**CBSE NATIONAL LEVEL SCIENCE EXHIBITION 2016-17**

**Write up on Model / Exhibit**

Affiliation No.: 1630149

Name of the School & Address: B.C.M. Sr. Sec. School Sector-32A , Chd. Road, Ludhiana

Name of the Exhibit & Sub-theme: Smart seatbelt and speed monitoring system ; Transport and Communication

***Purpose:***

***Everyday thousands of people die in car road accidents across the globe. Most of them occur due to lack of care in following the traffic rules. Majority of accidents are due to not wearing seatbelts and over-speeding. Our device solves these problems by first detecting and then automatically reporting the police about any defaulter so that they could automatically impose fine on him/her. It also relieves the pressure on cops as they can now monitor the traffic outlaws just by sitting in their headquarters.***

***The Scientific principle involved:***

***This device works on the principle of wireless transmission & reception of information over radio frequencies.***

***Material used:***

***Radio transmitter and receiver; OLED Display ; RFID card reader module; Prototype of seatbelt; Microcontrollers (Arduino); Revolving chair; Batteries; PCB(s) ETC….***

***Construction and working:***

***The Device works by detecting if the seatbelt is connected or not by using a pair of contact sensors present in our modified seatbelt holder. Also, It adjusts the speed variable of the circuit by using a potentiometer knob.***

***The RFID Reader reads the licence of the driver and decides to lock or unlock the car.***

***This information about the speed, seatbelt and licence is then sent to a microcontroller for processing. The microcontroller processes and further transmits this information by using a RF transmitter unit.***

***On the receiving side, a RF receiver circuit receives these signals ; and transfers it in a police headquarter program where it gets further processed and displayed.***

***Applications:***

***This device would help to ensure safety of the people by creating a compulsion to follow traffic rules and spreading caution about them .Furthermore it would greatly reduce the workload on the cops who stand day and night monitoring the traffic. Now they could do that even while sitting in their headquarters. The corruption factor would be reduced by a great extent by this project’s implementation.***

Name of participant/s : Danish Joshi ; Thalesh Kashyap

Name of the Escort teacher : Mr Ravinder Pal Singh

Name of the school with the complete address :

B.C.M. Sr. Sec. School Sector-32A , Chd. Road, Ludhiana