

Smart helmet [The ultimate alcohol and accident detection device]

Chetna R. Radke

St. Vincent pallotti college of Engineering and technology

Submitted: 10-03-2021

Revised: 27-03-2021

Accepted: 31-03-2021

A smart helmet is a special idea which makes motorcycle driving safer than before. It is a way to stop starting of vehicles without wearing helmet or even if the driver is boozed. In addition, it has a great feature of detecting accidents and informs specific people via SMS with location and speed of the bike before the accident occurs with the help of GPS GSM based tracking system, thus aiding ambulance to reach the correct location. We want to implement all the sensors within the helmet, which will send the information to the module connected with the bike engine wirelessly. The main purpose of this helmet is to provide safety for the rider. This can be implemented by using advanced features like alcohol detection, accident identification, location tracking, use as a hands free device, fall detection. This makes it not only a smart helmet but also a feature of a smart bike.

Why this smart helmet is necessary?

The smart helmet that ensures that the rider cannot start the bike without wearing it. This helmet uses simple cable replacement for wirelessly switching on a bike, so that the bike would not start without both the key and the helmet. Also, whenever the driver starts ignition, the alcohol sensor measures the content of the alcohol in his breath and automatically switches off the bike if he is drunken. To make driving more safe GSM and GPS technology is used. Vibration sensors are placed in different places of helmet where the probability of hitting is more which are connected to microcontroller board.

Which improvements we have to do in this smart helmet ?

We can also use solar module to make it more efficient and reliable. Using the solar panel on the top of the helmet head we can do both work simultaneously charging the electric bike as well as the smart helmet module. Future scope of improvement in our system may include provisions to turn off the device while security is not needed. i.e. while the bike is running. Further development can be done by replacing the buzzer with proper speaker that can playback the voice of user warning the thief to place the helmet back. This safety system technology can further be enhanced into four wheeler also by replacing the helmet with seat belt.

CONCLUSION

Every thing which get easily has no value or we can say less value, but life is different. We should take care of our life. In the above "Smart Helmet" is the best project which showed the various activities by the small module of electronic devices. The construction of Smart helmet will definitely reduced the rate of accident.

REFERENCES

- [1]. Thum Chia Chieh; Mustafa, M.M.; Hussain, A.; Zahedi, E.; Majlis, B.Y.; , " Driver fatigue detection using steering grip force," Research and Development, 2003. SCORED 2003. Proceedings. Student
- [2]. Jianyun Ni; Jing Luo; , "Microcontroller-based engineering education innovation, " Educational and Information Technology (ICEIT), 2010 International Conference on ,

- vol.3, no., pp.V3-109-V3-112, 17-19 Sept. 2010
- [3]. Ferreira, L.; Matos, E.L.; Menendez, L.M.; Mandado, E.; , " MILES: A Microcontroller Learning System combining Hardware and Software tools," Frontiers in Education, 2005. FIE '05. Proceedings 35th Annual Conference , vol., no., pp.F4E, 19-22 Oct. 2005