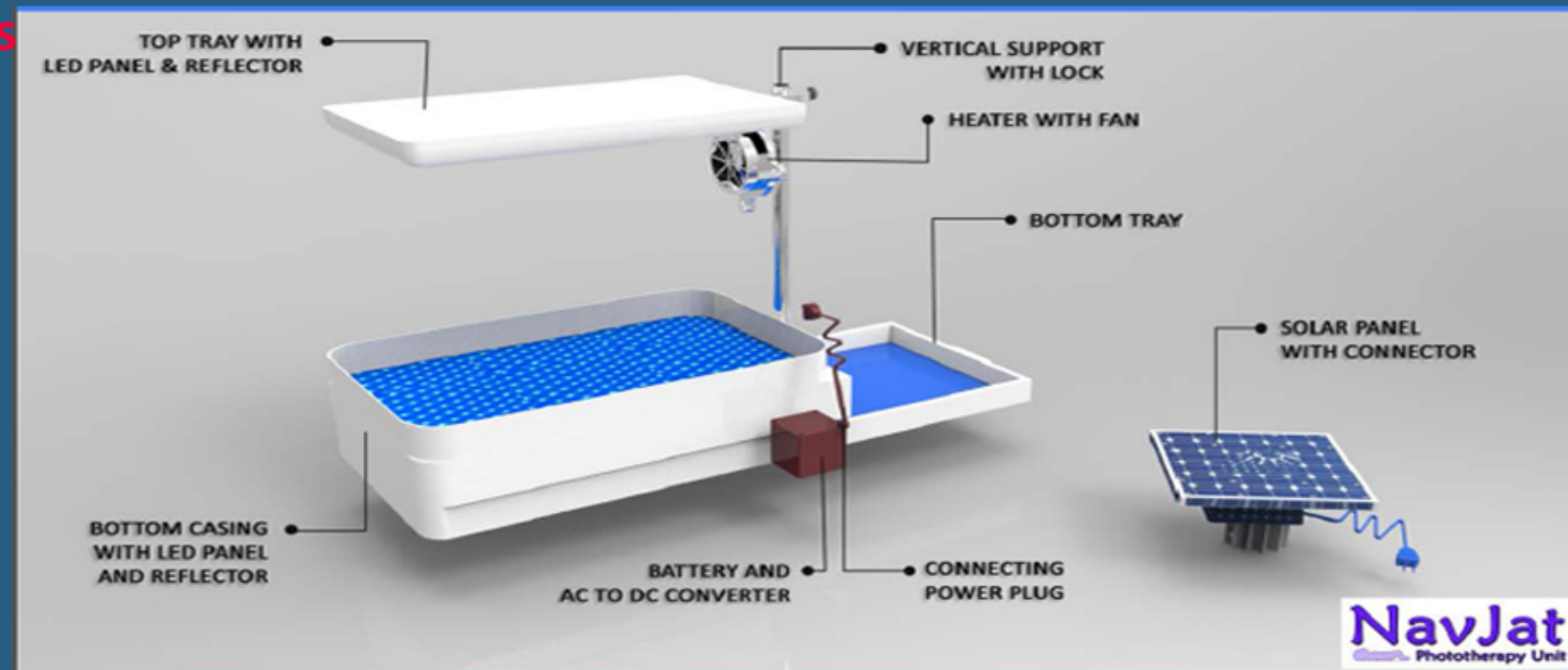ANALYSIS

PHOTOTHERAPHY UNIT

Design and development of a Phototheraphy unit to cure jaundice of new born babies and cater the needs of health care centres.

NAVJAT PHOTOTHERAPHY UNIT

PATENT PROCESS

Novel Features

-----Dual phototheraphy treatment.
-----Portability & compactness.
-----Use of reneable and non-renwable supply source.
----- Medium Cost.

TOP TRAY WITH LED PANEL & REFLECTOR

VERTICAL SUPPORT WITH LOCK

HEATER WITH FAN

BOTTOM TRAY

SOLAR PANEL WITH CONNECTOR

BOTTOM CASING WITH LED PANEL AND REFLECTOR

BATTERY AND AC TO DC CONVERTER

CONNECTING POWER PLUG

NavJat Phototherapy Unit

VIRTUAL TRIAL ROOM

Design and development of a novel software based interface for trial of clothes on a virtual screen.

