AAVARTAN'19

VIGYAAN PROBLEM STATEMENTS

(Department of Bio Medical Engineering)

1. Lack of Water

Our body needs appropriate amount of water to function properly but the busy human life. We totally forget about it. Appropriate amount of water prevent the body from various health problem. Build a portable device that gives the information about percentage of water in body and liters of water, body requires.

2. Hearing Impaired Device

Those people are lucky who are not physically disabled but engineers have developed many devices that can help them. Are these devices cost effective? Can people at lower economy level afford them? Build a cost effective device that help hearing impaired people.

3. Injury Detector Device

In many accident cases, people can be saved but the lack of medical help, sometimes causes death. Build a device that is connected to a mobile app which will receives all required data from the device and in the case of emergency is able to inform relatives listed in it and nearby hospitals.

4. Virtual Interface for Blind People

A device that creates an image of external world in the mind of the blind people. The device will able to convert image formed on retina into electric impulse and transform these impulse to brain. Making such a device will help blind people having damaged optic nerve able to see.

5. Developing a Smart Delivery Service

As a we have learn drugs taking may cause a little but effective damage to other body parts mainly heart, liver etc. Developing a smart delivery service to the point it needed will not only heal the damage effectively and quickly but also stops damage to other parts.

6. Development of Low-Cost Versatile Endoscopic Equipment System for Neurosurgery Ventricular Intra-Cranial and Skull- Base surgery

Remote surgery at minimum accessibility for surgeon makes it challenging for operate neurosurgery, ventricular intracranial surgery and skull based brain surgery. Therefore, a virtual modality is required for enriching surgeons to perform certain surgeries with ease and confident. Thus, the development of low cost versatile endoscopic equipment by incorporating virtual reality. Augmented reality can be an attractive and ax-citing solution to explore.

7. Development of Multifunctional Biodegradable Nanoparticles /Nanocrystals for Cancer Diagnosis and Treatment

Early stage detection and localized treatment of cancer is a tedious task and be a hypothetical detection mechanism for early cancer detection, whereas biodegradable nanoparticles can play vital role of vectorized cargo in order to provide localized treatment.

8. Development of Low Cost Screening Device for Measuring Nutrients Content of Pregnant Women of India

As most of our population lives in rural India, and our nation is heavily driven by rural economy, it is trivial task of every technology to built an outlook of rural healthcare system, particularly of pregnant women, it is often found that this group of community is neglected and exposed to social stigma, which prevent every mother to give birth to a healthy new born. Therefore, it is need of economy and social reform by introducing technology to screen the quality of nourishment of pregnant mothers of our nation.

9. Development of Low Cost Set Up For Hearing Fatal Heart Rate at Rural India

Every nine out of twenty mothers of our country suffer from high risk pregnancy which results in death of fetus in mother's womb situation is more vulnerable of technology intervention (feasible of rural set up) to monitor heart rate of fetus continuously during the period of labour of pregnant mothers of rural India.