

A device to prevent road accidents, underruns

This instrument will prevent cars from going under a truck through an energy absorbing pivoting mechanism

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As part of the recently held maiden six-week summer programme, Invent@IITGN at Indian Institute of Technology Gandhinagar (IITGN), two students — Shubham Nandeshwar and Tanmaey Gupta — from IIT Madras and Gandhinagar respectively, have invented a car underrun protection device. The device will prevent a car from going under a vehicle through an energy absorbing pivoting mechanism.

Nandeshwar said, "After a week of training, we were asked to find solution to day-to-day problems. We decided to find a solution to prevent damages caused during road accidents."

He added, "Its a device that reduces impact of a collision between a



■ Car underrun device designed by IITians

high ground vehicle and a car. It prevents the car from sliding under a high ground vehicle (for instance, a truck). The device has a pivot mount that connects to the centre of the underside of the truck chassis and two upright support arms."

The support arms reach to the back

of the truck and connect to an energy-dissipating subassembly. Rotational motion of the subassembly upon a collision is restrained by two high stiffness springs that attach to the truck chassis and the support arms.

"The sub-assembly includes an energy absorption element sandwiched between both an inner and an outer bumper. The energy absorbing sub-assembly can pivot about a central mount for assisting passenger vehicle towards side thereby reducing the severity of underrun collisions," said Gupta.

He added, "In India, only a metal rod is used as an underrun device. We used metal foam to stop collision. Metal foam is generally used in aircraft. The device was designed in six-week's time with a budget of Rs 50,000." Nandeshwar informed that the duo has also applied for the US patent for the product.

Invent@IITGN is inspired by USA's Invention Factory and was funded by four IIT Bombay alumni.

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