Features:

--Captures Photo.
--Creates user database.
--Drag and drop from catalogues.
--USB Upload.
--Instant Shopping.

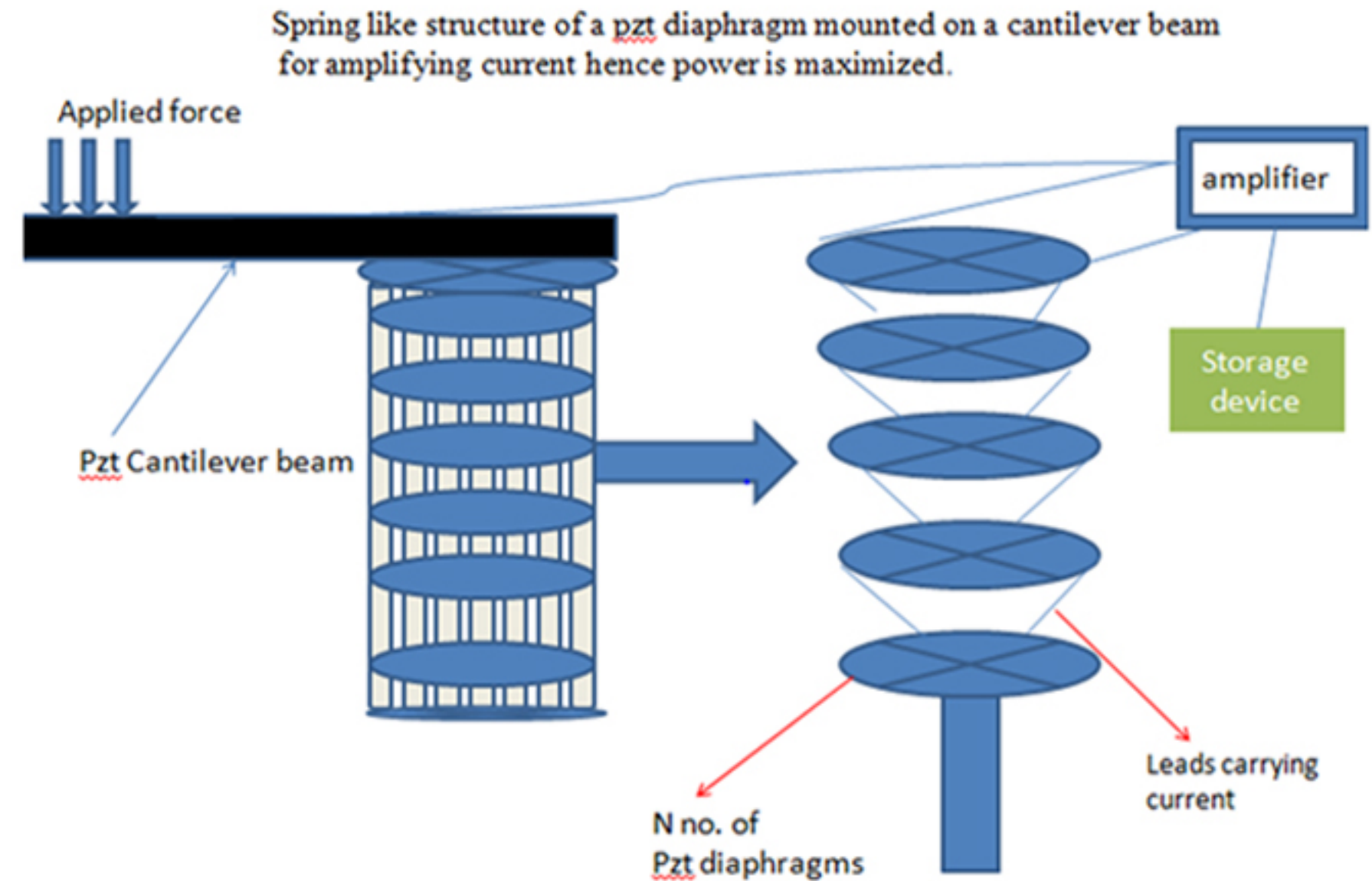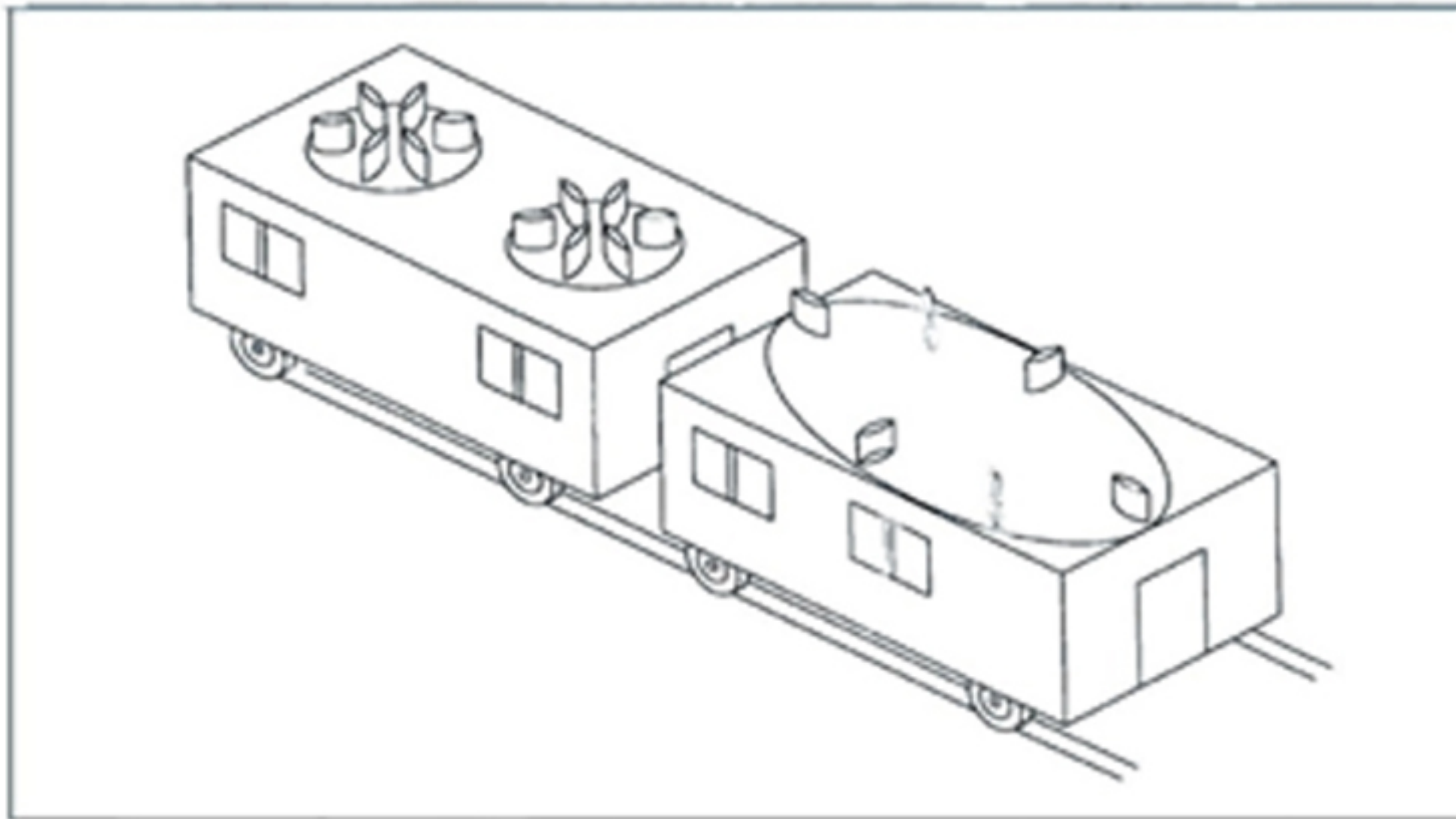PATENT FILED

