

Pro@Project

Stuti Kalra, GT Network

Despite rising awareness on helmet usage, head injury-related fatalities continue to rise. To address this, **Shashwat Prem Narang**, student of **Class XII, AIS MV**, has developed 'Safe Mate: life securing head shell' - an intelligent helmet that ensures proper vehicle riding and detects alcohol consumption. Let's find out more.

An urgent need

According to the WHO, proper helmet use reduces the risk of fatal injuries by 42%. In fact, not wearing a helmet and alcohol consumption are the two main reasons for severe head injuries. Safe Mate tackles both issues with an intelligent safety device.

Understanding science

Safe Mate uses advanced technology combining radio frequency transmission, pressure sensors, and alcohol detection. A transmitter in the helmet and a receiver in the bike work together: when the helmet's 'On' switch is activated, it checks if the helmet is worn properly and if the rider is sober. This data, encoded via RF, is sent to the bike, where a Micro Controller Unit controls the ignition. The bike starts only if both conditions are satisfied, ensuring safer driving.

Safe mate, safe life

A Helmet That Thinks Before You Ride

Pics: GT Editorial Board, AIS Noida



Safe Mate - life securing head shell

An insightful inspiration

Shashwat noticed that many two-wheeler riders suffer fatal head injuries in accidents, especially due to alcohol or careless driving. He realised that simply wearing a helmet could save lives. He began this project in May 2022 as part of Vasudha and it took him two months to complete the prototype.

Conquering hurdles

The main challenge was arranging and understanding the scientific principles of the sensors to be used in the helmet. For the same, he took the assistance of his mentor-teacher and the school's science coordinator.

Words of gratitude

Shashwat credits his school for providing the



Shashwat Prem Narang with Safe Mate

platform to turn his idea into a working prototype. With support from school principal and science coordinator, who arranged the necessary materials and sensors, he was inspired to design this innovative headgear.

Future vision

Shashwat plans to shrink the circuit by integrating it into a printed circuit board, making it compact to fit into the headgear. He also aims to power it with solar energy, promoting green and renewable energy use.

Awards & Recognition

- The project was patented in February (2024)
- Won INSPIRE Manak Award with prize money of 10,000 INR in February (2024)
- Presented the project at India International Science Festival (IISF) (January 2024)
- Interviewed by Doordarshan and Dainik Jagran (2024)
- First prize in Inter School ATL Technocrat competition (2023)
- First position in the final round of Inter Amity Vasudha Science competition (2023)
- First position in Research Paper Presentation on National Science Day (2024)
- Third prize in Inter Amity competition 'Amity Utsav' August (2022)
- Selected in top 1000 projects nationwide in Youth Ideathon (2022)
- Won CBSE Regional Level Science Project Competition (2022)
- Third position in Innovation Day for 'Future Kalam' Project competition Amity University, Noida (2022)
- First prize in Inter School ATL Fest in 'FutureTech' AIS Saket (2022)

Addressing UN SDGs

- **SDG Goal 3: Good Health and Well-Being**
- **SDG Goal 9: Industry, Innovation and Infrastructure**
- **SDG Goal 11: Sustainable Cities and Communities**

Pop the myths

The Story Behind Our Popular Beliefs

Swati Negi, GT Network

Have you ever heard your parents say, "Don't go out with wet hair, you'll catch a cold," when, in fact, cold is caused by viruses and has nothing to do with wet hair? Such science myths are circulating out in the world like old wives' tales. Come, let's shatter some of these misconceptions.

Myth: Cracking knuckles may lead to arthritis

Busted: Arthritis is either caused by autoimmune diseases or osteoarthritis and is something that happens over the decades. Cracking knuckles relieves joint pain and increases mobility.

Myth: Wet cell phone can be dried if put in rice

Busted: Contrary to the popular belief that your drenched phone can be sal-



vaged if dunked in a pot of uncooked rice, it might further damage your phone. Not only are these tiny granules incapable of sucking moisture, but they also invite dust particles into the speakers and ports.

Myth: Five-second rule

Busted: This absurd rule, which argues that if the food item falls on the ground and is picked up within five seconds, it's safe to consume as it's too early for germs to stick to

it, is utterly false. Bacteria and other germs stick almost immediately, no matter how quickly it's picked up from the floor.

Myth: Bulls attack when they see red

Busted: Bulls don't attack due to colour red but are triggered by the movement of the cape and the matador invading their personal space. Moreover, they are colour blind and can only see yellowish-green and bluish-purple shades.

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Cost of workshop: 10000 INR For Amities: Cheque in favour of 'The Global Times' deposited in principal's office For Non Amities: Draft in favour of 'The Global Times' deposited at the nearest AIS/AGS branch in principal's office

Takeaways