PROTOTYPE

PROTOTYPE LINK: file:///E:/Documents/IIT%20Kanpur/1st%20SEM/DES%20633%20-%20Int%20New%20Prod%20Devp%20-%20NT/VTR/vtr_final_v2_19nov.swf

Energy Harvesting (Renewable Sources)

Energy harvesting on moving train using wind energy as well as piezoelectricity.

Spring like structure of a pzt diaphragm mounted on a cantilever beam for amplifying current hence power is maximized.

Applied force

amplifier

Pzt Cantilever beam

Storage device

N no. of Pzt diaphragms

Leads carrying current

A new Design of electricity generation from running vehicle using Wind Energy as renewable source of generation.

An efficient Design for Electricity generation in moving vehicles through Piezoelectric effect.

Green Product Design

A New Design of Water Level Controller in household storage tank.
Need: To stop wastage of water and electricity by switching off the water pump through an automatic cut-off system.

Prominent Features:

-- A mechanical control system which

--Design of Ultrasonic transmitter- receiver section which is mounted on the pipe nearby the motor.

Design Scheme

Prototype of New Design of Water Level Controller.

Peer to Peer Communication

For communication in free space , an optical way of transmitting the required audio signal to other side is considered.

A point to point communication system using laser light

--Development of a communication system using a transmitter and receiver section, for voice transmission.

--Range in air is up to 500meteres.

--Both the transmitter and receiver model is implemented .
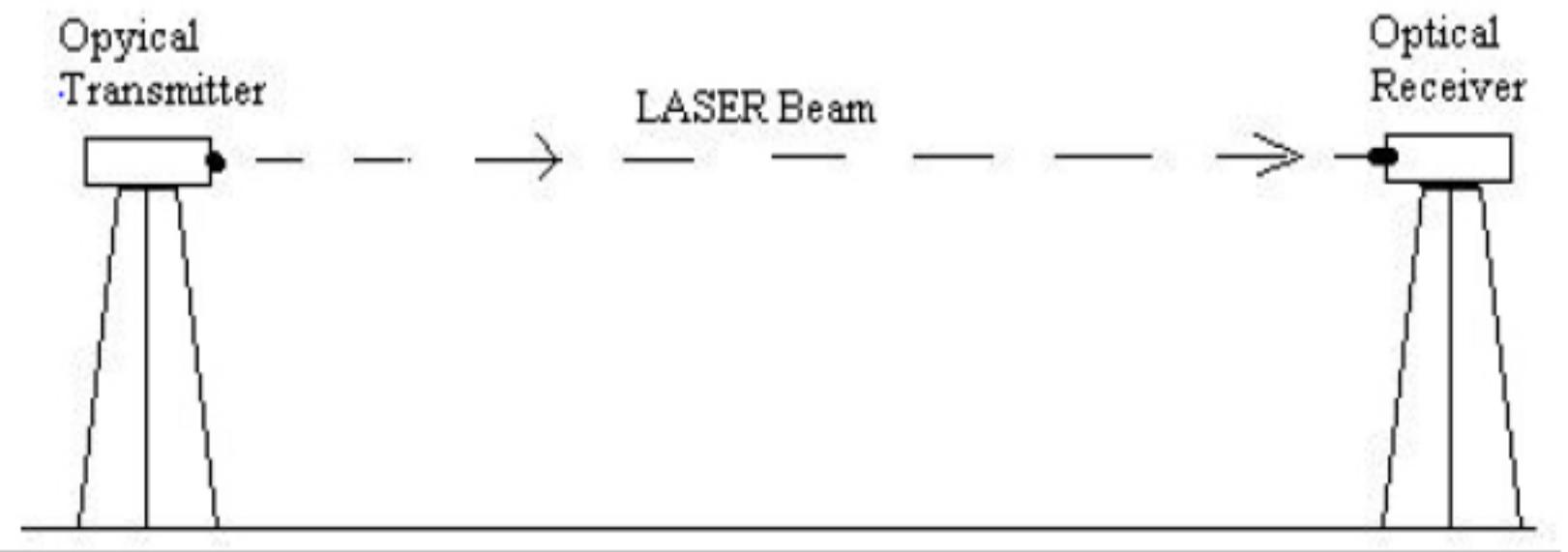
BLOCK DIAGRAM OF TRANSMITTER SECTION:

MIC → Wheatstone bridge → Voltage follower → Mosfet → Voltage Amplifier
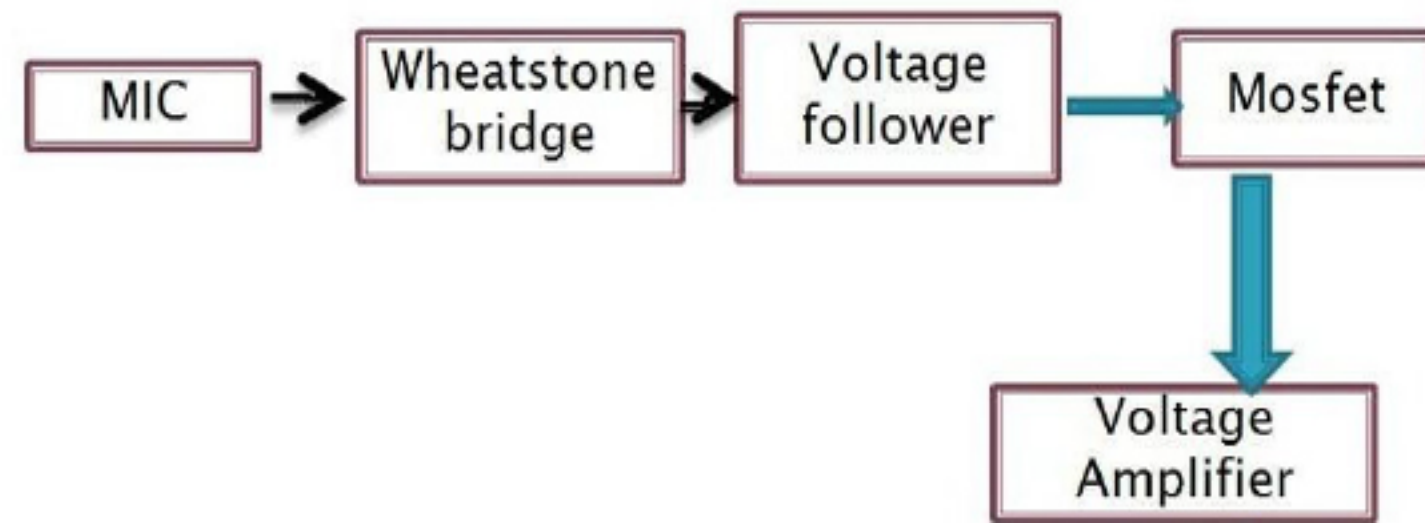
BLOCK DIAGRAM OF RECEIVER SECTION

PHOTODETECTOR → DIGITAL TO ANALOG CONVERTER → LOW VOLTAGE AUDIO POWER AMPLIFIER → SPEAKER → AUDIO OUTPUT
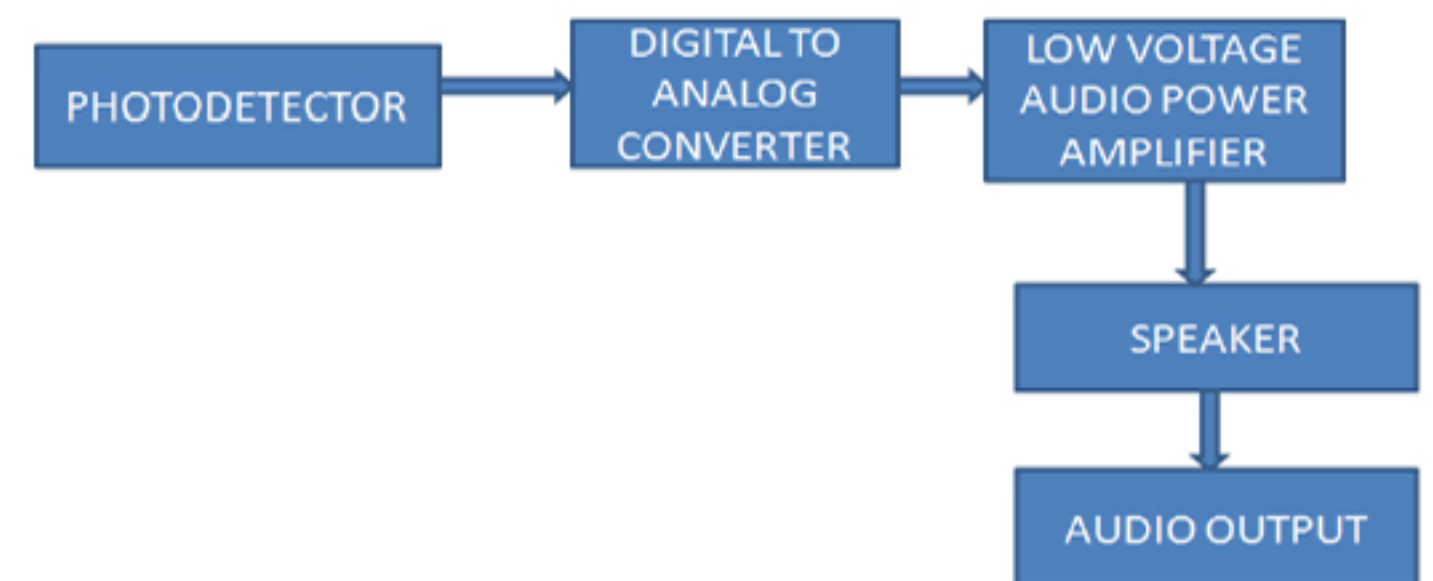
CURRICULUM VITAE

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Personal email: rajeshranjaniit@gmail.com
Date of birth: 19th March 1987
Contact: +91 9793566425
Skype Id: raranjan1987
Language: English, French, Hindi

EDUCATION

Indian institute of Technology Kanpur (2012-current)

DEGREE	CGPA
Master of Design	9.5

Vellore institute of technology (2006-2010)

DEGREE	CGPA
B.tech Electronics & Instrumentation	7.95/10

S.R.P College (2002-2004)

DEGREE	PERCENTAGE
HIGHER SECONDARY	54.55%

Lohia Nagar Mount Carmel High school (Passed in 2002)

DEGREE	PERCENTAGE
SECONDARY	81.17%

Software Skills:
1. LabVIEW
2. Simulink
3. D-space
4. L-T spice
5. Solidworks
6. Photoshop
7. C basics
8. Working with Eye tracker

Extra Curricular Activities:
☐ Cultural Secretary of HEC, IIT-Kanpur
☐ Organized the Hall Day cultural fest-Tarang at IIT-Kanpur.
☐ Member of Instrument Society of India.

Industrial Training:
Underwent Four week In plant training at Patratu Thermal Power Station, Jharkhand.

Objective
To work in an innovative and challenging environment, broaden my skill sets as well as enhance my cultural, design and technical horizons. I always use to discover new ideas for any set of problems that comes to me, especially which have a technical aspect. I give technical logics for solving day to day problems, which i have inculcated from my childhood. I am incredibly interested in research involving design aspects. I do believe that from all of these experiences I would acquire more broadened skill set, aiding in my successful career development.

Academic Achievement:
☐ Invited for conference and workshop at TED MINT organised by KTH Royal Institute of Technology, Sweden.
☐ Selected for Nokia PDP project at Aalto University, Finland.
☐ Selected for final year project internship in Technical University of Eindhoven, The Netherlands.
☐ Appreciated for two ideas in MY IDEA PROGRAMS organized jointly by TBI-VIT, IETE and L-RAMP,IIT MADRAS by giving new innovative ideas on Energy harvesting and stopping power wastage.
☐ Paper accepted for IEDEC Conference 2014 California,USA.

Hobbies:
☐ Discovering new Ideas
☐ Guitarist
☐ Music composition
☐ Cricket
☐ Volleyball
☐ Movie Making

Workshops/external courses:
☐ "Health monitoring and multi criteria optimization" by UK-INDIA Resear
initiative between universities of Sheffield U.K & IIT-Kanpur India.
☐ "Robo Veda" Robotics workshop.
☐ "Industrial and product design" by Dr. Prashant Kumar.
☐ "Product ecosystEms" by Raghu Kolli, Director Innovation workshops.
☐ "Product Design & Development" by Dr. A.K. Verma.
☐ "Control of Mobile Robots" Dr. Magnus Egerstedt on Coursera.org.
☐ "User Experience Design" by Mrs. Jhumkee Iyengar.
☐ "Aesthetic Design" by Ralf Weber, TU-Dresden.
☐ "Typography" by Dr. Uday Kumar.